ASIA-PACIFIC ASSOCIATION OF PAEDIATRIC UROLOGISTS
APAPU

LIVE Virtual Congress

APAPU

The 22nd Congress of Asia-Pacific Association of Pediatric Urologists (APAPU 2022)

2022

Date October 20-22, 2022

Website apapu2022.com

자기 전에 미리미리 **미니린**[1]

Minirin

밤샘 지킴이

Minirin® 은 야간다뇨와 관련이 있는

DESMOPRESSIN ORAL LYOPHILISATE

모든 종류의 야간뇨에 권장될 수 있습니다.[2]

References

1)제품설명서 미니린멜트 I **효능효과** 일차성 야뇨증(5세이상), 야간다뇨와 관련이 있는 야간뇨증상의 치료(성인에 한함) **용법용량** 일차성 야뇨증(5세이상) : 취침시 초산데스모프레신으로서 0.2mg을 경구투여한다. 효과가 충분하지 않을 경우 0.4mg까지 증량할 수 있다. 치료의 지속여부는 투여 3개월 후 적어도 1주일간 투여를 중지한 상태에서 결정한다. 야간다뇨와 관련이 있는 야간뇨증상의 치료(성인에 한함) : 취침시 초산데스모프레신 0.1mg을 경구투여한다. 일주일 후에도 효과가 충분하지 않을 경우 0.2mg으로 증량하고, 계속하여 효과가 충분하지 않으면 일주일 간격으로 증량하여 0.4mg까지 사용할 수 있다. 용량결정 후 4주이내에도 임상적인 효과가 없을 경우 투여를 중지한다. **사용상 주의사항** 1. 경고 다음 및 고령자에서는 저나트륨혈증, 수분 중독으로 인해 혼수 등을 일으킬 수 있으므로 이를 예방하기 위하여 갈증을 없앨 정도만 수분을 섭취하도록 주의한다. 2. 다음 환자에는 투여하지 말 것. 1) 이 약 및 이 약 성분에 과민증의 병력이 있는 환자 2) 습관성 및 심리적 번갈 다음증 환자(뇨량이 24시간동안 40mL/kg를 초과하는 경우) 3) 대상기능장애성 심부전 환자 4) 이뇨제를 복용중인 환자 5) 신성 요붕증 환자 6) 이 약은 야뇨증 치료시 정상혈압환자에만 투여한다. 7) 중등도 및 중증 신부전 환자 (크레아티닌 클리어런스 50ml/분 미만) 8) 항이뇨호르몬 분비과잉 증후군 (SIADH) 9) 저나트륨혈증으로 확진된 환자 3. 다음 환자에는 신중히 투여할 것. 1) 고혈압을 수반하는 순환기 질환, 중증의 동맥경화증, 관상동맥혈전증 환자(혈압을 상승시켜 증상을 악화시킬 수 있다) 2) 만성 신질환 환자 3) 임부 또는 임신하고 있을 가능성이 있는 부인 4) 소아 및 고령자 5) 수분 및 전해질의 불균형을 초래할 질환 환자 및 뇌내압이 증가할 위험이 있는 환자 6) 낭성 섬유증과 같이 수분 및 전해질 불균형과 관련된 질환을 가진 환자(저나트륨혈증을 일으킬 수 있다) 7) 절박요실금, 기질적 원인으로 인한 배뇨빈도 혹은 야간뇨 증가 (예를 들어 양성 전립선비대(BPH), 요로감염, 방광결석/종양), 조갈증 그리고 적절히 조절되지 않은 당뇨병 등이 있는 환자에 대하여는 그 원인질환을 치료하도록 한다. 4. 이상반응 1) 특히 다음과 고령자에서 혼수, 경련, 체중증가 등을 수반하는 중증의 수분중독 및 저나트륨혈증이 나타날 수 있다. 2) 야뇨증환자에서 보고된 부작용은 다음과 같다: 알러지반응, 저나트륨혈증, 감정적 장애, 두통, 복통, 구역, 알러지성 피부반응 3) 야간뇨 환자에 대한 임상시험에서 부작용을 보고한 환자의 35%는 용량 조절중에 부작용을 나타내었으며 보고된 부작용은 다음과 같다: 저나트륨혈증, 두통, 현기증, 말초부종, 빈뇨, 복통, 구역, 구갈 체중증가 5. 일반적주의 1) 부신피질 자극 부전의 경우 수분 독성을 피하기 위해 초회 투여 후 및 투여 중 주의한다. 2) 수분의 섭취는 이 약 투여 전 1시간에서 투여 후 8시간까지 제한되어야 한다. 단, 신기능 진단시 수분의 섭취는 이 약 투여 전 1시간에서 투여 후 12시간까지 최대 0.5L로 제한한다. 수분섭취를 제한하지 않으면 수분저류 그리고/혹은 저나트륨혈증이 나타날 수 있다. (두통, 구역/구토, 체중증가 그리고 심각한 경우 경련) 3) 임상시험에서 65세이상 환자에서 저나트륨혈증 발생률이 더 높게 나타났다. 그러므로, 고령 환자, 특히 수분 혹은 전해질 불균형을 초래할만한 질환을 가진 환자에게 치료를 시작하는 것은 권장되지 않는다. 고령환자, 저혈청나트륨 수치를 나타내는 환자 그리고 24시간 축적 배뇨량이 많은 환자(2.8-3L이상)에서 저나트륨혈증의 위험이 높다. 고령환자에서 치료가 고려되어야 한다면 치료시 직전 그리고 시작 후 3일 혹은 용량증가시 그리고 투약중 필요시에 혈청나트륨을 측정하여야 한다. 만일 수분저류 그리고/혹은 저나트륨혈증의 증상(두통, 오심, 구토, 몸무게 무게증가 및 경련등)이 나타나면 환자가 완전히 회복될 때까지 투약을 중단하여야 한다. 치료를 다시 시작할때는 철저한 수분 섭취 제한이 필요하다. 4) 야간뇨 환자에게 야간다뇨를 진단하기 위해 치료 시작전 적어도 2일동안 배뇨횟수/배뇨량 기록지를 기록하여야 한다. 야간뇨 생성량이 기능적 방광용적을 초과하거나, 24시간 축적 뇨량의 1/3을 초과하면 야간다뇨로 간주된다. 5) 전신감염, 발열, 위장관염증과 같이 수분 혹은/그리고 전해질 불균형이 나타날만한 급성 간헐성 질환을 앓는 동안에는 투약을 중지하여야 한다. 6) 이 약은 운전이나 기계조작능력에 대해서는 아무런 영향이 없다. 6. 상호작용1) 이 약의 수축작용은 항이뇨 작용에 비해 매우 낮으나 이 약 고용량을 다른 수축제와 병용투여시 환자를 충분히 관찰한다. 2) 이 약과 삼환계 항우울약, 염산이미프라민 병용에 의해 저나트륨혈증성 경련발작이 보고되었으므로 혈청 나트륨, 혈장삼투압 등을 모니터링한다. 3) 클로르프로마진, 카르바마제핀, 클로피브레이트, 클로프로파미드, 인도메타신, 프로스타글란딘 합성 효소 억제제는 항이뇨 작용을 증가시켜 수분저류의 위험성을 증가시킬 수 있다. 4) 글리벤크라미드와 병용투여시 항이뇨 작용은 감소될 수 있다. 5) 옥시토신과 병용투여시 항이뇨 작용 상승 및 자궁 혈액 공급의 약화를 일으킬 수 있다. 6) 비스테로이드성 소염진통제를 동시에 투약하는 경우 수분섭취제한과 혈청나트륨 모니터링을 포함하여 저나트륨혈증을 피하기 위한 주의가 필요하다. 7) 로페라마이드(loperamide) 병용 투여시 데스모프레신 혈장농도가 약 3배 상승하여 수분저류/저나트륨혈증의 위험성을 증가시킬 수 있다. 8) 디메티콘(dimeticone) 병용 투여시 데스모프레신 흡수 감소를 가져올 수 있다. 9) 이 약은 사람의 마이크로좀으로 수행한 in vitro시험에서 어떠한 상당한 간 대사도 겪지 않는 것으로 보이므로, 간 대사에 영향을 주는 약물과 상호작용이 없는 것 같다(in vivo연구는 실시되지 않음) 10) 이 약과 동시에, 혹은 투약 한시간반 이전에 27% 지방이 든 표준식사를 할 경우 데스모프레신 흡수율과 속도가 약 40% 감소되었다. 그러나 약물역학 (뇨생성 혹은 삼투압) 측면에서 큰 영향은 관측되지 않았다. 11) 음식물섭취는 약물의 흡수를 감소시키므로 항상 음식물섭취와 관련하여 동일 시간에 투약한다. 7. 임부 및 수유부에 대한 투여 1) 임부에 대하여는 드물게 자궁수축효과가 나타날 수 있으므로 주의한다. 2) 동물의 생식시험에서 태자에 대한 유해작용은 없었다. 임부의 요붕증 치료에서도 태아에 대한 유해작용은 보고되지 않았으나 사용경험이 충분치 않으므로 임부 및 임신하고 있을 가능성이 있는 부인에는 치료상의 유익성이 위험성을 상회한다고 판단되는 경우에만 투여한다. 3) 이 약의 과량투여시(300㎍ 비강투여시) 많은 양이 유즙으로 이행되고 수유중 투여의 안전성이 확립되지 않았으므로 수유부에게 투여하는 경우 수유를 중단하는 것이 바람직하다. 8. 과량투여시의 처치 1) 증상 : 수분체류와 저나트륨혈증의 위험성이 증가되어 두통, 냉감, 구기, 경련, 의식상실 등이 나타날 수 있다. 2) 처치 : 증상에 따라 투여횟수 또는 용량을 줄이고 수분을 제한한다. 이 약에 대해 특별한 해독제는 없으나 중증의 수분저류시 등장 또는 고장 식염수 주입한다. 수분저류가 심각할 경우(경련, 의식상실 등) 푸로세미드와 같은 이뇨제를 투여한다.

2) Everaert, *et al*. ICH consensus, *Neurourology and Urodynamics*. 2019.

[최신의 정보확인 방법] 이 첨부문서 작성일자[2019년 12월 24일] 이후 변경된 내용은 한국페링제약[Tel:02-534-2761] 혹은 의약품통합정보시스템(https://nedrug.mfds.go.kr/index)에서 확인할 수 있습니다.

FERRING PHARMACEUTICALS

한국페링제약(주)

서울시 송파구 올림픽로 35길 137 한국광고문화회관 14층 TEL: 02) 534-2761~4 FAX: 02) 534-2956

서울특별시 서대문구 충정로 8 {충정로 3가} TEL 02-2194-0300 FAX 02-2194-0369

소비자상담실 : 080-6776-080(수신자부담) **제품상세정보 :** www.ckdpharm.com

종근당

MI-004-02-20

전립선비대증,
“한미탐스 패밀리”로 시작하세요!

전립선비대증 1차 치료제

한미탐스 (탐스로신염산염)

캡슐 0.2mg / 0.4mg

오디정 0.2mg / 0.4mg

국내 최초 Tamsulosin 용량별 두 가지 제형을 **모두 보유**

한미탐스 0.4mg : [효능효과] 양성 전립샘비대증에 따른 배뇨장애. **[용법용량]** 성인) 탐스로신염산염으로서 1일 1회 0.4mg 식후에 경구투여 한다. 이약을 통째로 삼켜야 하며 부수거나 씹으면 안된다.

Hanmi 한미약품

Welcome Message

Ladies and Gentlemen,

I would like to welcome everyone who participated in the APAPU 2022 Korea online meeting.

In the past 2 years, our daily lives have been heavily affected by COVID 19. We didn't have contact meetings for a long time. So, we missed offline meeting. One years ago My expectation is that today`s meeting would be possible as a contact meeting. But the situation in Korea deteriorated suddenly 3 months ago and unfortunately switched to the online meeting. Anyway, we should continue our academic meetings in spite of difficult situation. So, we have prepared a wonderful and highly informative program with great guest speakers and our outstanding APAPU member speakers. The APAPU 2022 Korea congress will be a good opportunity to exchange academic knowledge among our Asia Pacific pediatric urologists and pediatric surgeons.

Shortly reminding the history of our society, APAPU was founded in 1998 by doctors from four countries and is now a representative society of the Asian-Pacific region in Pediatric Urology with 17 participating countries. I`d like to express my deepest gratitude to the senior members in APAPU for their role to develop our APAPU society. Inheriting the spirit of our seniors, our society is operated with the enthusiasm of the board members. This year, in 2022, Thailand participated as an APAPU member.

I`d like to introduce the international guest speakers, Professor Paul Austin from USA, Luis Braga from Canada, Antonio Macedo Jr. from Brazil. And prof. Philip Ransley as guest speaker and actually teacher in our APAPU society. I thank for attending as an international speakers despite the changing circumstances.

Now, let me introduce you to the people who have worked the most hard for this event. I`d like to thank the local scientific committee director, Dr. KwanJin Park and the scientific committee members for organizing the program for the Scientific Committee. I`d like to thank Dr. Min-Ki Baek of the local secretary general for organizing the event of the conference.

We would also like to express our deepest gratitude to the sponser companies who supported us for this event. Silver sponsor, Ferring, Hanmi Pharm. and Bronz sponsor Astellas, JW pharmaceutical, Dong-A ST.

I hope you all enjoy the 3 days APAPU meeting and sincerely hope that you all be well.

Thank you

Kun Suk Kim, M.D., Ph.D.
Professor, Department of Urology, Asan Medical Center
President of Asia-Pacific Association of Pediatric Urologist (APAPU)

Local Organizing Committee (APAPU 2022)

President

Kun Suk Kim
(Korea)

Secretary General

Minki Baek
(Korea)

Deputy Secretary General

Sang Hoon Song
(Korea)

Treasure
(Financial & Sponsorship Committee)

Jun Nyung Lee
(Korea)

Scientific Committee
(Speaker inviting & Program Committee)

Kwanjin Park
(Korea)

Communication Committee
(Social Committee)

Jae Min Chung
(Korea)

Publication & Homepage Committee

Ji Yong Ha
(Korea)

Executive Committee (APAPU)

President

Kun Suk Kim (Korea)

Past President

Stephen Shei-Dei Yan (Taiwan)

Secretary General

Carlos R.N. Torres, Jr. (Phillipines)

Director, Treasurer

Kaoru Yoshino (Japan)

Vice Treasurer

Kwanjin Park (Korea)

Director, Scientific Committee

Yuichiro Yamazaki (Japan)

Vice Scientific Committee

Jian Guo Wen (China)

Director, Educational Committee

Fuiboon Lai (Malaysia)

Chung-Kwong Yeung (Hong Kong)

Director, Information and Public Media Committee

Sang Don Lee (Korea)

Director, Inter-association Committee

Graham Smith (Australia)

Board Members

Te-Lu Yap (Singapore)

Huang Yichen (China)

Tarmono Djojodemedjo (Indonesia)

Sujit Chowdhary (India)

Sajid Sultan (Pakistan)

Advisory Committee _ Honorary Members, Past President

Saburo Tanikaze (Japan)

Dante P. Dator (Philippines)

Chung-Kwong Yeung (Hong Kong)

Sang Won Han (Korea)

Hideo Nakai (Japan)

Fang Chen (China)

Stephen Shei-Dei Yang (Taiwan)

Chairs

Carlos Torres
National Kidney and Transplant Institute, Philippines

Chung-Kwong Yeung
Department of Surgery, University of Hong Kong, Hong Kong

Fang Chen
Shanghai Children's Hospital, Medical School, Shanghai Jiaotong University, China

Grahame Smith
The Sydney Children's Hospitals Network, Australia

Kun Suk Kim
Asan Medical Center, University of Ulsan College of Medicine, Korea

Mitsuru Noguchi
Faculty of Medicine, Saga University, Japan

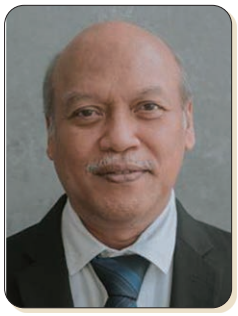
Philip Ransley
The Great Ormond Street Hospital for Children, United Kingdom

Sajid Sultan
Sindh Institute of Urology and Transplantation (SIUT) Karachi, Pakistan

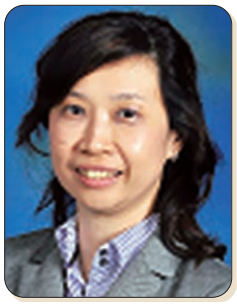
Sang Won Han
Yonsei University College of Medicine, Korea

Chairs

Sujit Chowdhary
Indraprastha Apollo Hospitals, India



Tarmono Djojodimedjo
Soetomo General Academic Hospital, Faculty of Medicine Universitas Airlangga, Indonesia



Te-Lu Yap
KK Women's and Children's Hospital, Singapore

Yuichiro Yamazaki
Kanagawa Children's Medical Center, Japan

Speakers

Antonio Macedo Jr
Federal University of São Paulo, Brazil

Byungjun Kim
Department of Plastic and Reconstructive Surgery, College of Medicine, Seoul National University, Korea

Deok Hyun Han
Sungkyunkwan University School of Medicine, Korea

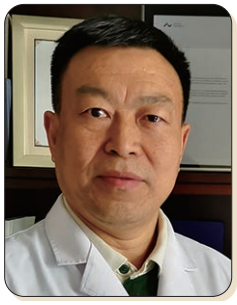
Fui-Boon Lai
Regency Hospital Malaysia, Malaysia

Fumi Matsumoto
Osaka Women's and Children's Hospital, Japan

Hye-Sung Won
Department of Obstetrics & Gynecology, University of Ulsan College of Medicine, Korea

Jae Min Chung
Pusan National University Yangsan Hospital, Korea

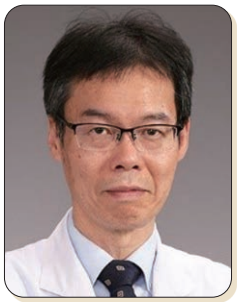
Ji Yong Ha
Keimyung University, Korea



Jian Guo Wen
First Affiliated Hospital of China Medical University, China

Speakers

Kobiljon Ergashev
National Children's Medical Center, Uzbekistan



Koji Shiraishi
Yamaguchi University, Japan

Kwanjin Park
Seoul National University College of Medicine, Korea

Kyu-Chang Wang
Department of Neurosurgery, Neuro-oncology Clinic, Center for Rare Tumor, National Cancer Center, Korea

Luis Braga
McMaster University, Canada

Minki Baek
Samsung Medical Center,Sungkyunkwan University School of Medicine, Korea

Paul Austin
Baylor College of Medicine, USA

Phitsanu Mahawong
Chiang Mai University, Thailand

Saidanvar Agzamkhodjaev
National Children's Medical Center, Uzbekistan

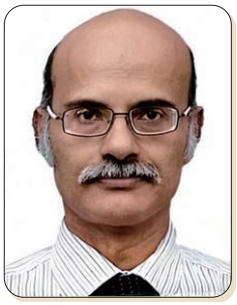
Sang Hoon Song
Asan Medical Center,
University of Ulsan College of Medicine,
Korea

Sang Woon Kim
Yonsei University College of Medicine,
Korea

Seung-Hun Song
CHA Gangnam Medical Center,
CHA University,
Korea

Shina Kawai
Okinawa Prefectural Nanbu Medical Center
and Children's Medical Center, Okinawa,
Japan

Stephen Shei-Dei Yang
Buddhist Tzu Chi University,
Taiwan



Subhasis Roy Choudhury
Lady Hardinge Medical College,
India

Ting Zhang
Children's Hospital of Soochow University,
China

Venkat Sripathi
Apollo Children's Hospital,
India

Yi Yang
Shengjing Hospital,
China Medical University, China

Speakers

Yichen Huang
Shanghai Children's Hospital
Affiliated to Shanghai Jiaotong University,
China

Yong Seung Lee
Yonsei University College of Medicine,
Korea

Youngjae Im
Seoul National University
College of Medicine,
Korea

Yuhua Fan
Taipei Veterans General Hospital,
Taiwan

Zafar Abdullaev
National Children's Medical Center,
Uzbekistan

Main Sponsors

Silver

FERRING PHARMACEUTICALS

Hanmi Hanmi Pharm.

Bronze

astellas

JW Pharmaceutical

DONG-A ST

Program

DAY 1

October 20 (Thu), 2022

09:00-09:10	Opening Remark	**Kun Suk Kim** (Korea)
09:10-10:30	**Urinary Tract Infection and Vesicoureteral Reflux**	**Sang Won Han (Korea)**
09:10-09:30	Asian Guideline of UTI	**Stephen Shei-Dei Yang** (Taiwan)
09:30-09:50	Practical Approach of Bladder Bowel Dysfunction (BBD)	**Paul Austin** (USA)
09:50-10:20	Panel Discussion - Management of Recurrent UTI in Low Grade VUR and Mild BBD	
	BBD Should Be Addressed First	**Fui-Boon Lai** (Malaysia)
	VUR Should Be Addressed First	**Grahame Smith** (Australia)
10:20-10:30	Free Paper: UTI/VUR and Miscellaneous	
10:20-10:25	The Effect of Circumcision/Continuous Antibiotic Prophylaxis on Preventing the Recurrence of Febrile Urinary Tract Infection in Boys with Primary Vesicoureteral Reflux	**Yan Chen** (China)
10:25-10:30	Idiopathic Bilateral Pampiniform Plexus Thrombosis in a Teenager	**Esther Ern Hwei Chan** (Singapore)
10:30-10:35	Break	
10:35-11:50	**Obstructive Uropathy**	**Grahame Smith (Australia)**
10:35-10:55	New Approach to Diagnose UPJO	**Luis Braga** (Canada)
10:55-11:15	Surgical Intervention of Duplex System: When to Intervene	**Youngjae Im** (Korea)
11:15-11:35	Long-term Problems Following Lower Tract Obstruction in Infancy	**Philip Ransley** (United Kingdom)
11:35-11:50	Free Paper: Obstructive Uropathy	
11:35-11:40	External Validation of a Deep-learning Model for Segmentation of Kidney Outline and Hydronephrotic Area Outline in Kidney Ultrasonography	**Sang Hoon Song** (Korea)
11:40-11:45	Comparison of Kidney Recovery Status According to the Period of Neonatal Pyeloplasty	**Youngjae Im** (Korea)
11:45-11:50	Ureteral Morphology Recovery after Intravesical Reimplantation in Children with Primary Obstructive Megaureter	**Yan He** (China)
11:50-11:55	Break	

Program

DAY 1

October 20 (Thu), 2022

11:55-12:35	**Fetal Urology**	**Kun Suk Kim (Korea)**
11:55-12:15	Fetal Intervention in Various Urological Problems	**Hye-Sung Won** (Korea)
12:15-12:35	Intrauterine MMC Repair : Urological Perspective	**Antonio Macedo Jr.** (Brazil)
12:35-13:25	Lunch	
13:25-14:15	**Urolithiasis**	**Sajid Sultan (Pakistan)**
13:25-13:45	Application of Best Nonsurgical or Surgical Approach to Pediatric Urolithiasis	**Sajid Sultan** (Pakistan)
13:45-14:05	Technical Consideration of MiniPERC, RIRS	**Deok Hyun Han** (Korea)
14:05-14:15	Free Paper: Urolithiasis and Miscellaneous	
14:05-14:10	Does Amplatz Sheath Size Matter in Pediatric PCNL? A Single-center Study	**Sharjeel Saulat** (Pakistan)
14:10-14:15	Penile Anthropometry Compared between Overweight or Obese and Non-overweight Children with Urological Diseases: A Cross-sectional Analytic Study	**Phitsanu Mahawong** (Thailand)
14:15-14:20	Break	
14:20-15:10	**Oncology**	**Tarmono Djojodimedjo (Indonesia)**
14:20-14:40	Long-term Renal Function and CV Morbidity Following Wilms Tumor Survival	**Jae Min Chung** (Korea)
14:40-15:00	Fertility Preservation Following Management of Pediatric GU Tumor	**Seung-Hun Song** (Korea)
15:00-15:10	Free Paper: Oncology	
15:00-15:05	Nomogram for Predicting Malignant Testicular Tumors in Children Based on Age, Alpha-fetoprotein, and Ultrasonography	**Min Wu** (China)
15:05-15:10	Prenatally Diagnosed Intrascrotal Testicular Teratoma in an Infant	**Fumi Matsumoto** (Japan)
15:10-15:15	Break	
15:15-16:25	**Laparoscopy and Robotics: Where Are We?**	**Sujit Chowdhary (India)**
15:15-15:35	Robotic Surgery in Pediatric Lower Urinary Tract Disease	**Sang Hoon Song** (Korea)
15:35-15:55	Single Port Robotic Surgery	**Yong Seung Lee** (Korea)
15:55-16:15	Application to Complex Reconstruction	**Venkat Sripathi** (India)

Program

DAY 1

October 20 (Thu), 2022

16:15-16:25	Free Paper: Laparoscopy/Hypospadias	
16:15-16:20	First 100 3D Retroperitoneal Laparoscopy Pyeloplasties in Our Part of the World: A Single-centered Study	**Sharjeel Saulat** (Pakistan)
16:20-16:25	Complications Following Proximal Hypospadias Repair Using One-stage Transverse Preputial Island Tube Urethroplasty	**Xin Liu** (China)
16:25-16:30	Break	
16:30-17:30	**Testis and DSD**	**Te-Lu Yap (Singapore)**
16:30-16:50	Suggested Age Limits in Orchiopexy _Are They Evidence Based?	**Subhasis Roy Choudhury**(India)
16:50-17:10	Experiences in DSD	**Fumi Matsumoto** (Japan)
17:10-17:30	Feminizing Genitoplasty: Shall We Preserve the Corporeal Bodies	**Phitsanu Mahawong** (Thailand)
17:30-17:35	Break	
17:35-18:05	**Round Table Discussion** **- Can Western Guidelines for DSD Hold for Asian Patients?**	**Chung-Kwong Yeung (Hong Kong)**
		Panelist: Subhasis Roy Choudhury (India), **Fumi Matsumoto** (Japan), **Phitsanu Mahawong** (Thailand), **Yi Yang** (China)
18:05-18:10	Break	
18:10-18:40	Free Paper: Testis and DSD	Te-Lu Yap (Singapore)
18:10-18:15	The Value of Diagnostic Laparoscopy for Impalpable Testis in Children	**Jae Suk Park** (Korea)
18:15-18:20	Metachronous Contralateral Occurrence of Hydrocele after Unilateral Hydrocelectomy in Children Younger than 8 Years	**Jae Min Chung** (Korea)
18:20-18:25	Clinical Characteristics of Gonadal Dysplasia Caused by WT1 Gene Mutation	**Yu Mao** (China)
18:25-18:30	Symptomatic Prostatic Utricle Cysts in Children Without External Genitalia Anomalies: A Single Institution's Experience	**Kok On Ho** (Singapore)
18:30-18:35	Hydrocele of the Canal of Nuck in Female Pediatric Patients: A Report of Nine Cases	**Takeshi Shono** (Japan)
18:35-18:40	Correlation between Mean Platelet Volume and Testicular Viability in Children with Testicular Torsion	**Meng He** (China)
18:40	Adjourn	
18:45-19:00	**APAPU Online General Assembly**	

Program

DAY 2

October 21 (Fri), 2022

09:00-10:30	Hypospadias	Fang Chen (China)
09:00-09:20	How Can We Troubleshoot the Skin Problem during and after Surgery?	**Byungjun Kim** (Korea)
09:20-09:40	Controversies on Hormonal Treatment for Hypospadias	**Luis Braga** (Canada)
09:40-10:10	Debate	
	Proximal Hypospadias: Should 1stage Procedure Be Discarded?	**Sang Woon Kim** (Korea) **Yichen Huang** (China)
10:10-10:30	Free Paper: Hypospadias	
10:10-10:15	Phenotypic Modulation of Vascular Smooth Muscle Cells in the Corpus Spongiosum Surrounding the Urethral Plate in Hypospadias	**Yu Huan** (China)
10:15-10:20	Urethral Duplication with Multiple System Anomalies Our Method for the Management of Urethral Duplication type IIA-1	**Zafar Abdullaev** (Uzbekistan)
10:20-10:25	Risk Factors of Cosmetic Outcomes after Hypospadias Repair: A Retrospective Analytical Study	**Wei Liu** (China)
10:25-10:30	Anthropometric Assessment on Prepubertal Boys with Hypospadias: A Multicenter Case Series	**Yunman Tang** (China)
10:30-10:35	Break	
10:35-12:05	**Enuresis and Voiding Dysfunction**	**Carlos Torres (Philippines)**
10:35-10:55	Management of Nocturnal Enuresis-updated Standardization Document	**Shina Kawai** (Japan)
10:55-11:15	Use of Mirabegron in Pediatric Bladder Dysfunction	**Yuhua Fan** (Taiwan)
11:15-11:45	The Influence of Over Disposable Diaper Usage on Prevalence of Enuresis in China	**Jian Guo Wen** (China)
11:45-12:05	Free Paper: Enuresis and Voiding Dysfunction/Neurogenic Bladder	
11:45-11:50	Analysis of Factors Determining Uroflow Patterns: Illuminating the Role of Dual Channel Electromyography	**Yoonhye Ji** (Korea)
11:50-11:55	Diagnostic Criteria for Functional Constipation in Nocturnal Enuresis	**Jae Min Chung** (Korea)
11:55-12:00	Age- and Gender-Specific Normal Post Void Residual Urine Volume in Healthy Adolescents	**Lim Li Yi** (Taiwan)
12:00-12:05	Vesicostomy Button as an Alternative to Mitrofanoff Bladder Drainage	**Senthil G Kamaraj** (India)

Program

DAY 2

October 21 (Fri), 2022

12:05-13:05	Lunch	
13:05-14:35	**Neurogenic Bladder**	**Mitsuru Noguchi (Japan)**
13:05-13:35	Spinal Dysraphism: What Urologist Should Know	**Kyu-Chang Wang** (Korea)
13:35-13:55	Real World Experiences in Pediatric Urodynamic Study	**Paul Austin** (USA)
13:55-14:25	Complex Urinary Incontinence: Things to Consider	**Antonio Macedo Jr.** (Brazil)
14:25-14:35	Free Paper: Neurogenic Bladder	
14:25-14:30	Cross-cultural Adaptation and Validation of the Korean Version of the Quality of Life Assessment of Spina Bifida for Teenagers (QUALAS-T-K)	**Seung Hyeon Yang** (Korea)
14:30-14:35	Results of Uroflowmetry Performed with Simultaneous the Dual-channel EMG in Patients with Spina Bifida with Spontaneous Voiding: by Comparison with the Voiding Phase of Cystometry	**Jieun Park** (Korea)
14:35-14:40	Break	
14:40-15:40	**Adolescent Varicocele**	**Yuichiro Yamazaki (Japan)**
14:40-15:00	Surgical Indications: Standards and Pitfalls	**Ji Yong Ha** (Korea)
15:00-15:20	Catch-up Growth VS Risk of Progression: When to Intervene?	**Koji Shiraishi** (Japan)
15:20-15:40	Free Paper: Neurogenic Bladder/Hypospadias	
15:20-15:25	Augmentation Cystoplasty with Mitrofanoff - Gold Standard in Reconstructive Urology	**Sharjeel Saulat** (Pakistan)
15:25-15:30	A Nomogram to Predict Urethral Plate Transection in Hypospadias: A Prospective Multicenter Study	**Pei Liu** (China)
15:30-15:35	Spongioplasty with Buck's Fascia as the Coverage of the Dorsal Inlay Graft Urethroplasty for Primary Hypospadias Repair	**Ting Zhang** (China)
15:35-15:40	Urethroplasty of Midscrotal Cicada Wing Flap in the Repair of Residual Type IV Curvature after Hypospadias Surgery	**Xuejun Wang** (China)
15:40-15:45	Break	
15:45-17:15	**My Experiences of Nightmare Complications**	**Philip Ransley (United Kingdom)**
15:45-16:15	Decreased Renal Function after Ureteral Reimplantation in a Patient with Bilateral Ectopic Ureter	**Yong Seung Lee** (Korea)
16:15-16:45	Urethral Atresia with Chronic Renal Failure	**Sang Woon Kim** (Korea)
16:45-17:15	Jj Stenting after Pyeloplasty: Is It So Simple?	**Kobiljon Ergashev** (Uzbekistan)
17:15	Adjourn	

Program

DAY 3

October 22 (Sat), 2022

Video Workshops on pediatric urological surgery continuous video streaming of surgical videos without moderation

Video Workshops on Pediatric Urological Surgery	
Bilateral Infant Pneumovesicoscopic Politano-leadbetter Ureteral Reimplantations	**Minki Baek** (Korea)
Laparoscopic Dismembered Pyeloplasty in Various Conditions	**Youngjae Im** (Korea)
Robotic Extravesical Common Sheath Ureteral Reimplantation for Duplicated Ureter with Lower Moiety Vesicoureteral Reflux	**Sang Hoon Song** (Korea)
Penumovesicoscopic Cohen Ureteral Reimplantation	**Youngjae Im** (Korea)
Hypospadias Repair: Things not to be missed	**Kwanjin Park** (Korea)
1st Stage Proximal Hypospadias Repair with Preputial Flap	**Minki Baek** (Korea)
Tubularized Incised Plate with Corporoplasty using TachoSil®	**Sang Woon Kim** (Korea)
Spongioplasty with Buck's Fascia as the Coverage of the Dorsal Inlay Graft Urethroplasty for Primary Hypospadias Repair	**Ting Zhang** (China)
Partial Penile Disassembly for Isolated Epispadias Repair	**Saidanvar Agzamkhodjaev** (Uzbekistan)

Contents

DAY 1

October 20 (Thu), 2022

Urinary Tract Infection and Vesicoureteral Reflux		
Asian Guideline of UTI	**Stephen Shei-Dei Yang** (Taiwan)	
Practical Approach of Bladder Bowel Dysfunction (BBD)	**Paul Austin** (USA)	**28**
Panel Discussion - Management of Recurrent UTI in Low Grade VUR and Mild BBD		
BBD Should Be Addressed First	**Fui-Boon Lai** (Malaysia)	**29**
VUR Should Be Addressed First	**Grahame Smith** (Australia)	**30**
Free Paper: UTI/VUR and Miscellaneous		
The Effect of Circumcision/Continuous Antibiotic Prophylaxis on Preventing the Recurrence of Febrile Urinary Tract Infection in Boys with Primary Vesicoureteral Reflux	**Yan Chen** (China)	**31**
Idiopathic Bilateral Pampiniform Plexus Thrombosis in a Teenager	**Esther Ern Hwei Chan** (Singapore)	**32**
Obstructive Uropathy		
New Approach to Diagnose UPJO	**Luis Braga** (Canada)	
Surgical Intervention of Duplex System: When to Intervene	**Youngjae Im** (Korea)	**34**
Long-term Problems Following Lower Tract Obstruction in Infancy	**Philip Ransley** (United Kingdom)	**36**
Free Paper: Obstructive Uropathy		
External Validation of a Deep-learning Model for Segmentation of Kidney Outline and Hydronephrotic Area Outline in Kidney Ultrasonography	**Sang Hoon Song** (Korea)	**37**
Comparison of Kidney Recovery Status According to the Period of Neonatal Pyeloplasty	**Youngjae Im** (Korea)	**38**
Ureteral Morphology Recovery after Intravesical Reimplantation in Children with Primary Obstructive Megaureter	**Yan He** (China)	**39**
Fetal Urology		
Fetal Intervention in Various Urological Problems	**Hye-Sung Won** (Korea)	**42**
Intrauterine MMC Repair : Urological Perspective	**Antonio Macedo Jr.** (Brazil)	**43**

Contents

DAY 1
October 20 (Thu), 2022

Urolithiasis		
Application of Best Nonsurgical or Surgical Approach to Pediatric Urolithiasis	**Sajid Sultan** (Pakistan)	**46**
Technical Consideration of MiniPERC, RIRS	**Deok Hyun Han** (Korea)	
Free Paper: Urolithiasis and Miscellaneous		
Does Amplatz Sheath Size Matter in Pediatric PCNL? A Single-center Study	**Sharjeel Saulat** (Pakistan)	**47**
Penile Anthropometry Compared between Overweight or Obese and Non-overweight Children with Urological Diseases: A Cross-sectional Analytic Study	**Phitsanu Mahawong** (Thailand)	**49**
Oncology		
Long-term Renal Function and CV Morbidity Following Wilms Tumor Survival	**Jae Min Chung** (Korea)	**52**
Fertility Preservation Following Management of Pediatric GU Tumor	**Seung-Hun Song** (Korea)	**54**
Free Paper: Oncology		
Nomogram for Predicting Malignant Testicular Tumors in Children Based on Age, Alpha-fetoprotein, and Ultrasonography	**Min Wu** (China)	**55**
Prenatally Diagnosed Intrascrotal Testicular Teratoma in an Infant	**Fumi Matsumoto** (Japan)	**56**
Laparoscopy and Robotics: Where Are We?		
Robotic Surgery in Pediatric Lower Urinary Tract Disease	**Sang Hoon Song** (Korea)	**58**
Single Port Robotic Surgery	**Yong Seung Lee** (Korea)	**59**
Application to Complex Reconstruction	**Venkat Sripathi** (India)	**60**
Free Paper: Laparoscopy/Hypospadias		
First 100 3D Retroperitoneal Laparoscopy Pyeloplasties in Our Part of the World: A Single-centered Study	**Sharjeel Saulat** (Pakistan)	**63**
Complications Following Proximal Hypospadias Repair Using One-stage Transverse Preputial Island Tube Urethroplasty	**Xin Liu** (China)	**65**

Contents

DAY 1
October 20 (Thu), 2022

Testis and DSD		
Suggested Age Limits in Orchiopexy _Are They Evidence Based?	**Subhasis Roy Choudhury** (India)	**68**
Experiences in DSD	**Fumi Matsumoto** (Japan)	
Feminizing Genitoplasty: Shall We Preserve the Corporeal Bodies	**Phitsanu Mahawong** (Thailand)	**70**
Free Paper: Testis and DSD		
The Value of Diagnostic Laparoscopy for Impalpable Testis in Children	**Jae Suk Park** (Korea)	**72**
Metachronous Contralateral Occurrence of Hydrocele after Unilateral Hydrocelectomy in Children Younger than 8 Years	**Jae Min Chung** (Korea)	**73**
Clinical Characteristics of Gonadal Dysplasia Caused by WT1 Gene Mutation	**Yu Mao** (China)	**74**
Symptomatic Prostatic Utricle Cysts in Children Without External Genitalia Anomalies: A Single Institution's Experience	**Kok On Ho** (Singapore)	**75**
Hydrocele of the Canal of Nuck in Female Pediatric Patients: A Report of Nine Cases	**Takeshi Shono** (Japan)	**77**
Correlation between Mean Platelet Volume and Testicular Viability in Children with Testicular Torsion	**Meng He** (China)	**79**

DAY 2
October 21 (Fri), 2022

Hypospadias		
How Can We Troubleshoot the Skin Problem during and after Surgery?	**Byungjun Kim** (Korea)	**84**
Controversies on Hormonal Treatment for Hypospadias	**Luis Braga** (Canada)	
Debate		
Proximal Hypospadias: Should 1stage Procedure Be Discarded?	**Sang Woon Kim** (Korea) **Yichen Huang**(China)	
Free Paper: Hypospadias		
Phenotypic Modulation of Vascular Smooth Muscle Cells in the Corpus Spongiosum Surrounding the Urethral Plate in Hypospadias	**Yu Huan** (China)	**85**

Contents

DAY 2
October 21 (Fri), 2022

Urethral Duplication with Multiple System Anomalies Our Method for the Management of Urethral Duplication type IIA-1	**Zafar Abdullaev** (Uzbekistan)	**86**
Risk Factors of Cosmetic Outcomes after Hypospadias Repair: A Retrospective Analytical Study	**Wei Liu** (China)	**87**
Anthropometric Assessment on Prepubertal Boys with Hypospadias: A Multicenter Case Series	**Yunman Tang** (China)	**88**

Enuresis and Voiding Dysfunction

Management of Nocturnal Enuresis-updated Standardization Document	**Shina Kawai** (Japan)	**90**
Use of Mirabegron in Pediatric Bladder Dysfunction	**Yuhua Fan** (Taiwan)	**91**
The Influence of Over Disposable Diaper Usage on Prevalence of Enuresis in China	**Jian Guo Wen** (China)	
Free Paper: Enuresis and Voiding Dysfunction/Neurogenic Bladder		
Analysis of Factors Determining Uroflow Patterns: Illuminating the Role of Dual Channel Electromyography	**Yoonhye Ji** (Korea)	**92**
Diagnostic Criteria for Functional Constipation in Nocturnal Enuresis	**Jae Min Chung** (Korea)	**94**
Age- and Gender-Specific Normal Post Void Residual Urine Volume in Healthy Adolescents	**Lim Li Yi** (Taiwan)	**95**
Vesicostomy Button as an Alternative to Mitrofanoff Bladder Drainage	**Senthil G Kamaraj** (India)	**96**

Neurogenic Bladder

Spinal Dysraphism: What Urologist Should Know	**Kyu-Chang Wang** (Korea)	**98**
Real World Experiences in Pediatric Urodynamic Study	**Paul Austin** (USA)	**99**
Complex Urinary Incontinence: Things to Consider	**Antonio Macedo Jr.** (Brazil)	**100**
Free Paper: Neurogenic Bladder		
Cross-cultural Adaptation and Validation of the Korean Version of the Quality of Life Assessment of Spina Bifida for Teenagers (QUALAS-T-K)	**Seung Hyeon Yang** (Korea)	**101**

Contents

DAY 2

October 21 (Fri), 2022

Results of Uroflowmetry Performed with Simultaneous the Dual-channel EMG in Patients with Spina Bifida with Spontaneous Voiding: by Comparison with the Voiding Phase of Cystometry	**Jieun Park** (Korea)	**102**

Adolescent Varicocele

Surgical Indications: Standards and Pitfalls	**Ji Yong Ha** (Korea)	**106**
Catch-up Growth VS Risk of Progression: When to Intervene?	**Koji Shiraishi** (Japan)	**108**

Free Paper: Neurogenic Bladder/Hypospadias

Augmentation Cystoplasty with Mitrofanoff - Gold Standard in Reconstructive Urology	**Sharjeel Saulat** (Pakistan)	**110**
A Nomogram to Predict Urethral Plate Transection in Hypospadias: A Prospective Multicenter Study	**Pei Liu** (China)	**112**
Spongioplasty with Buck's Fascia as the Coverage of the Dorsal Inlay Graft Urethroplasty for Primary Hypospadias Repair	**Ting Zhang** (China)	**113**
Urethroplasty of Midscrotal Cicada Wing Flap in the Repair of Residual Type IV Curvature after Hypospadias Surgery	**Xuejun Wang** (China)	**115**

My Experiences of Nightmare Complications

Decreased Renal Function after Ureteral Reimplantation in a Patient with Bilateral Ectopic Ureter	**Yong Seung Lee** (Korea)	
Urethral Atresia with Chronic Renal Failure	**Sang Woon Kim** (Korea)	
Jj Stenting after Pyeloplasty: Is It So Simple?	**Kobiljon Ergashev** (Uzbekistan)	

Contents

Non-moderated E-Poster			
P-01	Dysuria Due to Annular Hyperplasia of the Bladder Neck in a Female Child	**Yanze Wang** (China)	**120**
P-02	Technical Advantages of Modified Day Surgical Procedures for Penile Reconstructive Surgery over Inpatient Procedures and Standard Day Surgical Procedures	**Haoxuan Yang** (China)	**121**
P-03	Undescended Testis: Characteristic and Management in Makassar, Indonesia	**Muhammad Asykar Palinrungi** (Indonesia)	**122**
P-04	A Rare Case of Idiopathic Retroperitoneal Fibrosis in a Pediatric Patient	**Dainiel Edgar Reyes** (Philippines)	**123**
P-05	Efficacy of Dextranomer/Hyaluronic Acid Copolymer (DX/HA) Injection in Management of Vesicoureteral Reflux in Children - A Paradigm Shift in the Management	**Sharjeel Saulat** (Pakistan)	**124**

The 22nd Congress of
Asia-Pacific Association of Pediatric Urologists
(APAPU 2022)

2022

APAPU 2022

The 22nd Congress of
Asia-Pacific Association of Pediatric Urologists

DAY 1

October 20 (Thu), 2022

The 22nd Congress of
Asia-Pacific Association of Pediatric Urologists
(APAPU 2022)

2022

Urinary Tract Infection and Vesicoureteral Reflux

Sang Won Han (Korea)

Asian Guideline of UTI	**Stephen Shei-Dei Yang** (Taiwan)
Practical Approach of Bladder Bowel Dysfunction (BBD)	**Paul Austin** (USA)
Panel Discussion - Management of Recurrent UTI in Low Grade VUR and Mild BBD	
BBD Should Be Addressed First	**Fui-Boon Lai** (Malaysia)
VUR Should Be Addressed First	**Grahame Smith** (Australia)
Free Paper: UTI/VUR and Miscellaneous	
The Effect of Circumcision/Continuous Antibiotic Prophylaxis on Preventing the Recurrence of Febrile Urinary Tract Infection in Boys with Primary Vesicoureteral Reflux	**Yan Chen** (China)
Idiopathic Bilateral Pampiniform Plexus Thrombosis in a Teenager	**Esther Ern Hwei Chan** (Singapore)

Practical Approach of Bladder Bowel Dysfunction

Paul Austin

Department of Urology, Baylor College of Medicine, Texas Children's Hospital, USA

During this presentation, we will discuss the association of bladder and bowel dysfunction (BBD) with urinary tract infections (UTIs) as well as vesicoureteral reflux (VUR). We will discuss the therapeutic benefits of treating BBD with improvement of comorbidities including UTIs as well as VUR. Finally, we will review the international guidelines outlining the importance of recognizing and addressing BBD in the setting of VUR and/or UTI.

Management of Recurrent UTI in Low Grade VUR + Mild BBD - BBD Should Be Addressed First

Fui-Boon Lai

Regency Hospital Malaysia, Malaysia

The prevalence of VUR is estimated to be 0.4 to 1.8%. The actual incidence including asymptomatic and no foetal hydronephrosis is unknown.

Incidence of VUR in children with UTI ranges from 15 to 70%.

68% of VUR can resolve spontaneously, more so in low grade VUR.

Recurrent UTI in VUR increases the risk of new or worsening pre-existent renal scars and long-term reflux nephropathy.

Risk factors for recurrent UTI includes VUR grade, female gender and BBD.

About 50% of patients with VUR have BBD.

BBD increase risk of recurrent UTI, hence more renal scars and increases risk of long-term renal damage, decreases the likelihood of spontaneous VUR resolution and associated with reduced success rate in patients undergoing endoscopic therapy.

Thus, early diagnosis and treatment of BBD is mandatory in all patients with VUR.

Patients with VUR should be risk-stratified, management is individualised and geared toward prevention of recurrent UTI and long term sequalae of VUR-UTI.

Management of Recurrent UTI in Low Grade VUR and Mild BBD - VUR Should Be Addressed First

Grahame Smith

The Sydney Children's Hospitals Network, Australia

Children with recurrent urinary tract infections are often found to have bladder bowel dysfunction (BBD) and vesicoureteric reflux (VUR). In this debate I will argue that VUR should be corrected before BBD is treated.

There is no evidence that there are effective treatments for BBD. There is good evidence that VUR can be corrected. Correcting VUR satisfies the 3 important components of high quality care; it is effective, it is safe and the experience is not nosicomal.

It is likely that VUR causes BBD. Fixing VUR should therefore help BBD resolve.

We know VUR is associated with renal injury and we know we can fix it; so we should.

Free Paper: UTI/VUR and Miscellaneous

The Effect of Circumcision/Continuous Antibiotic Prophylaxis on Preventing the Recurrence of Febrile Urinary Tract Infection in Boys with Primary Vesicoureteral Reflux

Chen Yan[1], Wang Hui[1], Huang Yichen[1], Xie Hua[1], Kang Yulin[2], Zhang Yue[3], Chen Fang[1,4,5]

[1]Department of Urology, Shanghai Children's Hospital, School of medicine, Shanghai Jiao Tong University
[2]Department of nephrology, Shanghai Children's Hospital, Shanghai Jiaotong University, Shanghai, China;
[3]School of Life Sciences and Biotechnology, Shanghai Jiao Tong University,Shanghai, China;
[4]Department of Urology, Shanghai Jiao Tong University Affiliated Sixth People's Hospital, Shanghai, China.
[5]Shanghai Eastern Urological Reconstruction and Repair institute, Shanghai, China.

Objective To explore the preventing effect of circumcision and continuous antibiotic prophylaxis on the recurrence of febrile urinary tract infection in boys with primary vesicoureteral reflux.

Methods The clinical data of 88 boys with primary vesicoureteral reflux diagnosed in our hospital from June 2017 to June 2020 were retrospectively analyzed. The median age of the enrolled children was 10.2 months, and the average age was (15.3±15.9) months. The 88 boys were divided into 4 groups, including 3 cases in the watchful waiting group, 50 cases in the continuous antibiotic prophylaxis group, 22 cases in the circumcision group, and 13 cases in the continuous antibiotic prophylaxis + circumcision group. The recurrence of febrile urinary tract infection in each group was counted.

Results There were 21 cases (23.9%) of febrile urinary tract infection recurrence among 88 children, 2 cases (66.7%) in the watchful waiting group, 16 cases (32.0%) in the continuous antibiotic prophylaxis group, and 3 cases in the circumcision group (13.6%). There was no recurrence in 13 patients in the continuous antibiotic prophylaxis + circumcision group. There was a statistical difference in the recurrence rate between the 4 treatment groups ($\chi 2=10.181$, $P=0.011$). Factorial analysis suggests that circumcision is the main factor in reducing the recurrence of febrile urinary tract infections ($P=0.003$).

Conclusion For boys with primary vesicoureteral reflux, circumcision is the main factor in reducing the recurrence of febrile urinary tract infections. Circumcision combined with continuous antibiotic prophylaxis can prevent the recurrence of febrile urinary tract infection to the greatest extent.

Free Paper: UTI/VUR and Miscellaneous

Idiopathic Bilateral Pampiniform Plexus Thrombosis in a Teenager

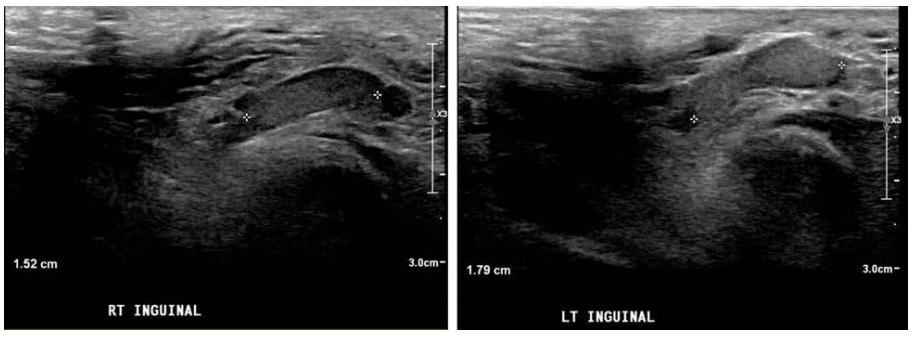
Esther Ern Hwei Chan, Fay Li Xiangzhen, Sim Siam Wee

Department of Paediatric Surgery, KK Women's & Children's Hospital, Singapore

Introduction Pampiniform plexus thrombosis (PPT) is an extremely rare condition with approximately 25 cases being reported in the literature. To the best of our knowledge, this is the first adolescent patient with idiopathic bilateral PPT. We discuss his presentation and management.

Case Report A 16-year-old boy presented with a 2-day history of bilateral testicular pain. It started over the left testis before spreading to the right, with the pain being worse on standing and relieved when sitting. There was no associated dysuria, nausea/vomiting, abdominal pain, fever or penile discharge. There was no history of trauma. He had no significant past medical or family history, and no previous smoking, alcoholism or illicit drug consumption. He has been taking Vitamin D and omega fish oil supplements for the past 6 years. He had no prior COVID-19 infection. On examination, there was bilateral testicular tenderness on palpation. Both testes had normal lie with intact cremasteric reflex. There was no scrotal oedema or erythema. An ultrasound was performed which revealed bilateral avascular echogenic material within a tubular structure in the inguinal canal measuring 1.8 x 0.5cm on the left and 1.5 x 0.5cm on the right suggesting bilateral PPT. Both testes and epididymes were normal. There was a left grade II 3mm varicocele. Full blood count, coagulation profile and urinalysis were normal. Abdominal ultrasound demonstrated a normal inferior vena cava with no evidence of any intra-abdominal or retroperitoneal mass. He was managed with oral analgesia and was discharged home the next day. He had complete symptoms by 3 days' post-discharge. Although it has been reported that PPT can be managed with anti-coagulation (low molecular weight heparin/warfarin) in the adult population, we did not prescribe any in view of a normal coagulation profile. A repeat ultrasound done 3 months later revealed complete resolution of his PPT. The left varicocele has remained stable. He was reviewed in the outpatient setting and remains well and asymptomatic.

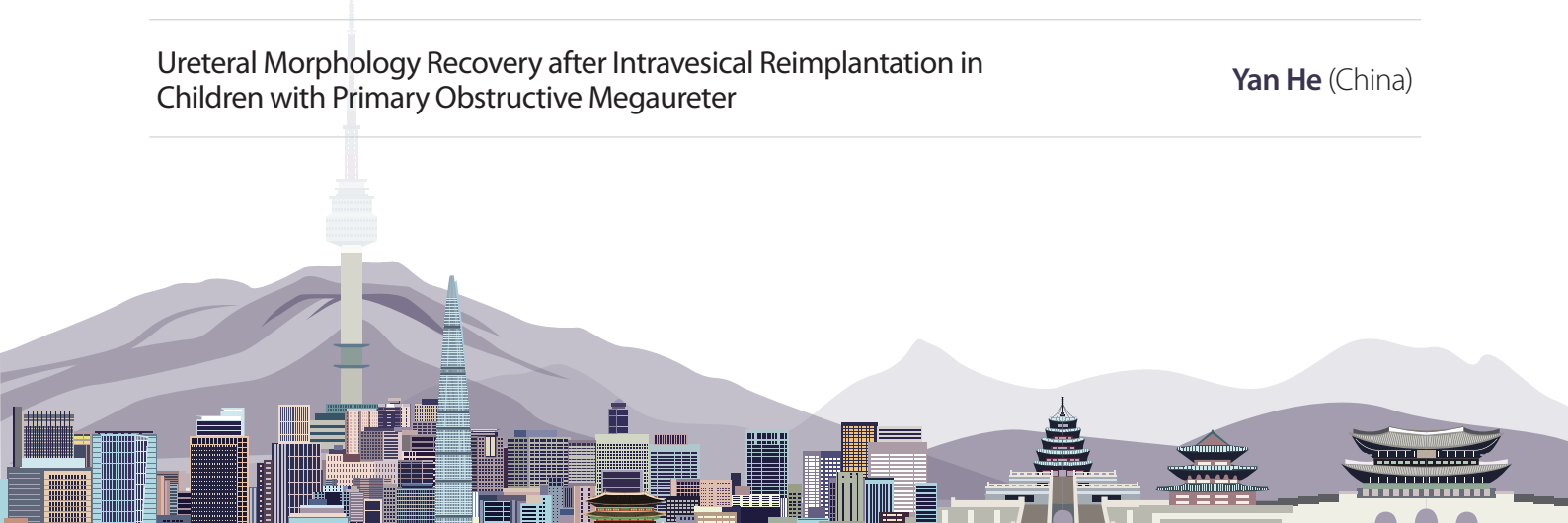
Conclusion PPT can occur in the paediatric population. It is important to rule out any associated haematological disorders, intra-abdominal/retroperitoneal masses and inferior vena cava occlusion. In the absence of these, PPT can be managed conservatively.



Obstructive Uropathy

Grahame Smith (Australia)

New Approach to Diagnose UPJO	**Luis Braga** (Canada)
Surgical Intervention of Duplex System: When to Intervene	**Youngjae Im** (Korea)
Long-term Problems Following Lower Tract Obstruction in Infancy	**Philip Ransley** (United Kingdom)
Free Paper: Obstructive Uropathy	
External Validation of a Deep-learning Model for Segmentation of Kidney Outline and Hydronephrotic Area Outline in Kidney Ultrasonography	**Sang Hoon Song** (Korea)
Comparison of Kidney Recovery Status According to the Period of Neonatal Pyeloplasty	**Youngjae Im** (Korea)
Ureteral Morphology Recovery after Intravesical Reimplantation in Children with Primary Obstructive Megaureter	**Yan He** (China)



Surgical Intervention of Duplex System: When to Intervene

Youngjae Im

Department of Pediatric Urology, Seoul National University Children's Hospital, Korea

The management of duplex system is debated and depends upon the function of the upper moiety, clinical symptoms, presence and location of ureterocele. Initially infant with a prenatal diagnosis of duplex system should undergo ultrasonography (kidney and bladder evaluation) and voiding cystourethrography in order to detect the presence of VUR, while nuclear renal scan (DMSA scan) may be performed to confirm the renal function, especially upper moiety.

Asymptomatic children in the absence of severe hydronephro-ureterosis are generally considered at low risk of developing UTI. In these children conservative management may be best option. In contrast, those presenting with severe hydronephro-ureterosis and/or VUR and recurrent UTI are at higher risk of surgical treatment.

In case of duplex system with ureterocele, the least invasive surgery is transurethral incision (TUI) of ureterocele. The lower success rates of TUI alone encourage another definite surgery such as heminephrectomy or urerteral reconstruction. The choice of surgical method is based on surgeon and patient preference as well as patient anatomy. Ipsilateral ureteroureterostomy has been often the treatment of choice for preserved upper moiety function. After ipsilateral ureteroureterostomy, important concern is the yo-yo reflux. Even in the presence of a severe dilated ureter, ureteroureterostomy is safe and successful irrespective of upper moiety function.

If there is concern of concomitant lower moiety VUR, the another surgical option is a common sheath reimplantation. Alternatively, ureteroureterostomy with lower moiety ureteral reimplantation can also be performed. Recently, more minimally invasive approaches including laparoscopic and robotic ureteroureterostomy have been described.

In case of poorly functioning of upper moiety, we may consider heminephrectomy. However function is good, conservative surgery such as common sheath reimplantation, ureteroureterostomy may be applied.

Reference

1. Stein R, Dogan HS, Hoebeke P, et al. Urinary tract infections in children: EAU/ESPU guidelines. Eur Urol. 2015;67:546-558.
2. Herz D, Merguerian P, McQuiston L. Continuous antibiotic prophlaxis reduces the risk of febrile UTI in children with asymptomatic antenatal hydronephrosis with either ureteral dilation, high-grade vesicoureteral reflux, or ureterovesical junction obstruction. J Pediatr Urol. 2014;10:650-654.

3. Castagnetti M, Vidal E, Burei M, Zucchetta P, Murer L, Rigamonti W. Duplex system ureterocele in infants: should we reconsider the indications for secondary surgery after endoscopic puncture or partial nephrectomy? J Pediatr Urol. 2013;9:11-16.
4. Kavanagh A, McAuley I, Longpre M, Macneily AE. Atrophic upper pole of a duplex collecting system masquerading as suprarenal mass: a case study and literature review. Can Urol Assoc J. 2010;4:E94-E96.
5. Braga LH, Moriya K, El-Hout Y, Farhat WA. Ureteral duplication with lower pole ureteropelvic junction obstruction: laparoscopic pyeloureterostomy as alternative to open approach in children. Urology. 2009;73:374-376.
6. VanderBrink BA, Cain MP, Gilley D, et al. Reconstructive surgery for lower pole ureteropelvic junction obstruction associated with incomplete ureteral duplication. J Pediatr Urol. 2009;5:374-377.
7. Biles MJ, Finkelstein JB, Silva MV, Lambert SM, Casale P. Innovation in robotics and pediatric urology: robotic ureteroureterostomy for duplex systems with ureteral ectopia. J Endourol. 2016;30:1041–1048.
8. Merguerian PA, Taenzer A, Knoerlein K, McQuiston L, Herz D. Variation in management of duplex system intravesical ureteroceles: a survey of pediatric urologists. J Urol. 2010;184(4 Suppl):1625–1630.

Long Term Consequences of Bladder Outflow Obstruction in Infancy

Philip Ransley

Honorary Senior Consultant of Urology in Great Ormond Street Hospital, United Kingdom

Obstruction of the posterior urethra by posterior urethral valves produces widespread changes throughout the urinary tract. The bladder becomes thick walled and non-compliant with increased collagen deposition in the wall. The ureters become dilated and peristalsis no longer functions as the walls cannot appose and the ureters may even become acontractile. The kidneys have reduced function from either dysplastic development or mature nephron loss.

The problem for the paediatric urologist is that although we can successfully remove the obstruction there is nothing active which we can do to alter or correct the problems which are left behind. We can observe the situation and hope that nature will gradually improve things once the obstruction has been removed. However, in doing so we risk also being witnesses to progressive deterioration.

It is therefore important that we eliminate as many of the adverse factors as possible in order to limit the ongoing negative effects on renal function. The most fundamental of these is the disparity between the volume of urine and the bladder compliance which is particularly important overnight when, among other things, it can lead to periods of high pressure storage which can effectively obstruct the kidneys. In addition, the lack of peristalsis in dilated ureters can mean that the glomerulus must increase filtration pressure when the patient is lying down; a form of hyperfiltration which can lead to progressive functional deterioration. Unfortunately, it is characteristic of the valve patient to have high urine volumes and poorly compliant bladders.

One of the few ways in which these problems can be ameliorated is to provide for free drainage of the large urine volumes and prevent any periods of high pressure urine storage. This can be achieved easily in early infancy by creating a low, unilateral, refluxing ureterostomy and in childhood by the early provision of a Mitrofanoff channel for overnight drainage.

Free Paper: Obstructive Uropathy

External Validation of a Deep-learning Model for Segmentation of Kidney Outline and Hydronephrotic Area Outline in Kidney Ultrasonography

Sang Hoon Song[1], Chan Hoon Kwak[1], Kyunghyun Nam[1], Kun Suk Kim[1], Sang Don Lee[2], Jae Min Chung[2], Young In Kim[3], Hyejung Youn[4], Jihoon Kweon[4]

[1]Department of Urology, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Republic of Korea, [2]Department of Urology, Pusan National University Yangsan Hospital, Pusan National University School of Medicine, Yangsan, Republic of Korea, [3]Department of Medical Science, Asan Medical Institute of Convergence Science and Technology, Asan Medical Center, Seoul, Republic of Korea, [4]Department of Convergence Medicine, Asan Medical Center, Seoul, Republic of Korea

Introduction We aimed to externally validate previously developed and trained algorithms to predict kidney area and hydronephrosis area from ultrasonography images in pediatric patients.

Methods A cohort was composed of 60 pediatric patients with 112 longitudinal ultrasound images with or without hydronephrosis from a tertiary University Hospital, which is independent of the institution where the deep-learning algorithms were developed. In this cohort, we analyzed the accuracy of previously developed and trained ten networks, such as combinations of DeepLabV3+ and UNet++, and ensemble methods for their segmentation performance using dice similarity coefficients (DSC) by comparison with the manually labeled area.

Results The mean anteroposterior pelvic diameter of 112 images was 4.8 (0-40) mm. SFU grade was 0 in 21 (18.8%), I in 41 (36.6%), II in 35 (31.3%), III in 9 (8.0%), and IV in 6 (5.4%). Three deep learning models achieved DSCs higher than 0.9 and the remaining models scored higher than 0.83 for the segmentation of the kidney outline. The DSC of the 10 models ensemble was 0.83 on average, 0.76 for hydronephrosis area segmentation, and 0.90 for kidney outline segmentation. After excluding images without hydronephrosis, the DSC of the 10 models ensemble was 0.85 on average, 0.78 for hydronephrosis area segmentation, and 0.91 for kidney outline segmentation. When we analyzed the images with SFU gr 3 and 4, the DSC of the 10 models ensemble was 0.91 on average, 0.88 for the hydronephrosis area, and 0.94 for kidney outline. The performance of our algorithm for kidney outline prediction in external validation was comparable to those obtained in the previous cohorts upon which the algorithms were developed and trained.

Conclusion Our algorithm showed high performance in segmenting kidney areas and hydronephrosis areas on external datasets, demonstrating its generalizability to different populations with diverse ultrasonography images especially with moderate to severe hydronephrosis.

Free Paper: Obstructive Uropathy

Comparison of Kidney Recovery Status According to the Period of Neonatal Pyeloplasty

Youngjae Im, Hyomyung Lee, Jihwan Yoon, Kwanjin Park

Department of Urology, Seoul National University College of Medicine, Seoul, Korea

Background The first few months after birth are very important times for kidney growth and the maturation of kidney function. The authors analyzed the effect on the recovery of the kidney after pyeloplasty according to the duration of severe hydronephrosis in the neonatal period.

Methods From 2000 to 2015, we retrospectively analyzed children who underwent pyeloplasty before 1 year of age. They were divided into two groups: those who underwent pyeloplasty before 3 months of age and those who underwent surgery after 6 months of age. Preoperative parenchymal thickness (PT), DRF on diuretic renogram (DRG) and postoperative PT and DRF on DRG were compared and analyzed in both groups.

Results There were 29 patients in the surgery group before 3 months and 20 patients in the surgery group after 6 months. The mean age at the time of surgery in the group before 3 months was 1.4 months, and the group after 6 months was 8.3 months. Mean PT (2.6mm vs. 2.4mm) and DRF (49.0% vs. 42.1%) before surgery were not significantly different between the two groups. On the other hand, ultrasound performed 1-3 months after surgery showed a slight difference in PT between the two groups (4.9mm vs. 3.9mm, P=0.05). However, as a result of additional tests performed afterwards, there was no significant difference in PT (6.0mm vs. 5.5mm, mean age at ultrasound: 54.6months) and DRF (48.9% vs. 43.3%, mean age at DRG: 82.8months) between the two groups.

Conclusions Even if severe hydronephrosis persists in the neonatal period, if parenchymal thickness and DRF are maintained, there is no need to promptly perform pyeloplasty. In addition, the kidney condition recovers in most cases regardless of the time of surgery. We think that studies on other indicators to determine the timing of surgery are needed.

Free Paper: Obstructive Uropathy

Ureteral Morphology Recovery after Intravesical Reimplantation in Children with Primary Obstructive Megaureter

Yan He, Rongde Wu, Guoqiang Du, Xuemin Wu

Department of Pediatric Urology Surgery, Provincial Hospital Affiliated to Shandong University, Jinan, China

Background Primary obstructive megaureter is a common cause of vesicoureteral junction obstruction and hydroureter. But to date, few publications have concerned the morphology changes of megaureter after ureteral reimplantation. In this study, we aimed to observe postoperative recovery of ureteral morphology in primary obstructive megaureter (POM) after ureteral implantation and evaluate the risk factors affecting ureter diameter resolution.

Methods A retrospective study was performed in POM patients who underwent ureteral reimplantation using Cohen procedure in-between January 2011 and January 2021. Patient characteristics, perioperative parameters, and postoperative outcomes were analyzed. The ureteral widest diameter <7mm was defined as normal morphology and the outcome event. Survival time referred to the time from surgery to ureteral morphology recovery or to the last follow up if the ureter diameter did not become normal.

Results A total of 50 patients (55 ureters) were included in the analysis. The survival time ranged from 1month to 53 months and the median survival time was 6 months. A total of 48 (87.27%) ureters were observed resolution of megaureter in our study, and most (29/48) resolution happened within 6 months after surgery. In univariate analysis, bilateral ureterovesical reimplantation (p=0.018), ureteral terminal tapering (p=0.015), weight (p=0.032) and age (p=0.013) were related to the recovery of ureteral morphology. A delayed recovery of ureter diameter was noted in bilateral reimplantation (HR=0.344, p=0.020) in multivariate Cox regression.

Conclusions Ureteral morphology in POM mostly returned to a normal size within 6 months after surgery. And bilateral ureterovesical reimplantation was a predictor for postoperative delayed recovery of ureter dilation in POM.

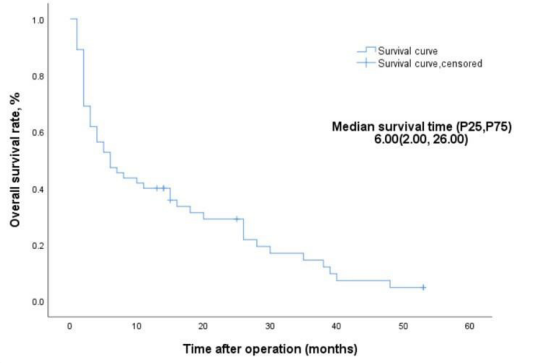


Figure 1 Kaplan-Meier survival curves for 55 ureters
There were 7 censored events in 55 ureters. The median survival time (P25, P75) was 6.00 (2.00, 26.00) and survival time ranged from 1month to 53months.

The 22nd Congress of
Asia-Pacific Association of Pediatric Urologists
(APAPU 2022)

2022

Fetal Urology

Kun Suk Kim (Korea)

Fetal Intervention in Various Urological Problems	**Hye-Sung Won** (Korea)
Intrauterine MMC Repair : Urological Perspective	**Antonio Macedo Jr.** (Brazil)

Fetal Intervention in Various Urological Problems

Hye-Sung Won

Department of Obstetrics & Gynecology, University of Ulsan College of Medicine,
Fetal Treatment Center, Asan Medical Center, Seoul, Korea

Several prenatal interventions in various urological problems have been attempted to improve perinatal survival. Fetal urological problems include posterior urethral valve, cloaca anomaly, urinoma, and hydronephrosis. Especially in fetal lower urinary tract obstruction (LUTO), vesico-amniotic shunt (VAS) appears to increase perinatal survival. In this presentation, I present our center's experiences with fetal urological intervention and its recent literature reviews. In conclusion, fetal intervention for various urological problems has been attempted and is feasible. Prenatal intervention, especially in fetal LUTO, has increased neonatal survival by improving lung hypoplasia. However, the risk of impaired kidney function in a postnatal period still exists, possibly leading to kidney replacement therapy. If fetal intervention is indicated, a multidisciplinary approach to prenatal counseling is necessary, providing postnatal prognosis by a pediatric urologist

Intrauterine MMC repair: Urological Perspectives

Antonio Macedo Jr.

Federal University of Sao Paulo, Brazil

Introduction

In-utero MMC repair is still a topic of debate among different institutions in regards to bladder function.

Material and Methods

Since 2011 we prospectively follow MMC patients operated in utero. We selected patients with a minimum of 8 years of age and at least 2 urological evaluations. We compared the first and last UE and clinical outcomes.

Results

We have identified 48 patients aged > 8 years, but only 34 filled the criteria defined. Our mean follow-up was 55.5 months. A VPS was done in 5.88% of cases. Mean age at first evaluation was 6.06 months. At initial presentation UTI was present in 29.4% and vesicoureteral reflux in 9.38%. High risk bladder pattern was found in 58.82% and incontinent pattern in 35.29% (Leal da Cruz categorization). CIC was initiated at 61.76% of patients. Maximal bladder pressure at cystometry (at peak contractions or baseline) was 62.38 cm H20. Detrusor overactive contractions were found in 79.41%. In follow-up, surgery was performed in 4 patients (11.76%): 3 augmentations, 2 ACE, 1 sling and 1 vesicostomy. Looking only at the 12 patients with sphincteric deficiency (LPP < 40cm H20), 7 remained fully incontinent on diapers (58.8%). None of the patients had renal scars.

Conclusion

This analysis confirms our statements that fetal MMC surgery offers limited improvement in bladder function compared to postnatal surgery. A secondary observation was that the "low-risk" pattern (incontinent pattern) is high-risk for future major bladder reconstruction to achieve continence.

The 22nd Congress of
Asia-Pacific Association of Pediatric Urologists
(APAPU 2022)

2022

Urolithiasis

Sajid Sultan (Pakistan)

Application of Best Nonsurgical or Surgical Approach to Pediatric Urolithiasis	**Sajid Sultan** (Pakistan)
Technical Consideration of MiniPERC, RIRS	**Deok Hyun Han** (Korea)
Free Paper: Urolithiasis and Miscellaneous	
Does Amplatz Sheath Size Matter in Pediatric PCNL? A Single-center Study	**Sharjeel Saulat** (Pakistan)
Penile Anthropometry Compared between Overweight or Obese and Non-overweight Children with Urological Diseases: A Cross-sectional Analytic Study	**Phitsanu Mahawong** (Thailand)

Application of Best Non-surgical or Surgical Approach to Paediatric Urolithiasis

Sajid Sultan

Sindh Institute of Urology and Transplantation, Pakistan

Urolithiasis is among the oldest disease known to the mankind. Last few decades have observed increasing incidence globally. Various areas in Pakistan have high prevalence of urolithiasis including children which present with a wide spectrum of stone disease. SIUT evaluation protocol includes detailed history, evaluation of dietary and urinary risk factors. Now almost all stone are managed with minimally invasive surgery. ESWL is recommended for 1-1.5cm renal stone. RIRS being costly has a limited role. Majority of the renal stones more than 1.5cms are managed by mini PCNL with around 90% stone clearance as monotherapy. Stone analysis is performed by FT-IR infra-red spectrometry. Ammonium hydrogen urate stone are more common in less than 5 year and calcium oxalate stones in 10-15 year children. Medical management to prevent recurrence is guided by stone analysis, dietary and urinary risk factors. Genetic stone like cystine, xanthine and primary hyperoxalouria are managed both surgically and medically. Urolithiasis is a complex multifactorial disease with wide spectrum of pathology requires multidisciplinary integrated management approach with facility and expertise under one roof.

Free Paper: Urolithiasisand and Miscellaneous

Does Amplatz Sheath Size Matter In Pediatric PCNL? A Single-center Study

Sharjeel Saulat, Jahanzeb Sheikh, Syed Saeed Uddin Qadri, Dur Amin, Mansoor Ejaz, Muhammad Osama

Tabba Kidney Institute, Post-Graduate Training And Research Center, Pakistan

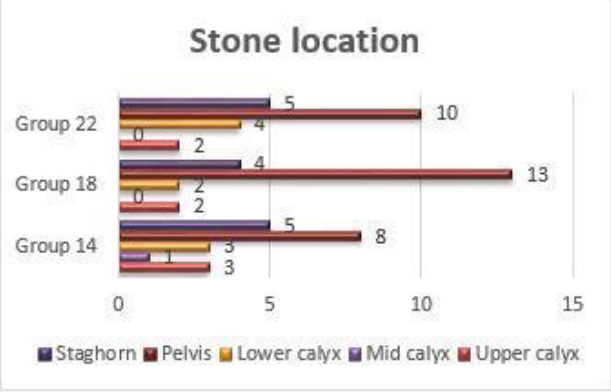
Introduction To evaluate the safety of different Amplatz sheath sizes used in pediatric Percutaneous Nephrolithotomy in terms of post operative outcomes of hemoglobin drop and stone clearance.

Methodology 500 patients underwent Percutaneous Nephrolithotomy within 5 years (from 2017 till 2021); the patients were categorized into two groups according to size of Amplatz sheath used for procedure. Group A consist of 240 (48%) patients with 12-18 Fr Amplatz sheath, while Group B had 260 (52%) patients with 20-22 Fr Amplatz sheath. Comparison of pre and post operative hemoglobin drop, need for blood transfusion, stone clearance rate and mean operative time for stone clearance was assessed. To assess the importance of data chi-square test was used, p value <0.05 was considered significant.

Result Median age and interquartile range of Group-A and Group-B patients was (12; 7) and (13; 5) years respectively. While stone size of Group-A and Group-B patients reported as (2.0; 0.60) and (2.1; 0.70) cm. The operative time and interquartile ratio of Group-A and Group-B patients was (75; 45) and (85; 45) minutes and we found significant change in HB of Group-A (0.90; 0.80) with Group-B patients (1.90; 0.70) gm/dl respectively [p = 0.000].transfusion in Group A (12-18 Fr). Group B required noticeably less operative time with no added benefit.

Conclusion This concludes that smaller size of Amplatz sheath (12-18 Fr) in Percutaneous Nephrolithotomy can be used in pediatric population with safety and better outcomes in terms of postoperative blood loss, post-operative transfusion rate and stone clearance.

Variables	Group A (12-18Fr)	Group B (20-22Fr)	p value
Patients (n)	240	260	0.6
Age (years)	4.8 ± 3.5	6.9 ± 4.4	0.04
Male / Female	183/57	148/112	0.05
Stone size	1.9 ± 0.8	1.8 ± 0.9	0.8
Pre Op HB	14.2 ± 1.9	13.5 ± 1.5	0.1
Post OP HB	13.1 ± 0.5	12.3 ± 0.5	0.05
Transfusion	12 (5%)	43 (16.5%)	0.04
Stone clearance	3 (1.2%)	52 (20%)	0.02
Total Operative Time	145.5 ± 36.6	90.4 ± 33.3	0.01
HB drop	2.4 ± 0.7	4.8 ± 1.0	0.03



Free Paper: Urolithiasisand and Miscellaneous

Penile Anthropometry Compared between Overweight or Obese and Non-overweight Children with Urological Diseases: A Cross-sectional Analytic Study

Sirawit Choksuchat, Phitsanu Mahawong, Jaraspong Vuthiwong

Division of Urology, Department of Surgery, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand

Background The prevalence of obesity among Thai children has almost doubled in the past 10 years. Obesity can impact a child's short and long-term health including penile size and length, but the correlation is controversial. The size and length of their offspring's penis is an issue of parental concern. To address this issue, we conducted a study to compare penile anthropometry between overweight or obese and non-overweight children and the effect of urological diseases on penile length and size.

Methods In this 2-year, single-center, cross-sectional analytic study, we compared penile anthropometry, including stretch penile length (SPL), coronal and midshaft diameter between overweight or obese and non-overweight children with urological diseases at Maharaj Nakorn Chiangmai Hospital. The effect of urological diseases on penile anthropometry was also included in this study. Male subjects were included in this study if they met the criteria of being 10 years of age and under, and without a previous diagnosis of micropenis.

Results A total of 176 patients were enrolled in the study, 2 of which were excluded due to a micropenis diagnosis. Patient characteristics were well balanced between the two groups in terms of median age, numbers of patients in each age bracket, and urological diseases. All penile dimensions increased with age in successive age groups, and a penile nomogram was created for all 3 dimensions of penile anthropometry (SPL, midshaft diameter and coronal diameter). When penile anthropometry was compared in all 3 dimensions between the groups in each age bracket, most had no statistically significant difference. Regarding urological diseases that affect penile anthropometry, it was found that children with hypospadias had a statistically significant difference in lower SPL than the children without the disease ($P = 0.001$).

Conclusions Overweight and obesity had no statistically significant effect on penile size and length compared to non-overweight boys with urological diseases. Patients with hypospadias had significantly shorter penile length compared to patients without the disease.

The 22nd Congress of
Asia-Pacific Association of Pediatric Urologists
(APAPU 2022)

2022

Oncology

Tarmono Djojodimedjo (Indonesia)

Long-term Renal Function and CV Morbidity Following Wilms Tumor Survival	**Jae Min Chung** (Korea)
Fertility Preservation Following Management of Pediatric GU Tumor	**Seung-Hun Song** (Korea)
Free Paper: Oncology	
Nomogram for Predicting Malignant Testicular Tumors in Children Based on Age, Alpha-fetoprotein, and Ultrasonography	**Min Wu** (China)
Prenatally Diagnosed Intrascrotal Testicular Teratoma in an Infant	**Fumi Matsumoto** (Japan)

Long Term Renal Function and CV Morbidity Following Wilms Tumor Survival

Jae Min Chung

Department of Pediatric Urology, Pusan National University Children's Hospital, Korea

Wilms tumors are the most common cancers in children diagnosed in kidneys with a general treatment rate of about 85%, using the recommended management strategy. Excellent results were the results of close cooperation between pediatric surgeons or urologists, pediatric oncologists, and pathologists. Therefore, multidisciplinary approaches lead to reasonable results in children with Wilms tumors. The recent development of Wilms tumors treatment has made much better prognosis. In some reports, the overall cure rate reached 90%. Long-term results, especially the kidneys, are still concerned because they often need a combination of chemotherapy, abdominal radiation and unilateral nephrectomy. [1]

According to a study by the National Wilms Tumor Study Group, the incidence of renal failure in children with unilateral tumors is low. They also found that children with WAGR syndrome or related urinary genital malformations have a higher risk of renal dysfunction. [2,3]

Another study in North America shows that the cumulative incidence of end stage renal disease was only 0.7% for 20 years after the diagnosis of the Wilms tumor. The characteristics related to the WT1 etiology (early onset, stromal predominant histology, intralobar nephrogenic rests) have significantly increased the risk of end stage renal disease. [4] In contrast, a study in the United Kingdom found that the overall incidence of kidney disorders was found in 32% of Wilms tumor survivors. This includes 19% with low glomerular filtration rate, 11% for hypertension, and 9% when urine albumin excretion increases. One of the 53 patients in the study had hemihypertrophy but otherwise there were no other congenital abnormalities.[5] According to a study in Poland, 22% and 9.4% of Wilms tumor survivors increased the urine albumin and b-2-microglobulin, respectively. Ultrasound signs of renal damage have been reported in 43%. Chronic kidney disease stage 1 and 2 were found in 56.25% and 43.75%, respectively.[6]

In recent study, notable number of long term Wilms tumor survivors presented with previously unidentified subclinical signs of renal function impairment and secondary morbidity. By serum and urine analyses concerning glomerular and tubular dysfunction, we identified patients at risk for developing the clinical manifestations of chronic kidney disease. The renal late effects and secondary morbidity require standardized follow-up care with analysis of estimated glomerular filtration rate and albuminuria. In addition, they recommend routine blood pressure monitoring to detect and treat arterial hypertension as a major cardiovascular risk factor by adding to the results of chronic kidney disease in long-term Wilms tumor survivors. For this reason, it is important to continue the regular

follow-up of the Wilms tumor survivors, especially after the transition to adulthood, more important in relation to the kidneys and cardiovascular aspects [8]. Shorter follow-up intervals should be considered for Wilms tumor survivors with pre-existing risk factors, such as decreased estimated glomerular filtration rate, albuminuria, arterial hypertension or history of irradiation.[9]

REFERENCES

1. Mullen EA, Weldon C, Kreidberg JA. Pediatric renal tumors. In: Avner ED, Harmon WE, Niaudet P, Yoshikawa N, eds. Pediatric Nephrology. 6th ed. Heidelberg, Berlin: Springer-Verlag; 2009:1431–1455.
2. Ritchey ML, Green DM, Thomas PRM, et al. Renal failure in Wilm's tumor patients: a report from the National Wilms Tumor Study Group. Med Pediatr Oncol. 1996;26:76–80.
3. Breslow NE, Grigoriev YA, Collins AJ, et al. End stage renal disease in patients with Wilms tumor: results from the National Wilms Tumor Study Group and the US Renal Data System. J Urol. 2005;174:1972–1975.
4. Lange J, Peterson SM, Takashima JR, et al. Risk factors for end stage renal disease in non-WT1-syndromic Wilms tumor. J Urol. 2011;186:378–386.
5. Levitt GA, Yeomans E, Mireaux CD, et al. Renal size and function after cure of Wilms' tumour. Br J Cancer. 1992; 66:877–882.
6. Stefanowicz J, Kosiak M, Romanowicz G, et al. Glomerular filtration rate and prevalence of chronic kidney disease in Wilms' tumour survivors. Pediatr Nephrol. 2011;26:759–766.
7. Sanpakit K, Triwatanawong J, Sumboonnanonda A. Long-term outcome in pediatric renal tumor survivors: experience of a single center. J Pediatr Hematol Oncol. 2013 Nov;35(8):610-3. doi: 10.1097/MPH.0b013e3182a06265. PMID: 24152588.
8. Wong KF, Reulen RC, Winter DL, Guha J, Fidler MM, Kelly J, Lancashire ER, Pritchard-Jones K, Jenkinson HC, Sugden E, Levitt G, Frobisher C, Hawkins MM. Risk of Adverse Health and Social Outcomes Up to 50 Years After Wilms Tumor: The British Childhood Cancer Survivor Study. J Clin Oncol. 2016 May 20;34(15):1772-9. doi: 10.1200/JCO.2015.64.4344. Epub 2016 Mar 28. PMID: 27022116.
9. Neu MA, Russo A, Wingerter A, Alt F, Theruvath J, El Malki K, Kron B, Dittrich M, Lotz J, Stein R, Beetz R, Faber J. Prospective analysis of long-term renal function in survivors of childhood Wilms tumor. Pediatr Nephrol. 2017 Oct;32(10):1915-1925. doi: 10.1007/s00467-017-3673-9. Epub 2017 Apr 28. PMID: 28451896.
10. Long-term Outcome in Children with Wilms' Tumor; Experience of a Single Center for Two Decades Int J Cancer Manag. 2021 January; 14(1):e102113.

Fertility Preservation Following Management of Pediatric GU Tumor

Seung-Hun Song

CHA University School of Medicine, Korea

The incidence of childhood cancer has steadily increased since the 1950s, however, with the advent of more effective multimodal therapies, childhood cancer survival rates have continued to improve over the past 40 years. Currently, the cure rate for childhood and adolescent patients with cancer has reached almost 80% and protecting future fertility and thereby promoting quality of life have become a major challenge in the care of these patients. Certain chemotherapies (particularly alkylating agents) and radiotherapy that include the gonads or hypothalamo-pituitary axis could negatively impact the future fertility of patients. Techniques for fertility preservation vary depending on the age of the child and range from surgical transposition of the gonads for pelvic radiotherapy to cryopreservation of the ovary or testicle in case of sterilizing chemotherapy. For pediatric boys undergoing chemotherapy, fertility-preserving techniques vary according to the child's age combined with ongoing spermatogenesis status. The immature testicle does not contain spermatozoa and spermatozoa can be found in ejaculated semen around the age of 13. Preservation of premature gonadal tissue might be considered when treatments with high potential risk of sterilization are proposed in children, even though maturation of immature germ cells is still at experimental stage. Evaluation of the gonadotoxic potential of therapeutic measures and the utilization of appropriate methods to preserve fertility could require the combined efforts of a multidisciplinary team that includes pediatric oncologists, radiotherapists, surgeons, reproductive physicians and biologists and psychologists. Here, we discuss fertility preservation options both in the prepubertal patient and adolescent patient.

Free Paper: Oncology

Nomogram for Predicting Malignant Testicular Tumors in Children Based on Age, Alpha-fetoprotein, and Ultrasonography

Wu Min[1], Huang Yichen[1], Zhang Yue[2], Hu Huiyong[3], Xie Hua[1], Lv Yiqing[1], Li Xiaoxi[1], Wang Hui[1], Chen Fang[1,4,5]

[1]Department of Urology, Shanghai Children's Hospital, School of medicine, Shanghai Jiao Tong University
[2]School of Life Sciences and Biotechnology, Shanghai Jiao Tong University,Shanghai, China,
[3]Department of Ultrasound, Shanghai Children's Hospital, Shanghai Jiaotong University, Shanghai, China,
[4]Department of Urology, Shanghai Jiao Tong University Affiliated Sixth People's Hospital, Shanghai, China,
[5]Shanghai Eastern Urological Reconstruction and Repair institute, Shanghai, China

Objective To explore the predictive factors and establish a predictive model for the malignant testicular tumors in children.

Methods We retrospectively analyzed data for 120 consecutive patients with unilateral testicular tumors treated at a single institution from June 2014 to July 2020. The patients were divided into the benign(n=90) and the malignant (n=30) tumor groups based on the pathological diagnosis. Age, serum markers(serum alpha-fetoprotein (AFP), human chorionic gonadotropin) and tumorultrasonic findings (maximum diameter, ultrasonic echo, blood flow signal) were recorded. Predictive factors were identified using descriptive statistical methods. A nomogram was established for preoperative prediction.

Results Patients with malignant tumors were younger (median age 14.5 vs. 34.0 months, P=0.017)and had higher incidence of the elevated AFP (90.0% vs. 2.2%, P<0.001). The ultrasonography indicated the malignant tumors tended to have larger maximum diameters (27.1±11.4 vs. 16.6±9.2 cm, P<0.001), moreproportion of the hypoechoic masses (46.7% vs. 8.9%, P<0.001), and the high blood flow signalmasses (93.4% vs. 5.6%, P<0.001). A nomogram based on age, AFP, and ultrasound blood flow signals effectively predicted the probability of malignant testicular tumors in children with an accuracy of 0.98 (95% confidence interval: 0.984–1.003).

Conclusion A nomogram based on the age, AFPand ultrasound blood flow signal can effectively predict the probability of the malignant testicular tumors in children.

Nomogram for predicting the malignant probability of testicular tumors in children

Free Paper: Oncology

Prenatally Diagnosed Intrascrotal Testicular Teratoma in an Infant

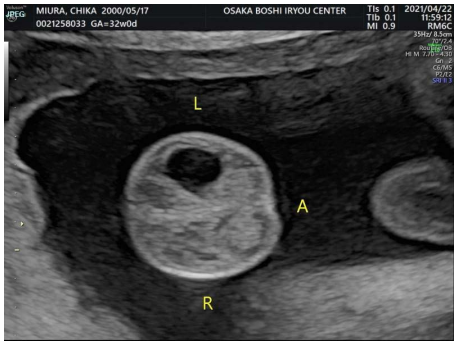
Fumi Matsumoto, Hiroki Yashita, Koichi Oshima, Futoshi Matsui, Koji Yazawa

Department of Urology, Osaka Women's and Children's Hospital, Japan

Introduction Although teratomas are the most common tumors in the testes of prepubertal children, prenatally detected testicular teratomas are extremely rare. We report the first case of prenatally diagnosed intrascrotal testicular teratoma in an infant who underwent testis sparing surgery.

Case A 20-year-old woman was referred to our maternal unit at 30 weeks of gestation for evaluation of a fetal intrascrotal cystic lesion. Ultrasonography revealed an 11×10 mm simple cystic mass and deviated testicular parenchyma of the left side and normal right testis in the scrotum (Figure). As the cystic lesion did not show further progression in size by 32 weeks of gestation, a postnatal intervention was recommended. An otherwise healthy boy with a birth weight of 2,898g was born via spontaneous vaginal delivery at 39 weeks of gestation. He returned to our hospital at the age of 2months. Both testes were palpable in the scrotum, and there was no obvious difference in size between the left and the right testes; however, the caudal half of the left testis was hard on palpation. The blood tests did not reveal any abnormal values. Unlike the findings during the fetal period, a solid mass occupying nearly half of the left testis with a heterogeneous component and some calcification was observed on ultrasonography. A Doppler scan showed no increase in blood flow to the mass. The patient underwent enucleation of the left testicular mass via an inguinal approach under general anesthesia at the age of 75 days. Histopathological examination of the mass confirmed the diagnosis of a mature teratoma. No immature components were identified. The postoperative course was uneventful. Four months after surgery, palpation and ultrasonography revealed no deformity or atrophy of the left testis without recurrence of the tumor.

Conclusions As most of testicular tumors in prepubertal children are benign, testis sparing surgery should be considered for prenatally detected cystic masses in the scrotum.



Laparoscopy and Robotics: Where Are We?

Sujit Chowdhary (India)

Robotic Surgery in Pediatric Lower Urinary Tract Disease	**Sang Hoon Song** (Korea)
Single Port Robotic Surgery	**Yong Seung Lee** (Korea)
Application to Complex Reconstruction	**Venkat Sripathi** (India)
Free Paper: Laparoscopy/Hypospadias	
First 100 3D Retroperitoneal Laparoscopy Pyeloplasties in Our Part of the World: A Single-centered Study	**Sharjeel Saulat** (Pakistan)
Complications Following Proximal Hypospadias Repair Using One-stage Transverse Preputial Island Tube Urethroplasty	**Xin Liu** (China)

Robotic Surgery in Pediatric Lower Urinary Tract Disease

Sang Hoon Song

Asan Medical Center, University of Ulsan College of Medicine, Korea

Laparoscopic procedures for urological disease in children have been proven to be safe and effective. However, the availability of laparoscopic procedures is still partly limited to experienced, high-volume centers because they are technically demanding. The da Vinci robot system is being used for an increasing variety of reconstructive procedures because of the advantages of this approach, such as motion scaling, greater optical magnification, stereoscopic vision, increased instrument tip dexterity, and tremor filtration. Particularly in the field of pediatric urologic surgery, where the operational field is limited due to the small abdominal cavity of children, robotic surgical technology has its own strengths. Currently, robots are used to perform most surgeries in children that can be performed laparoscopically. In this lecture, I aimed to provide a comprehensive overview of the current role of robotic surgery in pediatric lower urinary tract disease in pediatric urology.

The gold standard surgical treatment for distal ureteral reconstruction and reimplantation in children is open intravesical or extravesical surgery, which has shown high success rates (92%-98%) and low complication rates. In 2008, Casale et al. published their experience with 41 patients who underwent robotic extravesical reimplantation for bilateral vesicoureteral reflux. The authors reported success rates of 97.6% without complications. In 2012, a long-term analysis was reported by the same group with 150 patients who underwent bilateral extravesical robotic-assisted laparoscopic ureteral reimplantation. The operative success rate was 99.3% for vesicoureteral reflux resolution on voiding cystourethrography without any occurrence of de novo voiding dysfunction.

In 2008, Gundeti et al. published a successful outcome of the first case of a child who underwent complete intracorporeal robot-assisted laparoscopic augmentation ileocystoplasty and Mitrofanoff appendicovesicostomy. Later, this same group reported a case series of 11 patients. The mean patient age at surgery was 10.4 years (range, 5 to 14 years) and the mean operative time for the isolated appendicovesicostomy was 347 minutes. There were no intraoperative complications and stomal continence was achieved in 10 of the 11 children.

A growing body of evidence supports the view that robotic technology in pediatric urological surgery is technically feasible and safe. Robotic technology provides additional benefits for performing reconstructive urologic surgery, such as in ureteral reimplantation, and enterocystoplasty procedures. Robot-assisted ureteral reimplantation seems to be a good alternative in children. It is speculated that the use of the robotic technology for intravesical reimplantation allows the surgeon to obtain an angle of dissection that more closely mimics open surgery than standard laparoscopy. However, the robotic data is thus far scarce, so larger studies involving multiple institutions with longer follow-up of patients with voiding cystourethrogram are necessary. The main limitations to robotic surgery are its high purchase and maintenance costs, and the cost effectiveness of this technology remains to be validated.

Single Port Robotic Surgery in Pediatric Patients

Yong Seung Lee

Department of Urology, Yonsei University College of Medicine, Seoul, Korea

Robot assisted laparoscopic pyeloplasty (RALP) is widely used in pediatric patients along with other upper urinary tract surgery such as nephrectomy, hemi-nephrectomy and ureteroureterostomy. The usage of RALP has been increased in United States, but with the limitation of various issues in Korea. Laparoendoscopic sing-site (LESS) pyeloplasty is known to have excellent cosmetic outcomes in pediatric patients, but it also has technical disadvantages such as triangulation and motion restriction. In order to overcome disadvantages of LESS, da Vinci SP system was introduced. In our experience, RALP using da Vinci SP system showed similar console time and operative time compared with previous conventional RALP using da Vinci SI or XI system with much better cosmesis. Although the air-leakage problem that was initially observed has been resolved to some extent, the matter of limited working space could be a problem in young children.

Robotic Surgery in Children: Tips to apply in Complex Situations

Venkat Sripathi, Vidhya Tamilvananan

Department of Pediatric Urology, Apollo Children's Hospital, India

This paper discusses five scenarios and is aimed at detailing some 'hacks' we employed in complex clinical scenarios to get a good outcome.

Scenario 1: Technique of anastomosis in a Pelvi-Ureteric Junction (PUJ) Obstruction of the Lower Moiety of an Incomplete Duplex

In a five and a half year old child a PUJ obstruction of the lower moiety of an incomplete duplex was identified. The first step was cystoscopy and guide wire insertion into the upper moiety for easy identification during surgery.

The PUJ obstruction of the lower moiety was identified and the Y junction of the upper and lower moiety ureters clearly defined. The lower moiety PUJ was dismembered. The small stump of the lower moiety ureter was preserved and a wide spatulation was done on the inner curve of the lower moiety stump and extended onto the upper moiety ureter. This V opening was matched with the lower moiety pelvis and anastomosis completed.

Conclusion: Using the stump of the lower moiety ureter ensures good drainage from the lower moiety pelvis without kinking the ureter of the upper moiety.

Scenario 2: Technique of safe dissection of a renal artery aneurysm in a child with hypertension

An eight-year old female child presented to the neurology department with papilloedema and was found to have severe hypertension needing five drugs for control. During investigation, a defunct right kidney with renal artery stenosis and an aneurysm of the right renal artery was identified. Nephrectomy was planned but the aneurysm was densely adherent to the IVC and the aorta and a safe plane of dissection could not be established without risking 'catastrophic hemorrhage'. The only way the nephrectomy could be completed was by obtaining control of a 5 mm segment of the right renal artery just after its aortic 'take off'. To achieve this the the Inferior Vena Cava was mobilized in its entireity and lifted up to expose the aorta and the right renal artery origin. This video explains how this was accomplished.

Conclusion: Robotic Mobilisation of the IVC has given us the confidence to handle 'Aortocaval node dissection' in Wilms tumor.

Scenario 3: Technique of salvaging a short appendix to complete an appendico-vesicostomy

A thirteen year old male with Acute Myeloid Leukemia (post bone marrow transplant) and dural deposits presented with overflow incontinence due to a poorly contractile detrusor. As he was averse to penile catheter drainage, a robotic appendix mitrofanoff procedure was advised.

An appendix of 7 cms length was freed on its blood supply. The anterior wall of the bladder was freed and dropped down. During anastomosis to the bladder the distal half of the appendicular lumen was found to be severely stenosed and 3 cms had to be discarded. To enable the 4 cms of remaining appendix to reach the abdominal wall the superior vesical pedicle on the left side of the bladder was divided. This enabled us to shift the dome of the bladder to the right. The appendix was anastomosed to the bladder, wrapped with a flap of peritoneum and anchored to the abdominal wall to prevent retraction. At followup three and a half years later the child is using an 8 French Feeding and is catheterizing the channel with ease.

Conclusion: The technique of superior vesical artery ligation is used during a 'Boari Flap' procedure to enable the bladder to be shifted to one side. The same technique was used to utilise a short stump of an appendix and to create a Mitrofanoff channel. The channel did not leak as the detrusor was acontractile.

Scenario 4: Technique of imbrication of prostatic utricle

In 3 children aged 1 year, 3.5 years and 11 years, large prostatic utricles causing recurrent urinary infections and multiple episodes of epididymo-orchitis were tackled using a robotic approach. In all three children the utricles were large and both vasae were opening at the apex of the utricle. Complete excision was not possible as the vasae would lose their urethral connection. The bladder base was hitched up with multiple 'sling sutures 'and the anterior wall of the utricle was opened and a generous wedge excised. The exposed posterior wall was then imbricated with a series of 5/0 PDS sutures. This 'imbrication' served to narrow the utricle while still allowing vasal continuity.

In all three cases the children did not have any further urinary infections and did not suffer any further episodes of epididymo-orchitis. Our follow-up has ranged from 6 years to nine months.

This technique was taught to us by Dr Mohan Gundeti from Comer Children's Hospital, Chicago.

Conclusion: Robotic imbrication of large prostatic utricles serves to obliterate the 'dead space' while maintaining the vasal ampullae.

Scenario 5: Technique of partial nephrectomy in an angiomyolipoma of the kidney

A fourteen year old with bilateral renal tumors was taken up for partial nephrectomy on one side. The findings of multiple corkscrew vessels on the reconstructed CT images raised the doubt of angiomyolipoma but we still had to obtain a tissue biopsy in order to rule out renal cell carcinoma. The tumor at the upper pole of the left kidney was chosen as it had three renal arteries and we felt we could obtain control of the main vessel supplying the lesion.

We exposed the renal arteries and then used the 'drop down' ultrasound probe to map the lesion. After marking the extent of excision the renal arteries were clamped but the veins were left open. This maneuver gave us sufficient

time to complete the partial nephrectomy and the renorraphy without the danger of ischemia.

No attempt was made to identify the individual bleeders as the rate of bleeding was furious. Instead a three layer closure was done – first the pelvis and calyces followed by the inner cortex and then the outer cortex. All this was done with barbed sutures and compression obtained by 'sliding and cinching with clips'. The outer cortex was closed with PDS and the capsule was then approximated securely.

Conclusion: Pre-operative nephrometry scoring is essentially to understand the position and extent of renal tumors before partial nephrectomy. Clamping the renal artery but leaving the vein open allows a 'leisurely approach' to tumor excision without the risk of severe renal ischemia. A sequential 'inside out' mass closure technique prevents urine leaks and also allows adequate compression of renal parenchyma. Attempts to identify individual bleeders and obtain control esp in a benign tumor like angiomyolipoma would have resulted in catastrophic blood loss.

Scenario 6: In-situ tapering of Megaureters

A five and a half year old male child was taken up for robotic correction of an 'Obstructed Megaureter.' On the table the ureter was hugely dilated till just below the pelvic brim with a long narrow segment. The ureter was detached and narrow segment excised. The dilated ureter was trimmed by excision of a generous strip of ureter and ureter reconstituted by suture - continuous in the upper two-thirds and interrupted in the lower third. The narrowed ureter was refixed to the bladder mucosa, stented and extravesical reimplant done.

Conclusion: Ureteral tapering is mandatory in very large ureters to achieve good tunnel length to ureteral diameter ratio. Robotic ureteral tapering can be done in an in-situ manner exactly as in an open technique. Exteriorizing the ureter through a port site and carrying out tapering runs the risk of ureteral ischemia due to traction.

Free Paper: Laparoscopy/Hypospadias

First 100 3D Retroperitoneal Laparoscopy Pyeloplasties in Our Part of the World: A Single-Centered Study

Sharjeel Saulat, Jahanzeb Sheikh, Syed Saeed Uddin Qadri, Mansoor Ejaz, Awais Ayub, Hamza Ashraf, Anil Kumar Utraadi

Department of Urology, Tabba Kidney institute, Pakistan

Introduction Laparoscopic pyeloplasty, quoted to have a success rate equivalent to open pyeloplasty for ureteropelvic junction obstruction (UPJO), can be performed transperitoneally and retroperitoneally. The aim of the present study is to report our experience with retroperitoneal approach of laparoscopic pyeloplasty and to further improve our understanding of the merits and demerits of this route.

Methods Total 104 pediatric UPJO-cases were registered in our institute during 2017 – 2021, 87 (83.6%) patients had UPJO due to narrow stenosed segment / kinked segment while 17 (16.3%) had secondary to crossing vessels, 01 retrocaval ureter). Dismembered pyeloplasties were done in all patients. The data was collected pre-operatively to assess demographics, family history, risk factors, radiological investigations used to interpret the degree of obstruction within UPJ area. Intra-operative details such as operative time, complications were reported, post-operative renal scan was performed to evaluate the difference in hydronephrosis, hyderoureter and degree of obstruction. Data was entered and analyzed in statistical package of social sciences 22, The descriptive statistical tests was performed for Independent variables including the subject's age, Body mass index (BMI) and site of UPJO. Graphs will be made on SPSS version 20 and Microsoft excel. The measure of association was analyzed with the help of Paired sample T-Test, Compare means test, and for the validity of data chi-square test was performed. P-Value of < 0.05 was considered as significant.

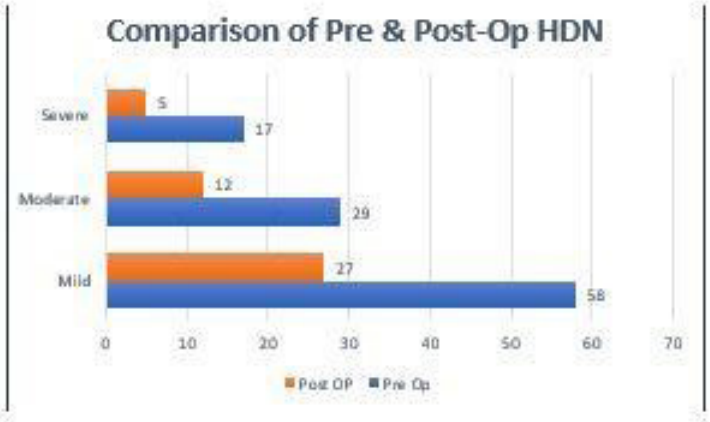
Results Mean age of participants was 8.4 ± 6.3 years with minimum age of 2 years and maximum 15 years, gender distribution specified female ascendancy with 63 (%) females and 41 (%) male subjects. BMI was categorized with the help of Asian BMI scale and 72 (%) were categorized as Normal, 23 (%) as overweight and 12 (%) as obese. Pre-operative renal Scan showed mean split renal function value as 40.0 ± 10.6 with mean T half max value of 14.0 ± 11.7 mins. 5(%) subjects had co-existing renal calculi, complete degree of obstruction was identified in 83(%) patients. Mean operating time reported as 144.2 ± 42.6 mins, there was significant improvement of hyderonephrosis reported post-operatively with p value of 0.03. Hospital stay was 2-4 days the success rate was 96.7%. Complication rate was 4.2% according to Clavien classification. No reoperations or secondary interventions were necessary in almost all cases of the study.

Conclusions Anderson-Hyne's dismembered Laparoscopic retroperitoneal pyeloplasty yields an efficacy similar to

that of open surgery, especially in case of crossing vessels apart from the presence of a redundant pelvis or anteriorly crossing vessel. Laparoscopic management of pelvic ureteric junction obstruction is the new gold standard. The retroperitoneal approach may be troublesome for the laparoscopic urologist but is very safe and comfortable for the patient.

Demographic & Operative Details		
Variables		Values (%)
Gender	Male	41 (39.4%)
	Female	63 (60.5%)
BMI	Normal	73 (70.1%)
	Overweight	23 (22.1%)
	Obese	12 (11.5%)
Age		8.4 ± 3.6 years
Split renal function		40.0 ± 10.6
T Half max		14.0 ± 11.7 mins
Blood loss		63.7 ± 32.8 ml
Total Operative time		144.2 ± 42.6 mins
Co-existing renal calculi	Yes	5 (4.8%)
	No	99 (95.1%)
UPJ obstruction	Intrinsic	87 (83.6%)
	extrinsic	17 (16.3%)
Peritoneal breach	Yes	5 (438%)
	No	99 (95.1%)
Drain Placement	Yes	8 (736%)
	No	96 (92.3%)

Post OP NPO Duration		7 ± 4.9 hours
Hospital stay		1.9 ± 0.2 days
Clavien Dindo classification	G 0	39 (37.5%)
	G 1	65 (62.5%)
Foley catheter removed	2nd day	63 (60.5%)
	4th day	27 (25.9%)
	5th day	14 (13.4%)



Free Paper: Laparoscopy/Hypospadias

Complications Following Proximal Hypospadias Repair Using One-stage Transverse Preputial Island Tube Urethroplasty

Xin Liu

Department of Pediatric Urology, ShengJing Hospital of China Medical University, ShenYang, China

Objective To evaluate the outcomes of proximal hypospadias using one-stage transverse preputial island tube urethroplasty, summarize and analyze the related factors of complications of primary repairment of proximal hypospadias in children.

Methods The clinical data of complications after hypospadias operation in our department were retrospectively analyzed from December 2012 to Janurary 2022. The clinical characteristics of the proximal hypospadias were summarized. The age, hypospadias grade, surgical methods, diameter of glans, length of neourethra, secondary coverage and pre-operative testosterone were discussed as potential factors with complications after operation were analyzed by logistic regression analysis. $P < 0.05$ was used as a statistical criterion.

Results A total of 290 patients were included, Complications after operation were encountered in 102 (35.17%) children, including fistulas in 55 (18.96%), urethral strictures in 33 (11.38%), and urethral diverticulum in 14 (4.83%). Statistical analysis showed that the ventral curvature after degloving and transecting the urethral plate, the length of neourethra, and tunica vaginalis flap over the neourethra were related with complications after surgery ($P<0.05$).

Conclusion Even performed by highly experienced physicians, the proximal hypospadias remains challenging. The transverse preputial island tube urethroplasty still has a high incidence of complications. Urethrocutaneous fistulas were the most commonly complications after one-stage surgical techniques. The ventral curvature after degloving and transecting the urethral plate and tunica vaginalis flap over the neourethra are related factors affecting complications after proximal hypospadias repairments in children.

The 22nd Congress of
Asia-Pacific Association of Pediatric Urologists
(APAPU 2022)

2022

Testis and DSD

Te-Lu Yap (Singapore)

Suggested Age Limits in Orchiopexy _Are They Evidence Based?	**Subhasis Roy Choudhury**(India)
Experiences in DSD	**Fumi Matsumoto** (Japan)
Feminizing Genitoplasty: Shall We Preserve the Corporeal Bodies	**Phitsanu Mahawong** (Thailand)

Suggested Age Limit for Orchidopexy: Are They Evidence Based

Subhasis Roy Choudhury

Lady Hardinge Medical College & Kalawati Saran Children's Hospital, New Delhi, IIndia

Incomplete descent of one or both testicles is the most common birth anomaly in boys, affecting 2-8%.By 12 months incidence decreases to 1%. Undescended testis (UDT) is associated with impaired fertility and risk for testicular cancer. There is histological evidence of early germ cell deterioration in UDT.

The best mode of treatment and its timing is controversial. Small difference in temperature (2-3° C) between the abdomen and scrotum is detrimental to normal spermatogenesis. In unilateral UDT, the descended testis might compensate for the poor sperm production in the retained testis. Studies of adult men with unilateral UDT shows lower sperm count even if conventional orchiopexy done during childhood. Although the fertility rate in near normal in patients with treated unilateral UDT, the fertility is far below normal in those patients with bilateral UDT. In USA, surgery is preferred method while in many parts of Europe, hormonal therapy is preferred. Individual reports give variable success rates from 8 to 60% after hormonal therapy. Three meta-analysis agree on efficacy of ~20% which on follow-up decreased to 15% due to secondary re-ascent of the testis while 95% anatomical efficacy with primary orchiopexy. After hCG, insterstitial oedema and extravasation of leukocytes seen, which disappear later on. There is increased apoptosis of germ cell in hCG treated testis and while follow-up, there is 50% decrease in testicular size (Martin Ritzen E 2008). Most of the retained testis descends during the 3 months. A recent RCT shows orchiopexy at 9 months of age can catch-up partial growth which was not seen after late surgery. Consensus group recommend surgery between 6 and 12 months of age or soon after diagnosis. After diagnosis, patient should be referred to pediatric surgeon/urologist no later than at 6 month of age. If testis not descended by 6 months of age, should be scheduled for orchiopexy before 1 year of age. Collin C et al compared orchidopexy done at 9 months vs. 3 years and found Orchiopexy at 9 months resulted in an increase in median testicular volume from 0.35ml at 6 months to 0.42ml at 2 yrs, 0.49 at 3 yrs and 0.50ml at 4 yrs. In the same period, there was no significant growth of the retained testes before or after surgery in the group where orchiopexy done at 3 yrs of age. At 2, 3 and 4 yrs of age, there were significant differences in median volume between testes that were surgically treated at 9 months compared to the group with treatment at age 3 yrs. Volume of the initially retained testis in each group still had not reached the size of its scrotal counterpart at age 2, 3 or 4 yrs. In patients operated at 9 months, there was an increase in the median ratio from 0.68 at 6 months to 0.81 at 4 yrs. In contrast, a decrease in median ratio noted in late treatment group from 0.68 at 6 months to 0.56 at 4 yrs. UDT should be treated in early childhood to achieve normal spermatogenesis and normal fertility. In the histopathological studies, no. of spermatogonia per tubular cross-section was decreased from 2 yrs age. In normal boys, testicular volume almost doubles during first 3 months of life with little or no further increase between 3 and 18 months. Early surgical treatment at 9 months resulted in partial catch-up of testicular growth.

Testicular volume is an approximate measure of spermatogenetic activity, this gives hope that early orchiopexy may improve future spermatogenesis.

The relative risk of TC in the UDT population is 2.75–8 × higher than in males without UDT. There is a slightly reduced risk of malignancy in operated descended testis. The risk of TC among men that received orchiopexy is 1.8 × the expected lifetime risk for the general population, i.e., roughly 1 in 135 compared to 1 in 250 lifetime risk of TC i.e. 0.4%. Cancer risk in patients with orchidopey done before and after 13 years is 0.33% vs. 0.73% (Patterson A, 2007). Relative risk of testicular cancer among those who underwent orchiopexy before reaching 13 years of age was 2.23, for those treated at 13 years of age or older, the relative risk was 5.40. While there is evidence supporting early orchiopexy in the prevention of TC and restoration of fertility, the true impact that this early intervention has specifically on TC outcomes is low (Higgins et al 2019).

Conclusion

Presently consensus says that the diagnosis should not be finally established before 6 months of age since there are chances of descent beyond 3 months up to 6 months. Surgery at 9 months of age is followed by a better post-operative growth of the testes. There is minimal risk of testicular cancer in patients with UDT but cannot be neglected, which increases with age. Orchiopexy should be performed between 6 and 18 months of age, or soon after diagnosis. Referral should be to pediatric rather than general surgeons/urologists if the boy is less than 1 year old.

References

1. Ritzén EM. Undescended testes: a consensus on management. Eur J Endocrinol. 2008 Dec 1;159(Suppl 1):S87-90
2. Claude Kollin, B Karpe, U Hesser, T Granholm, EM Ritzén. Surgical treatment of unilaterally undescended testes: Testicular growth after randomization to orchiopexy at age 9 months or 3 years. THE JOURNAL OF UROLOGY®Vol. 178, 1589-1593, October 2007
3. Andreas Pettersson, Lorenzo Richiardi, Agneta Nordenskjold, Magnus Kaijser, Olof Akre, Age at surgery for undescended testis and risk of testicular cancer. N Engl J Med 2007;356:1835-41
4. Margaret Higgins, Derek E. Smith, Dexiang Gao, Duncan Wilcox, Nicholas G. Cost, Amanda F. Saltzman. World Journal of Urology https://doi.org/10.1007/s00345-019-03034-9
5. Kolon TF, Herndon CA, Baker LA, Baskin LS, Baxter CG, Cheng EY, Diaz M, Lee PA, Seashore CJ, Tasian GE, Barthold JS. Evaluation and treatment of cryptorchidism: AUA guideline. The Journal of urology. 2014 Aug;192(2):337-45

Feminizing Genitoplasty: Shall We Preserve the Corporeal Bodies

Phitsanu Mahawong

Division of Urology, Department of Surgery, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand

Congenital adrenal hyperplasia (CAH) is the most common cause of 46, XX DSD (masculinized female). The ambiguous genitalia newborns who presented with bilateral non-palpable undescended testis, Mullerian structures, elevated 17-OH progesterone, and karyotype of XX will be diagnosed as CAH. The gender assignment is usually appropriately female. In significantly virilized females, it is appropriate to perform feminizing genitoplasty (FG) at 6-12 months of age. Classically, FG consists of clitoroplasty, vaginoplasty, and labioplasty. Nowadays, nerve-preserving reduction clitoroplasty is popular and inverted U-shape flap vaginoplasty is widely performed. Labioplasty is basically constructed by using the redundant clitoral skin with Byar's flap technique. Corporeal sparing dismembered clitoroplasty was first introduced by Pippi Salle JL and colleagues in 2007 and they proposed that this technique should be incorporated into the armamentarium of surgeons and presented as an option for FG. Complete corporeal preservation clitoroplasy was recently introduced by Fernandez N and colleagues in 2021. They concluded that there is no need for the disassembling of the corporeal bodies, neurovascular bundle and glans. However, these two techniques are still lacking of long-term follow up and are debated by others. The bright side of corporeal bodies preservation FG is that there is no feeling of surgical castration and the feasibility for phallic reconstruction in the future. The possible drawbacks of corporeal bodies preservation FG are painful engorgement of the labia and decreased genital sensitivity.

Free Paper: Testis and DSD

Te-Lu Yap (Singapore)

The Value of Diagnostic Laparoscopy for Impalpable Testis in Children	**Jae Suk Park** (Korea)
Metachronous Contralateral Occurrence of Hydrocele after Unilateral Hydrocelectomy in Children Younger than 8 Years	**Jae Min Chung** (Korea)
Clinical Characteristics of Gonadal Dysplasia Caused by WT1 Gene Mutation	**Yu Mao** (China)
Symptomatic Prostatic Utricle Cysts in Children Without External Genitalia Anomalies: A Single Institution's Experience	**Kok On Ho** (Singapore)
Hydrocele of the Canal of Nuck in Female Pediatric Patients: A Report of Nine Cases	**Takeshi Shono** (Japan)
Correlation between Mean Platelet Volume and Testicular Viability in Children with Testicular Torsion	**Meng He** (China)

Free Paper: Testis and DSD

The Value of Diagnostic Laparoscopy for Impalpable Testis in Children

Jae Suk Park, Kwanjin Park, Youngjae Im

Department of Urology, Seoul National University College of Medicine, Seoul, Korea

Background Academically, the gold standard approach for impalpable testis is known as diagnostic laparoscopy. However, as the accuracy of ultrasound is gradually improved and studies on predictive factors for the presence or absence of testes such as contralateral testicular hypertrophy, diagnostic laparoscopy are increasingly being skipped. Therefore, the authors would like to re-examine the value of diagnostic laparoscopy in impalpable testis.

Methods A total of 68 boys who underwent diagnostic laparoscopy with impalpable testis from November 2015 to June 2022 were retrospectively analyzed. All patients were treated and operated by a single pediatric urologist. Through a physical examination before surgery, it was confirmed whether the nubbin in the scrotum was palpable and whether the contralateral testis was enlarged. In some patients, preoperative ultrasonography was performed to confirm the presence of normal testes or nubbin. Diagnostic laparoscopy was performed under general anesthesia and a 3mm telescope was inserted into the umbilicus. If normal testes in the abdominal cavity were found, laparoscopic orchiopexy was performed. If no testes in the abdominal cavity were observed, scrotal pulling test was performed to decide scrotal or inguinal exploration. If blind end of spermatic vessels and vas deferens were observed in diagnostic laparoscopy, no additional procedure was performed.

Results The mean age at the time of diagnostic laparoscopy was 14.4 (5.3-83.9) months, and the left testicle was impalpable in 50 patients. As a result of diagnostic laparoscopy, normal abdominal testes were found in 6 (8.8%) patients, and laparoscopy orchiopexy was performed. In one of 6 patients, scrotal nubbin was palpable on physical examination, and contralateral testicular hypertrophy was observed in 3 patients. In 2 patients, it was reported that nubbin was observed in the scrotum and inguinal area on preoperative ultrasound. Among the 62 patients who did not have a normal testis in the abdominal cavity on diagnostic laparoscopy, 13 patients (21.0%) did not have nubbin in the scrotum and contralateral testicular hypertrophy on physical examination. A total of 11 patients underwent an inguinal approach through a scrotal pulling test when there was no intra-abdominal testis in diagnostic laparoscopy. Inguinal nubbin was found and removed in all 11 patients. Among 11 patients, scrotal nubbin was palpable on preoperative examination in 4 (36.4%) and inguinal nubbin was not confirmed on ultrasound in 2 patients. Blind end of spermatic vessels and vas deferens were observed near the internal inguinal ring in 4 patients, and scrotal nubbin was palpable on preoperative physical examination in 2 patients.

Conclusion Predicting the presence of normal testes in the abdominal cavity based on the presence of scrotal nubbin and contralateral testicular enlargement on a physical examination is quite inaccurate. Even ultrasound findings may miss the normal testis in the abdominal cavity. When comparing the morbidity of general anesthesia and diagnostic laparoscopy with the risk of missing a normal testis in the abdominal cavity, the authors believe that diagnostic laparoscopy is still essential for impalpable testis.

Free Paper: Testis and DSD

Metachronous Contralateral Occurrence of Hydrocele after Unilateral Hydrocelectomy in Children Younger than 8 Years

Jae Yeon Kim, Jae Min Chung, Sang Don Lee

Department of Urology, Pusan National University College of Medicine, Busan, Korea

Background Hydrocele on the contralateral side after surgical repair is an uncommon condition compared to surgical site recurrence. Although there has been much research on metachronous contralateral inguinal hernia in children, metachronous contralateral hydrocele, which share a common pathology with inguinal hernias, has not yet been investigated. We have investigated the incidence and risk factors for metachronous contralateral occurrence of communicating and noncommunicating hydroceles in children younger than 8 years.

Methods From January 2017 to June 2020, 302 children younger than 8 who were diagnosed with unilateral hydroceles were treated in our hospital without surgical exploration of contralateral hydrocele. The disease was classified into communicating and noncommunicating hydroceles. We divided patients into two groups according to the presence of metachronous contralateral hydrocele and analyzed the differences between the two groups.

Results Among 302 patients, the mean age was 36.4±20.9 months. Metachronous contralateral hydrocele occurred in 15 (4.9%) patients as communicating hydroceles. Comparison between the two groups showed statistically significant differences in type of hydrocele ($P = 0.047$) at first diagnosis.

Conclusion Clinically evident risk of metachronous contralateral hydrocele after unilateral hydrocelectomy was 4.9%. Despite the relatively low incidence rate, the risk of metachronous contralateral occurrence should always be consulted with parents before surgical treatment of hydroceles.

Free Paper: Testis and DSD

Clinical Characteristics of Gonadal Dysplasia Caused by WT1 Gene Mutation

Yu Mao, Yunman Tang, Daorui Qin, Xuejun Wang

Department of Pediatric Surgery of Children's Medical Center, Sichuan Academy of Medical Sciences & Sichuan Provincial People's Hospital & Affiliated Hospital of the University of Electronic Science and Technology of China, Chengdu, People's Republic of China.

Objective To analyze the clinical characteristics of gonadal dysplasia caused by WT1 gene mutation.

Methods The clinical data of patients with gonadal dysplasia due to WT1 gene mutation diagnosed and treated in our hospital were retrospectively analyzed and summarized, including the patient's age, final diagnosis, WT1 gene mutation site, characteristics of accumulated organ lesions and survival status.

Results A total of 8 patients were diagnosed at the age of 10 months to 28 months, with an average of 14.3 months. Among the 8 patients, there were 3 cases of Frasier syndrome, 1 case of Denys Rash syndrome, 2 cases of WAGR syndrome and 1 case of non syndrome form. The 8 mutation sites were c.1399C>T (p.R467W), c.1333C>T (chr11:32413513), del (11) (28576025-38391615), c.1180C>T, c.1186G>A, del (11) (26500001-40000000), c.1432+5G>A, c 1384C>T. Glomerulopathy was found in 4 cases, nephroblastoma in 4 cases, gonadal dysplasia in 8 cases, gonadal tumor in 1 case, and congenital aniridia in 2 cases. Four patients died before the age of 5, and one died before the age of 8.

Conclusion WT1 gene induced gonadal dysplasia is a very rare disease, often associated with kidney, eye and other diseases, which should be screened. The treatment effect of this disease is poor and the mortality is high, so early diagnosis and treatment should be carried out.

Free Paper: Testis and DSD

Symptomatic Prostatic Utricle Cysts in Children Without External Genitalia Anomalies: A Single Institution's Experience

Kok On Ho, Siam Wee Sim, Fay Xiangzhen Li, Te-Lu Yap

Department of Paediatric Surgery, KK Women's and Children's Hospital, Singapore

Background Prostatic utricle cyst (PUC) is a rare congenital lesion which is typically associated with external genitalia anomalies such as hypospadias and intersex disorders. Even less commonly, PUC can also occur in children without external genitalia anomalies. We report a single institution's experience with symptomatic PUC in children without external genitalia anomalies.

Methods This is a retrospective study involving children who had genitourinary tract symptoms and found to have a PUC without external genitalia anomalies at our institution between 2000 and 2022. Demographics, clinical manifestations, diagnostic methods, treatment approach and follow-up were analysed.

Results A total of five children were diagnosed with symptomatic PUC with a median age of 2 years (range 1 day – 16 years). The most common presentations were urinary tract infection (UTI) (n=3) and epididymitis/epididymo-orchitis (EO) (n=4). One patient was antenatally diagnosed with left renal agenesis and a cyst posterior and inferior to the bladder, who subsequently presented with massive ascites on day one of life. Post-natal ultrasound confirmed the presence of a 2.9 cm PUC. While waiting for surgical management, he presented with one episode of febrile UTI and one episode of epididymitis and was placed on uroprophylaxis. The mean episodes of genitourinary tract infections (UTI and/or epididymitis) prior to treatment was 3.4 (range 1-8 episodes). Ultrasonography was diagnostic in three cases while two had normal ultrasound but were subsequently diagnosed with PUC on cystoscopy. There was one case of incidental finding on cystoscopy during repair of anorectal malformation, but he had also presented with an episode of EO prior to diagnosis. Two symptomatic PUC were surgically excised (laparoscopic n=1; open n=1) while one patient with Trisomy 21 and recurrent EO underwent bilateral vasectomy as part of treatment. Two patients were treated conservatively. The mean size of utricle cyst in the surgical treatment group (n=3) was 2.2 cm while the size of cyst in the conservative group (n=2) was 2.0 cm. The mean episodes of genitourinary tract infections in the surgical treatment group were 2.3 (range 2-3 episodes) while the conservative group was 4.5 (range 1-8 episodes). However, the number of episodes of infection was skewed as the diagnosis of symptomatic prostatic utricle was only made after years of normal ultrasonography and one prior normal cystoscopy. This patient has neurogenic bladder secondary to spina bifida and multiple bladder diverticulum which could have masked the presence of a PUC. At the time of diagnosis, he had a hostile bladder and decision was for conservative management. He had since undergone bladder

augmentation and had been asymptomatic. Recurrence of PUC was noted in both surgically treated cases (n=2), but as both patients were asymptomatic, they were placed on surveillance imaging and uroprophylaxis without any further attempt at cyst excision. All children were place on uroprophylaxis prior to surgical treatment. Uroprophylaxis was continued in children who were conservatively managed and in those who had recurrent episodes of infection. Uroprophylaxis was found to be effective in preventing infections in both groups.

Conclusion Although commonly associated with external genitalia anomalies, we reported our institution's experience with symptomatic PUC without such anomalies. Recurrent genitourinary tract infections should raise the suspicion for underlying PUC even in the face of a normal ultrasonography or cystoscopy. In such cases, alternative imaging such as MRI/MCU may be considered. While not statistically supported, the size of cyst or episodes of infections did not seem to influence the decision between conservative or surgical excision. The underlying risk factor should be dealt with to minimise the risk of recurrent infection, and conservative management is a possible treatment option. Uroprophylaxis may play a role in preventing symptomatic PUC.

Free Paper: Testis and DSD

Hydrocele of the Canal of Nuck in Female Pediatric Patients: A Report of Nine Cases

Takeshi Shono, Yoshiko Hashimoto, Naoyuki Taniguchi, Kumiko Shono

Department of Pediatric Surgery and Pediatric Urology, NHO, Kokura Medical Center, Kitakyushu, Japan

Background Hydrocele of the canal of Nuck (HCN) is a rare condition in female patients that is equivalent to cord or scrotal hydrocele in males. Although, the etiology of HCN is unknown, high ligation of the canal of Nuck with complete hydrocelectomy has been recommended as a standard therapeutic procedure. This study aim to clarify the effect of laparoscopic percutaneous extraperitoneal closure (LPEC) of the internal inguinal ring in treating pediatric HCN and discuss the etiology of HCN in female pediatric patients.

Method Data were collected from the charts of patients with HCN treated in our hospital from 2014 to 2021. The patients' age, symptoms, ultrasound imaging, treatment, and outcome were evaluated. LPEC was performed with a "LapaherclosureTM" needle that was manipulated under laparoscopic guidance to perform high ligation of the canal of Nuck at the internal inguinal ring.

Results The study included 9 patients (mean age, 4.9 years old). All patients presented with unilateral inguinal bulge, which was reducible in four patients and irreducible in five. The mean duration of symptom was 3.9 (range, 0.5 to 12) months before visiting a medical institution. HCN was confirmed by ultrasonography, which revealed a hypoechoic inguinal cyst in seven patients and an hourglass-cyst in two patients. Seven patients were treated with laparoscopic surgery, while spontaneous resolution of HCN was obtained by observation in two infants. The patency of the canal of Nuck was revealed by laparoscopy in all operated patients, and surgery was accomplished by high ligation of the canal of Nuck at the internal inguinal ring by LPEC without hydrocelectomy. No patients had intraoperative or postoperative complications, and no recurrence of HCN was observed in any patients (mean follow-up period, 41.8 months).

Conclusions Pediatric HCN could be treated with high ligation of the canal of Nuck at the internal inguinal ring without hydrocelectomy. Watchful waiting may be an option for infant patients, as the canal of Nuck spontaneously obliterates within the first year of life. LPEC is a safe and minimally invasive procedure for treating pediatric HCN. Encysted hydrocele of the canal of Nuck may have a conduit with the abdominal cavity in pediatric patients.

Table. Patient characteristics and treatment

Case	Age	Side	Sympom	Reducibility	Duration of symptom	Images of hydrocele	Management	Patency of the canal of Nuck	Follow-up	
									Period (M)	Recurrence
1	5.3 Y	L	Ing. bulge	Reducible	2 M	Ing.mono-cyst	LPEC	positive	77	none
2	6.3 Y	L	Ing. bulge	Reducible	3 M	Ing.mono-cyst	LPEC	positive	72	none
3	6.2 Y	L	Ing. bulge	Irreducible	4 M	Ing.mono-cyst	LPEC	positive	60	none
4	9.9 Y	R	Ing. bulge	Reducible	12 M	Ing.mono-cyst	LPEC	positive	54	none
5	4.2 Y	R	Ing. bulge	Irreducible	6 M	Ing.mono-cyst	LPEC	positive	42	none
6	4.3 Y	R	Ing. bulge	Reducible	3 M	hourglass-cyst	LPEC	positive	31	none
7	2.1 M	L	Ing. bulge	Irreducible	2 W	Ing.mono-cyst	observation	-	16	none
8	5.6 M	R	Ing. bulge	Irreducible	2 M	hourglass-cyst	observation	-	15	none
9	6.9 Y	R	Ing. bulge	Irreducible	3 M	Ing.mono-cyst	LPEC	positive	8	none

Y: years, M; months, L: left, R: right, Ing.: inguinal, W: weeks

Free Paper: Testis and DSD

Correlation Between Mean Platelet Volume and Testicular Viability in Children with Testicular Torsion

Meng He, Weiping Zhang, Hongcheng Song, Mujie Li

Department of Urology, Beijing Children's Hospital, Capital Medical University

Background The purpose of this study was to evaluate the predictive value of mean platelet volume (MPV) for testicular survival in torsion.

Methods Children with testicular torsion (TT) treated in Beijing Children's Hospital from January 2006 to January 2020 were enrolled in this study. Patient data collected in this study included age, symptom duration, preoperative preparation time, cryptorchidism testicular torsion or not, spermatic cord torsion degree, orchiectomy/orchiopexy, testicular volume 6 months after operation by ultrasound in orchiopexy patients and haematologic parameters.

Results The orchiopexy group comprised of 83 patients with a mean age of 147.5(130.5~168.0) months, and th e orchiectomy group included 90 patients with a mean age of 143.0(53.0~157.0) months. The multivariate analysis showed that symptom duration (Odds Ratio = 1.033, $p < 0.001$), spermatic cord torsion degree (Odds Ratio = 1.004, $p < 0.001$) and mean platelet volume (MPV; Odds Ratio = 1.662, $p = 0.044$) were significant predictors of orchiectomy. For patients with symptom duration of 6-51 h, the ROC curve of symptom duration, spermatic cord torsion degree and MPV were analyzed, the area under the curve of the above indexes were 0.753, 0.755, 0.629 respectively. In the comparison between the postoperative testicular atrophy group and the non-atrophy group, only MPV showed significant difference (t=2.426,P=0.022).

Conclusions This study found that symptom duration, spermatic cord torsion degree and MPV could be indicators of testicular viability in testicular torsion. MPV can provide valuable information before operation which can guide doctors and family members of the patients to select the appropriate treatment.

The 22nd Congress of
Asia-Pacific Association of Pediatric Urologists
(APAPU 2022)

2022

APAPU 2022

The 22nd Congress of
Asia-Pacific Association of Pediatric Urologists

DAY 2

October 21 (Fri), 2022

The 22nd Congress of
Asia-Pacific Association of Pediatric Urologists
(APAPU 2022)

2022

Hypospadias

Fang Chen (China)

How Can We Troubleshoot the Skin Problem during and after Surgery?	**Byungjun Kim** (Korea)
Controversies on Hormonal Treatment for Hypospadias	**Luis Braga** (Canada)
Debate	
Proximal Hypospadias: Should 1stage Procedure Be Discarded?	**Sang Woon Kim**(Korea) **Yichen Huang** (China)
Free Paper: Hypospadias	
Phenotypic Modulation of Vascular Smooth Muscle Cells in the Corpus Spongiosum Surrounding the Urethral Plate in Hypospadias	**Yu Huan** (China)
Urethral Duplication with Multiple System Anomalies Our Method for the Management of Urethral Duplication type IIA-1	**Zafar Abdullaev** (Uzbekistan)
Risk Factors of Cosmetic Outcomes after Hypospadias Repair: A Retrospective Analytical Study	**Wei Liu** (China)
Anthropometric Assessment on Prepubertal Boys with Hypospadias: A Multicenter Case Series	**Yunman Tang** (China)

How Can We Troubleshoot the Skin Problem during and after Surgery?

Byungjun Kim

Department of Plastic and Reconstructive Surgery, Seoul National University Hospital, Korea

Surgical treatment for the hypospadias is challenging, with high complication rate in the reconstructive procedures. In this presentation, the tips will be discussed to minimize skin problems during hypospadias surgery. Further, clinical data of hypospadias in SNUH will be provided.

Buccal mucosa graft (BMG) and Full-thickness skin graft (FTSG) are most commonly used to reconstruct urethra. BMG has thick non-keratinized squamous epithelium with thin lamina propria, which shows a very similar histologic structure with urethral wall. FTSG is versatile in the size, thickness, and the availability of donor site. It is commonly used to cover a large defect

Graft survives by serum imbibition for the immediate postoperatively, then by blood vessel connection and revascularization for the next few days. Therefore, the vascularity from the bedside is most important for a successful graft. History of previous operations, fibrosis decrease perfusion to the graft. Hematoma or seroma between the graft and the bed deteriorate perfusion to the graft. Meticulous hemostasis of the graft bed should be performed. Immobilization of the graft is an also crucial factor for graft survival. Compressive dressing (e.g. tie-over dressing) is commonly used. Negative pressure wound therapy is gaining its popularity as dressing method to improve graft survival.

Thirty-six patients who underwent surgery for hypospadias at SNUH were retrospectively reviewed. The average age was 16 years (14 months - 60 years). The mean observation period was 2 years and 1 month (3 months - 9 years). There were 26 cases of BMG and 10 cases of FTSG. The types of hypospadias were glandular (1), subglandular (2), penile (20), penoscrotal (9), and scrotal (4). The average BMG size was 3.4 cm in the longitudinal axis, 1.56 cm in the stroke axis, and 6.38 cm2 in area, and the maximal size was 7x2.5 cm. The average FTSG size was 5.35 cm in the longitudinal axis, 3.15 cm in the horizontal axis, and 22.43 cm2, and the maximal size was 10x4 cm. Postoperative complication rate was relatively high shown in 27 cases, fistula was the most common with 18 cases, followed by 9 cases of contracture. Of the 18 cases with fistula, repair was performed after fistulectomy in 5 cases, 3 cases were scheduled for surgery, and the remaining 10 cases were under follow-up. Reoperation was performed in 5 cases out of 9 cases with contracture, BMG after release in 3 cases, FTSG in 2 cases, surgery is scheduled for 2 cases, and the rest are under follow-up.

Free Paper: Hypospadias

Phenotypic Modulation of Vascular Smooth Muscle Cells in the Corpus Spongiosum Surrounding the Urethral Plate in Hypospadias

Huang Yichen, Huang Jiayao,Shi Xiujuan, Lyu Yiqing, WU Min, Chen Yan, Zhou Lijun, Yu Huan, Xie Hua, Chen Fang

Department of Urology, Shanghai Children's Hospital, Shanghai Jiao Tong University, China

Objective To investigate the phenotypic modulation of vascular smooth muscle cells (VSMCs) in the corpus spongiosum surrounding the urethral plate in hypospadias.

Methods Samples from five boys with of proximal hypospadias in our hospital were included. Samples from 5 other patients with urethral stricture were included as controls. The urethral corpus spongiosum tissue was collected for HE, Masson and α-SMA immunohistochemical evaluation. Spongiosum vascular smooth muscle cells were cultured and identified by α-SMA fluorescence. qRT–PCR and Western blotting and fluorescence were performed to measure the expression of the phenotypic modulation markers calponin 1, α-SMA and OPN in tissues or vascular smooth muscle cells, the transcription levels of the phenotypic modulation factors SRF and MYOCD, and the cell proliferation markers Ki67 and PCNA and the apoptosis markers Bax and Bcl-2.

Results The results of the study showed that the vascular lumen of the cavernous body around the urethral plate was larger and that the vascular smooth muscle layer was thicker in hypospadias. The expression of the contractile markers α-SMA and Calponin 1 in vascular smooth muscle cells was decreased, the expression of the synthetic marker OPN was increased, and the transcription of the phenotypic switching factors SRF and MYOCD was decreased. The expression of Ki67, PCNA and BAX was increased, and the expression of Bcl-2, an anti-apoptosis marker, was decreased.

Conclusion The phenotype of corpus spongiosum vascular smooth muscle cells around the urethral plate in hypospadias changed from the contractional type to the synthetic type. This phenotypic modulation was associated with increased proliferation and apoptosis rates. SRF and MYOCD may be the main factors mediating the phenotypic modulation of urethral corpus spongiosum vascular smooth muscle cells.

Free Paper: Hypospadias

Urethral Duplication with Multiple System Anomalies. Our Method for the Management of Urethral Duplication Type IIA-1

Zafar Abdullaev[1,2], Saidanvar Agzamkhodjaev[1,2], Akmal Rakhmatullaev[1,2], Kobiljon Ergashev[1], Asqar Soliyev[1], Ruslan Batrutdinov[3], Andrey Boyko[4]

[1]Pediatric urology department, National Children's Medical Center, Tashkent, Uzbekistan;
[2]Tashkent Pediatric Medical Institute, Tashkent, Uzbekistan;
[3]Pediatric urology department, Scandinavia Clinic, St Petersburg, Russian Federation;
[4]Pediatric urology department, Pediatric Municipal Clinical Hospital No.7, Barnaul, Russian Federation

Introduction Urethral duplication is a rare congenital anomaly. We report the minimally invasive surgical treatment in a patient with IIA-1 type duplicated urethra with two meatuses (ventral – main, dorsal - accessory) and multiple system anomalies (posterior urethral valve of the main urethra, single left kidney, anal atresia, scoliosis).

Case Diagnostic cystoscopy was performed to identify the anatomical structures of both urethras – PUV was found and ablated in the main urethra; could not be performed due to the small caliber of the accessory urethra. Additionally, the right orifice was not detected during the cystoscopy. Guidewire was passed through the accessory urethra to assure the exact urethral origination and the anterior location of the internal orifice of the accessory urethra was found during pneumovesicoscopy. Due to the close distance between two originations in the bladder, we decided to perform accessory urethral excision in an open manner. The accessory urethra was excised through degloving of the penis up to the proximal penile urethra. The accessory meatus was closed bluntly with PDS 7/0. The postoperative period was uneventful. The patient was discharged on the 5th postoperative day. The patient now voids spontaneously through the main urethra without any dysuria symptoms. Postoperative follow-up Q-max was 13.6 mL/sec.

Conclusions Our minimally invasive approach proved to be an excellent alternative for IIA-1 type urethral duplication with multiple system anomalies. Our approach has the advantage of decreased intraoperative penile injury and postoperative complications and improved cosmetic and functional results.

Free Paper: Hypospadias

Risk Factors of Cosmetic Outcomes after Hypospadias Repair: A Retrospective Analytical Study

Zhaoquan Liu, Xuemin Wu, Rongde Wu, Wei Liu

Department of Pediatric Surgery, Shandong Provincial Hospital, Jinan, China

Background The goals of hypospadias surgery are to create a functionally accepted and a near-normal looking penis. A growing concern with body image has led to greater attention being paid to cosmetic results. The objective of this study was to evaluate the cosmetic assessment of hypospadias repair by parents and patients, as well as to determine the risk factors affecting postoperative penile appearance.

Methods A retrospective analysis of the hypospadias cases operated in-between January 2012 and December 2021 was done. Surgical data of the previous repair and postoperative follow-up were collected. Parents and the patients over 10 years old evaluation of procedure was done by questonnaire using the pediatric penile perception score (PPPS). The postoperative score for the cosmetic result was analyzed.

Results A total of 110 questionnaires from parents and 27 questionnaires from patients were included in the study. Satisfaction was defined by cosmetic appearance score ≥12. Parents reported a satisfaction rate of 79.1% (87/110) and the results being satisfactory from patients were 66.7% (18/27). Among the 27 cases evaluated by both patients and parents, there was no statistical difference in scores (P=0.986) and satisfaction rate (P=1.000). Based on the scores from parents, they were divided into satisfactory (n=87) and unsatisfactory (n=23) groups. In univariate analysis, duration of follow-up, age at follow-up, preoperative glan width, postoperative glan width and penis length, the presence of complications had significant differences between the two groups. Multiple logistic regression found that the follow-up time (AUC 0.654 P=0.024 CI 0.524-0.784), the postoperative glan width (AUC 0.724 P=0.012 CI 0.589-0.860) and the presence of complications (P=0.019) were the independent risk factors of the unsatisfactory cosmetic results.

Conclusions The parent's and patient's perception of the penile cosmetic outcome after hypospadias repair showed good results. The presence of complication, the longer follow-up time and the smaller glan width after surgery were the independent risk factors of unsatisfactory postoperative penile appearance.

Free Paper: Hypospadias

Anthropometric Assessment on Prepubertal Boys with Hypospadias: A Multicenter Case Series

Xuejun Wang[1], Haichen Chen[2], Min Chao[3], Bo Yang[1], Yu Mao[1], Daorui Qin[1], Yonglong Wu[2], Yin Zhang[3], Yang Hu[2], Yu Liu[4], Shaoji Chen[1], Yunman Tang[1]

[1]Department of Pediatric Surgery, Sichuan Provincial People's Hospital, University of Electronic Science and Technology of China, Chengdu, China, [2]Department of Pediatric surgery, Women and Children's Hospital, School of Medicine, Xiamen University, Xiamen, China, [3]Department of Urology, Anhui Provincial Children's Hospital / Children's Hospital of Fudan University (Affiliated Anhui Branch), Hefei, China.

Objective Anthropometric variants in prepubertal boys with hypospadias were assigned and assessed to illustrate anatomical malformation.

Methods Identical measurement methods were delivered in 3 centers on Tanner I boys with hypospadias in primary surgery. The variants related to glans volume and morphology, foreskin volume, penile to scrotum distances, anogenital distances, pre- and post-operative stretched penile length, length of neourethra and postoperative whole urethral length, were assessed. Normal boys were enrolled to assess glans variants.

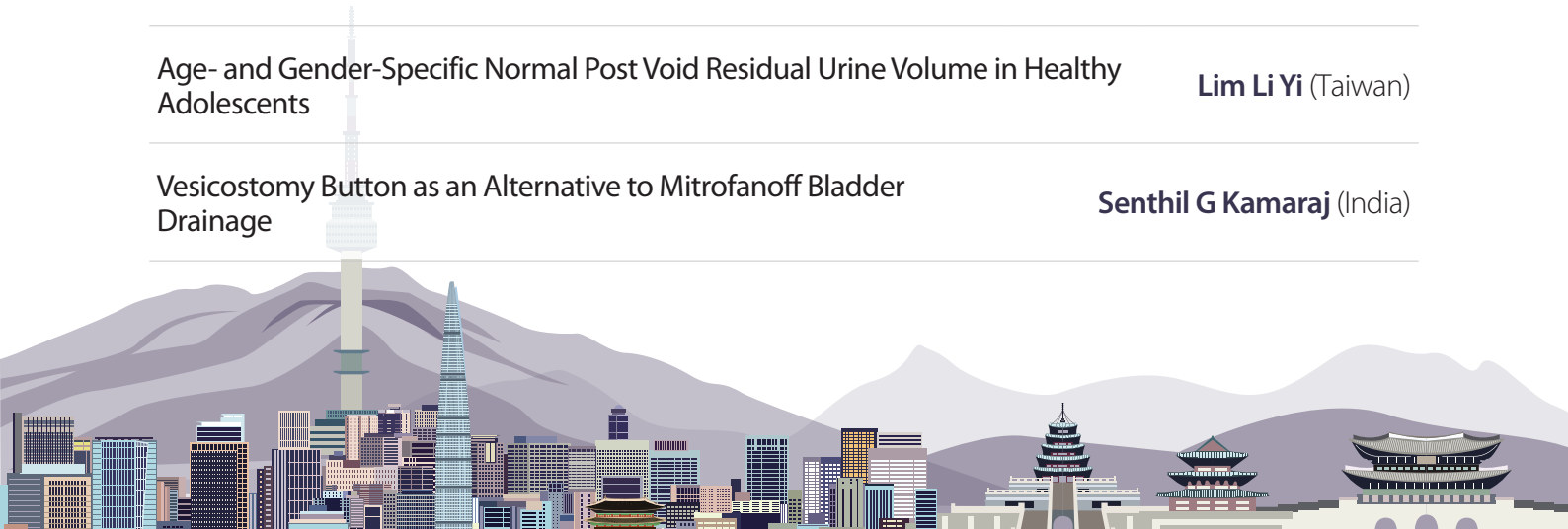
Results A total of 516 objectives were included with 238 from center 1, 159 from center 2, and 119 from center 3. The medium age was 29 (21,37) months. They were graded into distal (n=47), middle (n=208), and proximal (n=261) hypospadias. Normal control group included 93 boys with medium age of 106.5 (83.0, 118.25) months. Glans height and width decreased from distal to middle, then to proximal group, with height to width ratio consistent. Variants representing split meatus and glans ventral closure were different from normal control, while they added together then divided by a dorsal glans length matched that in normal control. The length of inner foreskin decreased with group varied proximally. No significant difference was noted in the length of outer foreskin and width of foreskin among the groups. Distances from the penis to the scrotum, and anogenital distances decreased with group varied proximally.

Conclusions Anatomical abnormality of hypospadias could be quantified as a possible basis for evaluation in hypospadias repair.

Enuresis and Voiding Dysfunction

Carlos Torres (Philippines)

Management of Nocturnal Enuresis-updated Standardization Document	**Shina Kawai** (Japan)
Use of Mirabegron in Pediatric Bladder Dysfunction	**Yuhua Fan** (Taiwan)
The Influence of Over Disposable Diaper Usage on Prevalence of Enuresis in China	**Jian Guo Wen** (China)
Free Paper: Enuresis and Voiding Dysfunction/Neurogenic Bladder	
Analysis of Factors Determining Uroflow Patterns: Illuminating the Role of Dual Channel Electromyography	**Yoonhye Ji** (Korea)
Diagnostic Criteria for Functional Constipation in Nocturnal Enuresis	**Jae Min Chung** (Korea)
Age- and Gender-Specific Normal Post Void Residual Urine Volume in Healthy Adolescents	**Lim Li Yi** (Taiwan)
Vesicostomy Button as an Alternative to Mitrofanoff Bladder Drainage	**Senthil G Kamaraj** (India)



Management of Nocturnal Enuresis-updated Standardization Document

Shina Kawai

Okinawa Prefectural Nanbu Medical Center and Children's Medical Center, Okinawa, Japan

The Japanese Society on Enuresis issued 'The Clinical Guideline for Nocturnal Enuresis Practice' in 2004, then published the 'Clinical Guideline of Nocturnal Enuresis 2016 (GL2016)', and published the 'Clinical Guideline of Nocturnal Enuresis 2021(GL2021)' in November 2021.

In GL2021, the contents of GL2016 were reviewed and brushed up, and the clinical guidelines for non-monosymptomatic nocturnal enuresis (NMNE) were addressed.

In the previous version of the clinical algorithm, if the daytime lower urinary tract symptoms (LUTS) of NMNE were not improved by behavioral therapy, 'consultation to expert' was recommended. On the contrary, we established a clinical algorithm for daytime LUTS of NMNE separately from the clinical algorithm for monosymptomatic nocturnal enuresis (MNE) in GL2021 and we recommended to proceed to the clinical algorithm for MNE after improvement of daytime LUTS.

We also determined the recommendations for some clinical questions (CQ) by dividing them into "for MNE" and "for daytime LUTS of NMNE".

Of the CQ regarding treatment in GL2021, the overall strength of recommendations regarding medication were generally "strong" or "medium". On the other hand, the overall strength of recommendations regarding urotherapy excluding alarm therapy were "weak", and it was revealed that the accumulation of scientific evidence in this field is one of the future issues.

Use of Mirabegron in Pediatric Bladder Dysfunction

Yuhua Fan

Taipei Veterans General Hospital, Taiwan

Mirabegron is a selective β_3-adrenergic receptor agonist which activate adenylyl cyclase and lead to the production of cAMP, resulting in smooth muscle relaxation. Mirabegron has been investigated in children with neurogenic detrusor overactivity (NDO) and overactive bladder (OAB) in recent years. Furthermore, mirabegron received its first approval in NDO in pediatric patients aged ≥ 3 years on 25 March 2021 in the USA.

In the phase 3 Crocodile study, which evaluated the efficacy, safety and tolerability of mirabegron in pediatric patients with NDO, statistically significant and clinically meaningful reductions in the primary endpoint of maximum cystometric capacity as early as Week 4 was observed and these reductions were sustained across the 24-week treatment period. There were no clinically significant ECG abnormalities or QTcF findings, but one patient (1.2%) experienced a drug-related adverse event of QT prolongation at Week 24.

The research team from Canada conducted the prospective studies of monotherapy and add-on therapy with mirabegron in pediatric patients with refractory OAB. Bladder capacity, continence and quality of life were improved after the introduction of mirabegron, and few side effects were reported in both studies.

In conclusion, mirabegron was effective and well-tolerated in the treatment of pediatric patients with NDO and OAB.

Free Paper: Enuresis and Voiding Dysfunction/Neurogenic Bladder

Analysis of Factors Determining Uroflow Patterns: Illuminating the Role of Dual Channel Electromyography

Yoonhye Ji[1], Jieun Park[1], Jeoung Eun Ji[1], June Seok Kim[2], Gang Kyu Kim[3], Sang Won Han[4], Yong Seung Lee[4], Sang Woon Kim[4]

[1]Bladder-Urethra Rehabilitation Clinic, Department of Pediatric Urology, Severance Children's Hospital, Yonsei University Healthcare System, [2]Urological Science Institute, Gangnam Severance Hospital, Yonsei University College of Medicine, [3]Department of Urology, National Health Insurance Service Ilsan Hospital, [4]Urology and Urological Science Institute, Yonsei University College of Medicine, Korea

Background Uroflowmetry is primarily performed to evaluate the bladder function of children with voiding dysfunction, but when the uroflow pattern, especially the staccato pattern or the interrupted pattern, is observed, it is difficult to interpret the cause of the pattern. The International Children's Continence Society has recommended dual channel electromyography (EMG) that simultaneously examines the perineal EMG and abdominal EMG in order to interpret the uroflow pattern, but little research has been done on the role of the dual channel EMG in practice. Therefore, the aim of this study was to analyze uroflowmetry performed with simultaneous the dual channel EMG to identify factors affecting the formation of uroflow pattern.

Methods This study included all patients who underwent dual channel EMG from January to December 2021 at pediatric urology department of Severance children's hospital. In the case of multiple tests during the year, the first test was used as the subject of analysis. Only cases where the bladder capacity was 50% or more of the expected bladder capacity (EBC) during the test were included for analysis. Activation of perineal EMG and abdominal EMG was defined as continuous or intermittent during urination, except when observed only at the beginning or end of urination.

Results Uroflowmetry performed with simultaneous the dual channel EMG was performed on 683 patients excluding duplicates. Among 683 patients, 450 cases with no EMG error were included in the final analysis among 471 cases with bladder capacity greater than 50%. 221 (49.1%) of all patients were male, and the mean age was 8.6±4.2 years. Among the patients, 344 (76.4%) had non-neurogenic bladder. The staccato pattern was observed in 77 (17.1%) patients, and the interrupted pattern was observed in 33 (7.3%) patients. Of the patients with the staccato pattern, 20 (26.0%) had abdominal EMG activation without perineal EMG activation, and 24 (31.2%) had simultaneous activation of both perineal EMG and abdominal EMG. And, in the case of interrupted pattern, activation of both perineal and abdominal EMG were observed at the same time in 63.6% of cases, and the difference between the uroflow patterns was statistically significant (p-value<0.001). To analysis the factors affecting the staccato or interrupted pattern, logistic regression analysis was performed with gender, age, diagnosis (neurogenic bladder of non-neurogenic

bladder), bladder capacity/estimated bladder capacity, and dual channel EMG activation characteristics as variables. As a result of logistic regression analysis, those who showed abdominal EMG activation without perineal activation (OR 3.339, 95% CI 1.651-6.755), perineal EMG activation without abdominal activation (OR 5.045, 95% CI 2.491-10.217) and both abdominal and perineal EMG activation (Or 12.363, 95% CI 6.282-24.333) were more likely to show staccato or interrupted pattern than those who didn't show perineal and abdominal EMG activation.

Conclusion As a result of this study, abdominal EMG activation had an effect on staccato or interrupted pattern formation. Therefore, when a staccato or interrupted pattern is observed during uroflowmetry, it is necessary to differentiate the contraction of rectus abdominis muscle straining during voiding through uroflowmetry performed with simultaneous the dual channel EMG.

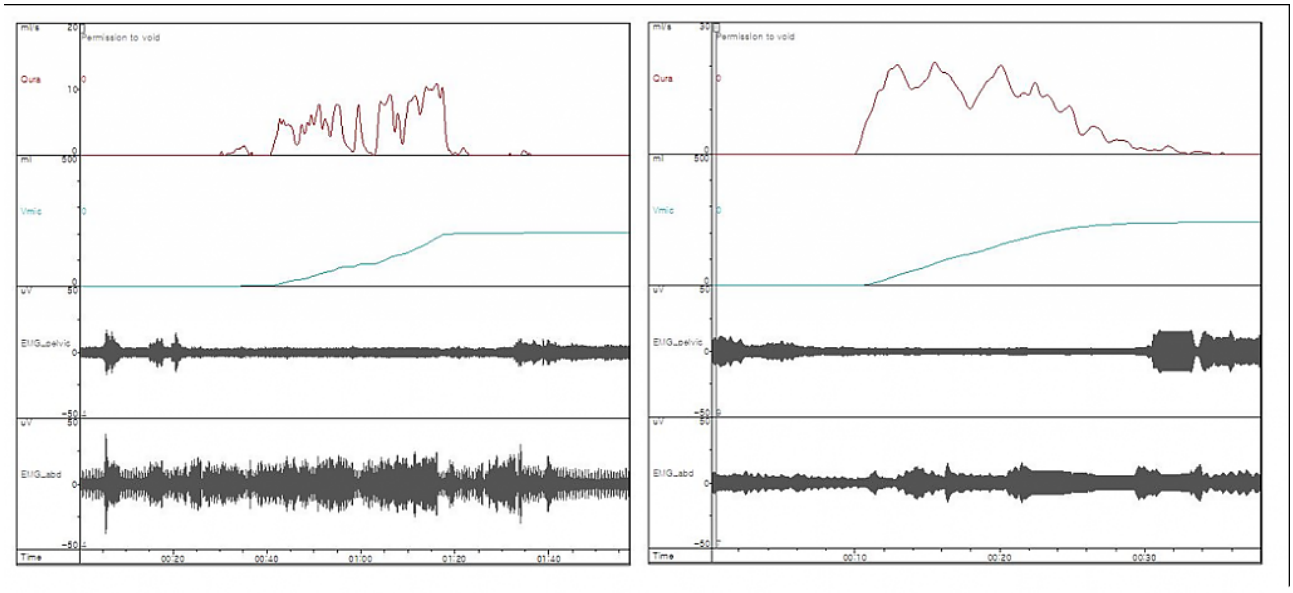


Figure. Example cases of uroflowmetry with dual channel electromyography (EMG): abdominal EMG activation without perineal EMG activation.

Free Paper: Enuresis and Voiding Dysfunction/Neurogenic Bladder

Diagnostic Criteria for Functional Constipation in Nocturnal Enuresis

Jae Min Chung, Sang Don Lee

Department of Pediatric Urology, Pusan National University Children's Hospital, Yangsan, Korea

Background There is a close association between constipation and nocturnal enuresis (NE), but constipation cannot be readily diagnosed. The aims of this study were to evaluate the prevalence of constipation in NE and the difference according to the diagnostic criteria for constipation.

Methods We collected clinical data from 109 children (mean age, 6.8±1.3 years) with chief complaints of nocturnal enuresis. A voiding questionnaire and a 3-day voiding diary were collected, and urinalysis, the Bristol stool scale, and plain abdominal radiography were performed. Constipation was defined as 4 conditions; mother's report, Rome III diagnostic criteria, Bristol stool scale types I/II, or a Leech score higher than 8 points as determined by plain radiography. Functional constipation was defined as conditions satisfying at least one of each criterion.

Results According to the mother's report, the Rome III criteria, Bristol stool scale, and Leech score, using parental report the prevalence of FC was 21 (19.2%), 15 (13.8%), 31 (28.4%), and 32 (29.4%), respectively ($P<0.05$). Only 4 (3.7%) children are satisfying all criteria simultaneously, and 60 (55.0%) children had functional constipation. The agreement between the mother's report and the 3 methods for assessing the prevalence of constipation was different. Only the Bristol stool scale and Leech score were similar ($p=0.52$).

Conclusions The prevalence of functional constipation in NE could be overestimated, if constipated patients were recruited by use of Mother's report, the Rome III criteria, Bristol scale, and Leech score together. Different methods of constipation assessment did not result in a difference in the prevalence of constipation.

Free Paper: Enuresis and Voiding Dysfunction/Neurogenic Bladder

Age- and Gender-specific Normal Post Void Residual Urine Volume in Healthy Adolescents

Li Yi Lim[1,3], Shang-Jen Chang[2], Stephen Shei-Dei Yang[1]

[1]Taipei Tzu Chi Hospital, Taiwan, [2]National Taipei University Hospital, Taiwan, [3]Hospital Canselor Tuanku Muhriz UKM, Malaysia

Purpose To establish age- and gender-specific normal post void residual (PVR) urine volume in adolescents.

Material and Methods Healthy adolescents aged 12-18 years were recruited to undergo two uroflowmetry and PVR. Adolescents with known lower urinary tract dysfunction or urinary tract infections were excluded. PVRs were assessed within 5 minutes after voiding using suprapubic ultrasound (Logiq Book1, GE Medical Systems, Milwaukee, WI), and were calculated using the equation height × width × depth × 0.52.

Results Total 637 adolescents with a mean age of 14.6±1.5 years had performed 1084 uroflowmetry and PVR. Excluding those with a bladder volume (BV) of <100ml or inadequate tests, total 894 uroflowmetry with PVR were analyzed. PVRs were higher in adolescents aged 15-18 years than in those aged 12-14 years (P<0.001). Moreover, they were higher in females than in males (P<0.001). Multivariate analysis revealed that PVR was positively influenced by age (P=0.001), gender (P<0.001), and BV (P<0.001). We recommend close monitoring if repeat PVR is above 90th percentile i.e. PVR >18ml or >7% of BV and PVR >24ml or >9% of BV in males and females aged 12-14 years respectively, PVR >22ml or >7% of BV and PVR >34ml or >10% of BV in male and females aged 15-18 years respectively. Further investigations are warranted if PVR is above 95th percentile i.e. PVR >28ml or >8% BV and PVR>37ml or >11% of BV in males and females aged 12-14 years respectively, PVR of >29ml or >11% of BV and PVR >42ml or >13% of BV in male and females aged 15-18 years respectively.

Conclusion In adolescents, PVR increases with age and varies between genders, therefore, age and gender-specific reference values should be used. Further studies are required to validate these recommended values.

Table: Age- and gender- specific percentiles of post void residual (PVR)
Data from 637 adolescents with 894 interpretable tests

	Overall						12-14 years						15-19 years					
	Overall (n=894)		Male (n=406)		Female (n=488)		Overall (n=633)		Male (n=297)		Female (n=336)		Overall (n=261)		Male (n=109)		Female (n=152)	
PVR[a]	ml	% BV[b]	ml	% BV	ml	% BV	ml	% BV	ml	% BV	ml	% BV	ml	% BV	ml	% BV	ml	% BV
50th	7.4	2.8	6.2	2.5	8.6	3.2	6.5	2.6	5.7	2.4	7.7	3.0	9.5	3.9	7.6	3.2	12.5	4.5
75th	14.4	5.3	11.9	4.5	16.9	6.1	12.9	4.7	11.2	4.2	14.9	5.3	17.4	6.4	14.5	5.2	20.0	7.6
90th	23.5	8.3	19.6	6.8	27.7	9.7	21.8	7.6	17.8	6.6	23.5	8.9	28.3	9.9	21.8	7.1	34.2	10.2
95th	35.0	10.8	27.3	8.5	38.2	11.7	33.3	10.4	27.9	8.2	37.0	10.8	37.7	12.4	28.8	11.2	42.5	13.3

a. post void residual; b. bladder volume

Free Paper: Enuresis and Voiding Dysfunction/Neurogenic Bladder

Vesicostomy Button as an Alternative to Mitrofanoff Bladder Drainage

Senthil G Kamaraj[1], Muhammed Jeseel[2], Anis A[3], Siddarth Pandian[4]

Department of Pediatric Surgery and Pediatric Urology, Kanchi Kamakoti Child's Trust Hospital, Chennai, India

Background In children with poor bladder emptying, when clean intermittent catheterisation(cic) cannot be initiated for reasons of age, sensation or urethral anatomy, vesicostomy button is emerging as a safe and effective alternative with better acceptance amongst patients and caregivers for bladder management. We report our short-term experience with the vesicostomy button as a substitute to mitrofanoff bladder drainage, highlighting its benefits and complications

Methods A retrospective study was conducted on children who had a vesicostomy button(11 in number), placed previously. Placement was through existing vesicostomy or initial placement of suprapubic catheter and replacement with button(in majority of our cases). We evaluated the procedure, compliance, efficacy of bladder emptying and immediate and long term complications

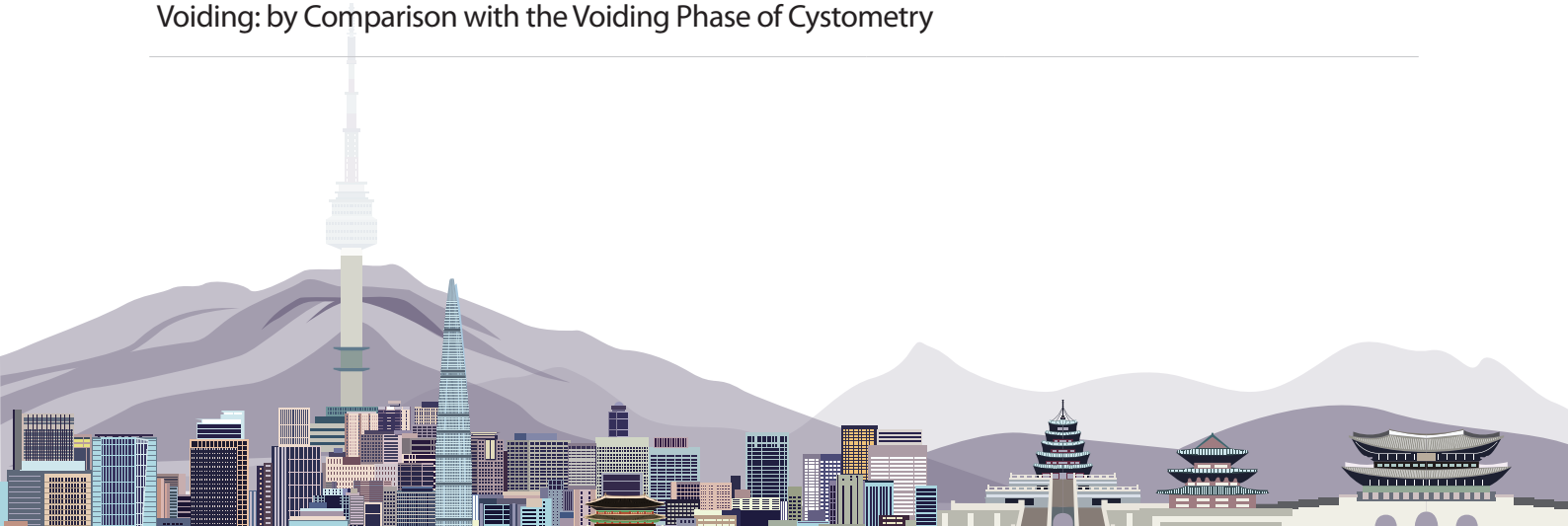
Results 10 children have had a vesicostomy button placed at our institution in the 5 year period, age range of 2 years to 14 years. Indications for placement included anatomic abnormalities (3), neurogenic bladder(4), non neurogenic neurogenic bladder(2) and valve bladder. Complications were minor including temporary button malfunction and leakage.

Conclusion The vesicostomy button is an acceptable and effective alternative for good bladder drainage. It scores over the `mitrofanoff in this short duration study in terms of ease of placement and paucity of major complications and malfunction

Neurogenic Bladder

Mitsuru Noguchi (Japan)

Spinal Dysraphism: What Urologist Should Know	**Kyu-Chang Wang** (Korea)
Real World Experiences in Pediatric Urodynamic Study	**Paul Austin** (USA)
Complex Urinary Incontinence: Things to Consider	**Antonio Macedo Jr.** (Brazil)
Free Paper: Neurogenic Bladder	
Cross-cultural Adaptation and Validation of the Korean Version of the Quality of Life Assessment of Spina Bifida for Teenagers (QUALAS-T-K)	**Seung Hyeon Yang** (Korea)
Results of Uroflowmetry Performed with Simultaneous the Dual-channel EMG in Patients with Spina Bifida with Spontaneous Voiding: by Comparison with the Voiding Phase of Cystometry	**Jieun Park** (Korea)



Spinal Dysraphism: What Urologist Should Know

Kyu-Chang Wang

Department of Neurosurgery,National Cancer Center, Korea

Spinal dysraphism, whether open or closed, is one of the representative entities in pediatric neurosurgery. Urologists play important roles because urologic problems are leading symptoms and signs. Recent advances in neuroembryology, neuroimaging such as MRI, and operative tools including intraoperative neurophysiological monitoring led to a dramatic changes in the classification of the dysraphic lesions and improvements of management outcome in spinal dysraphism. For pediatric urologists, understanding of such recent advances in the field of pediatric neurosurgery is crucial for interdisciplinary communication and adequate patient management.

This talk will cover following items. (1) Terms related to the spinal dysraphism will be reviewed. Some are vague or mis-leading. (2) For understanding of pathoembrygenesis, primary and secondary neurulation processes will be briefly introduced and the errors in the embryogenesis will be correlated with the results (dysraphic lesions). (3) New spinal dysraphic entities proposed during the last two decades (including limited dorsal myeloschisis, retained medullary cord, and junctional neural tube defect) will be introduced. (4) The difference in the involvement beyond the spinal cord, between the 'open vs. closed' lesions or 'primary neurulation defect vs. secondary neurulation defect' will be discussed. (5) The pathophysiologic mechanisms of clinical presentation will be listed and the phenomenon of re-tethering will be emphasized.

Finally, what neurosurgeons want urologists to do will be addressed: (1) urologic diagnostic work-up for presence of neurogenic bladder and documentation of preoperative and postoperative urologic states, (2) management of urologic problems, and (3) long term surveillance for re-tethering.

Interdisciplinary communication, especially between the neurosurgeon and the urologist, is essential in the management of patients with spinal dysraphism. Understanding of issues in other disciplines is a basic requirement of a team caring patients with spinal dysraphism.

Real World Experiences in Pediatric Urodynamic Study

Paul Austin

Baylor College of Medicine, USA

During this session, we will discuss the role of Urodynamics in the evaluation and management of neurogenic bladder in the pediatric population. We will discuss how urodynamics allows us to classify bladders into safe, intermediate and hostile categories. We will discuss interpretation of urodynamics and how we use the information for medical and surgical management.

Complex Urinary Incontinence: Things to Consider

Antonio Macedo Jr.

Federal University of Sao Paulo, Brazil

Introduction

Urinary incontinence in neurogenic bladder should be considered having the neurogenic bladder pattern categorization in mind. We adopt the Leal da Cruz and Macedo classification (J Urol 2015). Essentially, two groups are of relevance: those leaking at high pressure because of hypercontractile detrusor activity and hypertonic sphincteric function and those leaking at low detrusor pressure (DLPP < 40cm H20). We reviewed the topic according to our experience.

Material and Methods

Since 2011 we prospectively follow MMC patients operated in utero. We have also accumulated experience since 1996 with post-natal MMC repair.

Results

Patients with urinary leakage at high pressure can be treated initially with CIC and anticholinergics with 60% chance of response (Macedo et al, Braz J Urol 2022). Bladder augmentation alone with catheterized stoma (Macedo technique) is our preferred approach for non-responders. For those leaking at low pressures, it is essential the combination of a resistance procedure with bladder augmentation. The bladder neck plasty (Pippi-Salle or YDL) has 60% long term result and can be rescued with bulking agents injection. Primarily, the Deflux in the bladder neck has a response rate of only 20-25% and should not be incentivized. The sling 360 grads can be offered to females with 60-70% success rate. The bladder neck closure is the best alternative in regards to 90% success rate and can be discussed with the family for primary treatment or redos.

Conclusion

This analysis confirms our statements that fetal MMC surgery offers limited improvement in bladder function compared to postnatal surgery. The incontinet pattern is found in 30% of all MMC patients. We conclude that the "low-risk" pattern (incontinent pattern) is high-risk for future major bladder reconstruction to achieve continence.

Free Paper: Neurogenic Bladder

Cross-cultural Adaptation and Validation of the Korean Version of the Quality of Life Assessment of Spina Bifida for Teenagers (QUALAS-T-K)

Seung Hyeon Yang[1], Yoonhye Ji[1,2], Yong Seung Lee[3], Sang Woon Kim[3], Eunjeong Bae[4], Hyeseon Yun[4], Eun Kyoung Choi[5]

[1]Department of Nursing, Yonsei University Graduate School, [2]Bladder-Urethra Rehabilitation Clinic, Department of Pediatric Urology, Severance Children's Hospital, Yonsei University Healthcare System, [3]Department of Urology, Yonsei University College of Medicine, [4]College of Nursing and Brain Korea 21 FOUR Project, Yonsei University, [5]College of Nursing and Mo-Im Kim Nursing Research Institute, Yonsei University, Korea

Background Spina bifida (SB) is a common birth defect that affects the central nervous system, causing a variety of symptoms depending on the location and severity of the lesion, and greatly impacts quality of life (QOL). However, it was difficult to measure the QOL of people with SB with the existing instruments due to the disease-specificity, which includes many voiding and defecation symptoms and gait disturbance. In 2015, a QOL instrument specialized for SB, named the QUAlity of Life Assessment in Spina bifida for Teenagers (QUALAS-T) was developed in US, however there is no validated Korean version to measure the QOL of teenagers with SB in Korea. The purpose of this study was to validate a version of the QUALAS-T translated into the Korean.

Methods During the 34-month study period (July 2019-April 2021), teenagers, aged 13-17 years, who underwent spinal surgery for myelomeningocele or lipomyelomeningocele within two years of birth were enrolled. Translation, cross-cultural adaptation, and validation processes followed a method proposed by Indiana University Research and Technology Corporation, that developed the original instrument.

Results Participants' mean age was 14.57 (±1.59) years, 50.9% were female, and 60.4% had lipomyelomeningocele. The percentages of participation who underwent self-catheterization, enema, and who had fecal incontinence were 67.9%, 41.5%, and 17.0%, respectively. The mean scores for the Family and Independence domain and Bladder and Bowel domain of the QUALAS-T-K were 73.49 ± 27.03 and 63.87 ± 29.03, respectively. The internal consistency was excellent (Cronbach's alpha 0.879 – 0.890), as was the test-retest stability (ICC, 0.839 – 0.924). The convergent and divergent validities were measured using the KIDSCREEN-27. The correlation between the two QUALAS-T-K domains was 0.668, and the Pearson correlation coefficient between the Korean versions of the KIDSCREEN-27 was between 0.280 and 0.636.

Conclusion The reliability and validity of the QUALAS-T-K was validated in Korean teenagers with SB. QUALAS-T-K will facilitate QOL measurements in teenagers with SB in Korea and will be a useful instrument in clinical practice and research to improve QOL.

Free Paper: Neurogenic Bladder

Results of Uroflowmetry Performed with Simultaneous the Dual-channel EMG in Patients with Spina Bifida with Spontaneous Voiding: By Comparison with the Voiding Phase of Cystometry

Jieun Park[1], Yoonhye Ji[1], Jeoung Eun Ji[1], Sang Won Han[2], Yong Seung Lee[2], Dae Ho Kim[3], Sang Woon Kim[2]

[1]Department of Pediatric Urology, Bladder-Urethra Rehabilitation Clinic, Severance Children's Hospital;
[2]Department of Urology And Urological Science Institute, Yonsei University College of Medicine;
[3]Department of Urology, Gangnam Severance Hospital, Urological Science Institute, Yonsei University College of Medicine, Korea

Introduction Patients with spina bifida need a regular follow-up of Urodynamic study to prevent upper urinary tract injury and to diagnose lower urinary tract symptoms. Close monitoring of bladder function is necessary, especially if there are signs of deterioration of the urinary tract, or during puberty. Uroflowmetry(UF) is easier to perform compared to cystometry and can be easily used to monitor bladder function for long-term follow-up patients. Therefore, the aim of this study was to analyze the results of dual-channel EMG in patients with spina bifida with spontaneous voiding and to evaluate the value of dual-channel EMG by comparing the results of cystometry in long-term follow-up.

Methods From January to December 2021, patients with spina bifida over 5 years of age who underwent dual-channel EMG at pediatric urology department of Severance children's hospital were analyzed. Patients with congenital anatomical anomalies were excluded. In the case of the cystometry, the most recently performed test from the time of analysis was analyzed.

Results The mean age was 12.1±5.6 years and 24(58.5%) were male, and 17 were female. Among 41 patients, 33(80.5%) were diagnosed with Lipomeningomyelocele, and 5 (12.2%) had Meningomyelocele, 2(4.9%) had Dermal sinus tract, and 1 (2.4%) had Caudal regression syndrome. In the Uroflow pattern, 13 (31.7%) had a bell, 8 (19.5%) had a staccato, 8 (19.5%) had a plateau, and 12 (29.3%) were found as an interrupted pattern. Using Dual-channel EMG, 17 (41.5%) were having both perineal and abdominal EMG activation, 6 (14.6%) showed abdominal EMG activation only, and 9 (9.8%) had perineal EMG activation only. 14 (34.1%) had neither the perineal nor the abdominal EMG. As a result of the cystometry, 20 (48.8%) had normal findings in the voiding phase, while 13 (31.7%) were found to have detrusor-sphincter dyssynergia (DSD), and 8 (19.5%) had acontractile detrusor. 5 (62.5%) among the staccato patterns were DSD or acontractile, and 10 (83.5%) of the patients having interrupted patterns were DSD or acontractile (p-value=0.029). Also, 3 of the patients having only perineal EMG activated (75%), 2 of the patients with only the abdominal EMG activated (33.3%), and 13 of the patients with both perineal and abdomen activated (76.5%) were observed as DSD

or acontractile. In particular, simultaneous perineal and abdominal EMG activation during voiding was observed in all 8 (100%) with acontractile bladder (p-value: 0.004). However, there was no statistically significant difference between patients with DSD and patients with acontractile in the UF pattern (DSD:acontractile-= 58.3%:100%, p-value=0.055), dual-channel EMG activation (p-value=0.066) and residual urine volume(median) (DSD:acontractile=101.5(28-405) : 148.0(0-285), p-value=0.817).

Conclusion As a result of this study, the UF pattern and EMG activation results obtained by the UF performed with simultaneous dual-channel EMG were correlated with voiding disorders. However, differences between DSD and acontractile, regarded as a subclass of the abnormal finding of the voiding phase of the cystometry, was not relevant. However, it is possible to confirm findings suggesting voiding disorders through dual-channel EMG, further studies are needed to explore the role of dual-channel EMG in patients with spina bifida.

The 22nd Congress of
Asia-Pacific Association of Pediatric Urologists
(APAPU 2022)

2022

Adolescent Varicocele

Yuichiro Yamazaki (Japan)

Surgical Indications: Standards and Pitfalls	**Ji Yong Ha** (Korea)
Catch-up Growth VS Risk of Progression: When to Intervene?	**Koji Shiraishi** (Japan)
Free Paper: Neurogenic Bladder/Hypospadias	
Augmentation Cystoplasty with Mitrofanoff - Gold Standard in Reconstructive Urology	**Sharjeel Saulat** (Pakistan)
A Nomogram to Predict Urethral Plate Transection in Hypospadias: A Prospective Multicenter Study	**Pei Liu** (China)
Spongioplasty with Buck's Fascia as the Coverage of the Dorsal Inlay Graft Urethroplasty for Primary Hypospadias Repair	**Ting Zhang** (China)
Urethroplasty of Midscrotal Cicada Wing Flap in the Repair of Residual Type IV Curvature after Hypospadias Surgery	**Xuejun Wang** (China)

Surgical Indications: Standards and Pitfalls

Ji Yong Ha

Keimyung University Dongsan Medical Center, Korea

Varicoceles are not uncommon in adolescents over 10 years of age, and are known to be found in 10-15% of all men.

Diagnosis of adolescent varicocele is usually made with a routine physical examination or self-exam. This is because most are asymptomatic. In adult, it is found as a discomfort in the scrotum or during examination for the cause of infertility. Adolescent varicocele differs with adult varicocele.

However, there are still many unknowns about the etiology of varicoceles discovered in adolescents and their effects on the testicles, and the controversy over the treatment timing and indications continues.

Effect of varicoceles on the testes in adolescents

1. It interferes with the growth of the testicles.
2. Lowers sperm quality.
3. It causes testicular pain/discomfort.

Most widely accepted indication for surgery in adolescents is 'testicular growth. Testicular atrophy caused by varicoceles must be corrected, and testicular catch-up growth after varicocelectomy has been reported to be successful.

However, varicoceles with testicular size discrepancy discovered in adolescence may not be an absolute indication for treatment.

1. Many observational studies have reported errors in testicular size measurement, and normalization reports of testicle size without varicocelectomy.
2. In the aspect of sperm quality, a recent observational study showed that sperm quality spontaneously improved in untreated/uncorrected varicoceles in tanner stage 5 adolescents.
3. Does late treatment cause irreversible damage? Even after delayed varicocelectomy, catch-up growth was achieved and sperm quality improved.

There are cases in which varicoceles require early treatment in adolescents.

The risk of varicoceles on the testicles varies between individuals. In particular, it is necessary to pay more attention to the evaluation of the risk of varicoceles on the testicles when testicles have not yet fully grown.

References

1. Jae Min Chung and Sang Don Lee. Current Issues in Adolescent Varicocele: Pediatric Urological Perspectives. World J Mens Health. 2018 May; 36(2): 123–131.
2. David I. Chu, Stephen A. Zderic, et al. The natural history of semen parameters in untreated asymptomatic adolescent varicocele patients: A retrospective cohort study. J Pediatr Urol. 2017 Feb; 13(1): 77.e1–77.e5.
3. Soo Woong Kim. Varicocele and male infertility. J Korean Med Assoc 2012 January; 55(1): 37-46
4. Dohle GR, Colpi GM, Hargreave TB, Papp GK, Jungwirth A, Weidner W; EAU Working Group on Male Infertility. EAU guidelines on male infertility. Eur Urol 2005;48:703-711.
5. Chiba K, Ramasamy R, Lamb DJ, Lipshultz LI. The varicocele: diagnostic dilemmas, therapeutic challenges and future perspectives. Asian J Androl 2016;18:276-81.
6. Kenneth I Glassberg, Ruslan Korets. Update on the management of adolescent varicocele. F1000 Med Rep. 2010 Apr 12;2:25.
7. David A Diamond, Patricio C Gargollo, Anthony A Caldamone. Current management principles for adolescent varicocele. Fertil Steril. 2011 Dec;96(6):1294-8.

Indication and timing of varicocele repair during adolescents

Koji Shiraishi

Department of Urology, Yamaguchi University, Japan

Purpose

Although semen examination in adulthood and paternity assessments are the ultimate end point for the indication and timing of varicocele repair during adolescents, there is no established information to guide patients and parents because long-term follow-up data after varicocele repair among adolescents are lacking. In this study, testicular volume at the age of 20 years old was used as a surrogate for spermatogenesis in men with or without a history of varicocele repair during the adolescent period, and the development among these men was compared based on the timing of surgery.

Patients and Methods

A total of 105 men with microsurgical low ligation for grade 2 or grade 3 left varicocele performed between the ages of 9 and 18 years old who were followed-up at the age of 20 years old were included in this study. Twenty-one patients who were diagnosed during the adolescent period without varicocele repair were included as controls. The surgical indications were as follows: 1) left testicular atrophy more than 20% compared with the right testis during a follow-up of at least 6 months, 2) pain and discomfort, and 3) a strong desire for surgery from patients and their parents. Ultrasonographic measurements of the bilateral testes were performed annually, and the results were compared between those with and without surgery and based on the timing of surgery.

Results

Varicocele repair was performed in 19 elementary school students (Tanner stage 1 or 2), 53 junior high school students (Tanner stage 2 to 4) and 33 high school students (Tanner stage 4 or 5). Ninety-seven cases (92%) showed significant testicular growth bilaterally compared to the non-surgery control group, whereas 8 cases (8%) did not show any postoperative testicular growth. At the age of 20, the left testicular volume was 20.1, 19.1 and 17.7 ml, among those who underwent repair in elementary, junior high, and high school, respectively. There was significantly less development in boys who underwent varicocele repair at the high school level than in those at the junior high school and elementary school levels ($p<0.05$). A similar tendency was observed in the right testis. In the high school group, testicular growth at 20 years old was significantly smaller in cases with a preoperative left testicular volume

less than 12 ml ($p<0.05$).

Conclusion

No marked difference was observed in testicular volumes at 20 years old based on the timing of surgery before and after puberty; however, early surgical intervention is necessary for cases of left testicular atrophy (less than 12 ml) in high school students. Furthermore, a small group of patients showed no testicular catch-up growth after varicocele repair, indicating that there is a possibility that pathologies other than varicocele, such as Klinefelter's syndrome, coexist, thus requiring additional follow-up.

Free Paper: Neurogenic Bladder/Hypospadias

Augmentation Cystoplasty with Mitrofanoff - Gold Standard in Reconstructive Urology

Sharjeel Saulat, Jahanzeb Sheikh, Syed Saeed Uddin Qadri, Awais Ayub, Hamza Ashraf, Umber Rasheed

Tabba Kidney Institute, Post-Graduate Training And Research Center, Pakistan

Introduction Augmentation Ileocystoplasty serves as an excellent kidney-saving surgical option in patients with neurogenic bladder where their lives can be eased by a continent diversion and continuous intermittent self-catheterization. Bladder size is augmented with an ileal patch and the CISC pathway is either made via appendix called Mitrofanoff or ileal tube called Monti segment and secured to the skin via VQZ technique.

Methodology 39 patients presented in our institute during the tenure of 2017-2021 with a diagnosis of Neurogenic Bladder and underwent Augmentation Ileocystoplasty, Mitrofanoff, and VQZ. Pre-operative and Post-operative bladder capacities and hydronephrosis along with other operative details were recorded. Data was entered and analyzed in a statistical package of social sciences 22, The descriptive statistical tests were performed for Independent variables including the subject's age, Body mass index (BMI). Graphs will be made on SPSS version 20 and Microsoft excel. The measure of association was analyzed with the help of Paired sample T-Test, Compare means test, and for the validity of data, a chi-square test was performed. A P-Value of < 0.05 was considered significant.

Results The mean age recorded was 14.2±1.8 years (minimum 3 years and maximum 16 years). Gender distribution was noted as 33:06 (male: female). Pre-operative mean bladder capacity was recorded as 294±40.4 ml, with pre and post-void volumes of 278.2±99.2 and 80.7±33.5 ml respectively. Post-operative mean bladder capacity was calculated as 510±50.5 ml, showing improvement in mean bladder capacity post-operatively. Pre and post-operative hydronephrosis were also evaluated, and on one-month follow-up, 84% of patients showed improved hydronephrosis on ultrasonography. Similarly, postoperative serum creatinine levels also improved in 65% of patients.

Conclusion Augmentation of Ileocystoplasty and a continent diversion in forms of Mitrofanoff showed improvement in urinary bladder capacity, renal function, and hydronephrosis in the postoperative follow-up period and hence is a good surgical practice for patients with neurogenic bladder.

Variables		Pre-procedure	Post-procedure	P-Value
Laboratory investigations	Hemoglobin	12.1 ± 2	11.0 ± 1.9	0.001
	Hematocrit	36.4 ± 6.1	33.2 ± 5.6	0.001
	TLC	12.6 ± 6.0	12.2 ± 3.8	0.707
	Platelets	313.4 ± 85.2	279.8 ± 72.6	0.0001
	Urea	22.7 ± 13.3	21.1 ± 11.8	0.37

Variables	Minimum	Maximum	P-Value
Bladder capacity	80	250	0.05

Operative details			
Variables	Minimum	Maximum	Mean ± Standard Deviation
Operative time	80	240	170.5 ± 52.2
Hospital stay	5	6	4.9 ± 1.1
Duration since surgery (years)	0.03	4.2	1.0 ± 1.3

Free Paper: Neurogenic Bladder/Hypospadias

A Nomogram to Predict Urethral Plate Transection in Hypospadias: A Prospective Multicenter Study

Pei Liu, Jiayi Li, Hongcheng Song, Weiping Zhang

Department of urology,Beijing Children's Hospital

Objectives To develop a preoperative nomogram to predict urethral plate transection (UPT) and assess the severity of hypospadias, to assist in choosing surgical techniques and improving preoperative parental counseling.

Patients and Methods We prospectively collected the clinical data of hypospadias patients who underwent urethroplasty from 2018 to 2020 at the National Center for Children's Health (NCCH) and sixteen tertiary referral institutions in China. Data from NCCH were used to develop the preoperative nomogram. The nomogram was internally validated by 10- fold cross-validation and externally validated by the multicenter cohort.

Results A total of 584 patients in the NCCH cohort and 511 patients in the multicenter cohort were included. The UP width (odds ratio [OR]: 0.49; 95% confidence interval [CI]: 0.42–0.57), preoperative meatus position (OR: 2.65; 95% CI: 2.25–3.13), and preoperative curvature (OR: 1.08; 95% CI: 1.07–1.10) were selected to fit the nomogram (Plate-Meatus-Curvature, PMC model). The nomogram was well- calibrated. The receiver operating characteristic analysis illustrated the area under the curve was 0.924 (95% CI: 0.845–0.998) in the NCCH cohort and 0.879 (95% CI: 0.845–0.998) in the multicenter cohort. Decision curve analyses revealed great clinical utility. Furthermore, we identified 120.0 as a cut-off value of nomogram points to discriminate patients between severe and non-severe groups. A larger proportion of proximal hypospadias treated with transverse preputial island flap urethroplasty or two-stage procedures in the severe group than that in the non-severe group. In the NCCH cohort, the postoperative complication (grade IIIb according to the Clavien-Dindo system) rate in the severe group was significantly higher than those in the non-severe group ($P < 0.001$).

Conclusions The preoperative PMC model showed good performance for predicting UPT in hypospadias surgery. Furthermore, we identified a cut- off point for describing the severity of hypospadias, which correlate with postoperative outcomes.

Free Paper: Neurogenic Bladder/Hypospadias

Spongioplasty with Buck's Fascia as the Coverage of the Dorsal Inlay Graft Urethroplasty for Primary Hypospadias Repair

Ting Zhang, Xu Cao, Xiangming Yan, Yunli Bi, Mingcu Fu, Qianwei Xiong, Cao Wang, Enfu Huang, Yun Zhou

Department of Urology, Children's hospital of Soochow University, Jiangsu, P.R. China

Background Neourethral covering is an essential technique for preventing complications such as fistula and the glans dehiscence in hypospadias repairs. The spongioplasty have been reported for neourethral coverage about 20 years ago. However, reports of the outcome are limited. This study aims to retrospectively evaluate the short-term outcome of spongioplasty with Buck's fascia for coverage of the dorsal inlay graft urethroplasty (DIGU) and comparing this technique with the classic single layer dartos fascia covering the tubularized incised plate urethroplasty (TIPU) in the same population.

Methods From December 2018 to December 2020, 100 patients with primary hypospadias (median age at surgery, 36 months; range, 8 months–12 years) were treated by a single pediatric urologist. The patients underwent spongioplasty with Buck's fascia covering the DIGU (DIGU group) or single layer dartos fascia covering the TIPU (TIPU group) procedure. The patients were followed up for 12 to 24 months wherein the complications were noted, and postoperative uroflowmetries at the one-year follow-up time was evaluated.

Results The penis length, glans width, urethral plate width and length, and the location of the meatus of the two groups were compared. No statistical difference was found. In the DIGU group, 3 patients had coronal fistulae and no glans dehiscence (3/50), and the mean±SD Qmax was 8.1±3.8 ml/s. In the TIPU group, 9 patients had coronal fistulae and 3 had glans dehiscence (12/50), and the mean±SD Qmax was 6.5±3.4 ml/s. Statistically significant differences were observed in the complication rates and Qmax between the two groups ($p<0.05$).

Discussion

This study estimated the short-term outcome of the DIGU covered using spongioplasty with Buck's fascia as the second layer in the primary hypospadias with relatively small glans (average width <14mm). The complications rate of 24% (12/50) in the TIPU group was like that reported for the small glans TIPU procedure. However, reports that emphasize the DIGU procedure performed on relatively small glans are limited. The major limitations of this study were the short follow-up time and the retrospective data collection.

Conclusions Dorsal inlay graft urethroplasty combined with spongioplasty with Buck's fascia as the coverage is an effective procedure. In our study, this combination had a lower complication rate than tubularized incised plate urethroplasty with single-layer dartos fascia as the coverage for primary hypospadias repair.

Table: Summary of the findings of 100 primary hypospadias patients.

Parameters	DIGU	TIPU	P value
Patients	50	50	
Age at surgery (months)	37.5±33.4	34.8±30.1	0.879
Length of penis(mm)	48.6±8.4	48.4±9.2	0.972
Width of glans (mm)	12.92±1.86	12.90±2.68	0.574
Width of urethral plate (mm)	4.98±1.07	5.64±1.76	0.058
length of urethral plate (mm)	18.8±4.9	20.5±4.7	0.074
Complications after 12 months	3 fistula (3/50)	9 fistula, 3 dehiscence (12/50)	0.012*
Q*max* after 12 months (ml/s)	8.13±3.83	6.49±3.39	0.008*

Free Paper: Neurogenic Bladder/Hypospadias

Urethroplasty of Midscrotal Cicada Wing Flap in the Repair of Residual Type IV Curvature after Hypospadias Surgery

Xuejun Wang, Yu Mao, Daorui Qin, Bo Yang, Boya Li, Shaoji Chen,Yunman Tang

Department of Pediatric Surgery, Sichuan Provincial People's Hospital, University of Electronic Science and Technology of China, Chengdu, China

Objective To investigate the application and efficacy of urethroplasty of midscrotal cicada wing flap in the repair of residual type IV curvature after hypospadias surgery.

Methods From January 2018 to November 2020, the clinical data of 5 patients who underwent urethroplasty with midscrotal cicada wing flap for residual type IV curvature after hypospadias surgery were retrospectively analyzed. The age ranged from 5 years and 11 months to 14 years and 7 months, with an average age of 9 years and 6 months. All the patients had residual type IV curvature, and concomitant glans ischemia in 1 case, glans dehiscence in 1 case, urethral fistula in 2 cases and urethral stricture in 1 case. The main causes of residual type IV curvature included misjudgment of the cause of curvature in the previous operation in 2 cases, incomplete curvature correction in the previous operation in 1 case, and urethral contracture in the previous reconstruction in 2 cases. No reconstruction materials were available around the urethra in all patients (no residual foreskin cap on the dorsal side and no residual extendable skin on the penis), but the midscrotal flap was intact. Postoperative follow-up included urine flow rate, complications related to urethral reconstruction and recurrence of curvature.

Results No patients were lost to follow-up. The follow-up time was 15-49 months (mean, 24 months). All operations were completed in one stage. The length of the reconstructed urethra was 3.0-5.5cm, with an average length of 4.2cm. Penile retraction in 1 and urinary line spraying(improved spontaneously 3 months after operation)in 1 occurred during postoperative follow-up. There was no recurrence of curvature, urethral hair growth and other complications. The maximum urine flow rate was 12.1-20.6mL/s (mean, 16.6mL/s) at 3 months after operation. One case of urethral stricture was confirmed to be relieved by VCUG after operation, but there was still bladder emptying disorder, and the average residual urine volume was 20ml after repeated examination. The HOSE score was 10-16 (mean, 12.5)at 3 months after surgery.

Conclusions Urethroplasty of midscrotal cicada wing flap can be used as an alternative surgical method to repair residual type IV curvature when the quality and quantity of other reconstruction materials are seriously insufficient but the midscrotal flap is intact. Short-term results are good, but long-term follow-up is needed.

The 22nd Congress of
Asia-Pacific Association of Pediatric Urologists
(APAPU 2022)

2022

My Experiences of Nightmare Complications

Philip Ransley (United Kingdom)

Decreased Renal Function after Ureteral Reimplantation in a Patient with Bilateral Ectopic Ureter	**Yong Seung Lee** (Korea)
Urethral Atresia with Chronic Renal Failure	**Sang Woon Kim** (Korea)
Jj Stenting after Pyeloplasty: Is It So Simple?	**Kobiljon Ergashev** (Uzbekistan)

The 22nd Congress of
Asia-Pacific Association of Pediatric Urologists
(APAPU 2022)

2022

Non-moderator E-Poster

P-01

Dysuria Due to Annular Hyperplasia of the Bladder Neck in a Female Child

Yanze Wang, Guoqiang Du, Rongde Wu, Wei Liu

Department of Pediatric Surgery, Shandong Provincial Hospital Affiliated to Shandong First Medical University

Introduction Polypoid cystitis are rare benign lesions of the bladder neck which is associated with indwelling urethral catheters. The most frequent cited symptoms of polypoid cystitis include bladder obstruction, gross hematuria, painful urination and voiding dysfunction. Persistent dysuria after catheter removal is rare in children. Retrospectively reviewing the diagnosis and treatment of a case of dysuria due to annular hyperplasia of the bladder neck in a female child, to summarize the clinical characteristics and treatment experience.

Case This is a case of a 6-year-old female child who presented persistent dysuria more than 3 months after catheter removal, while she had no history of dysuria before catheterization. The patient underwent urological investigation. The results of urine routine and urine culture showed normal. Ultrasound examination of the urinary system showed that the bladder neck protruded into the lumen with a nodular echo of about 1.3x1.2x1.1cm, and the urethra seemed to cross the tumour. Urodynamic examination suggested bladder outlet obstruction. The rigid cystoscopy identified that there was annular protrusive lesion in mucosa of bladder neck. No specific lesions were found in the above examinations. Finally the gas-bladder laparoscopic examination revealed a bright red papillary lesion with broad base floating around internal urethral orifice. The patient underwent d gas-bladder laparoscopic resection of the bladder tumor. Pathological examination described the lesion were acute and chronic inflammation of mucosa, accompanied by interstitial edema, vascular hyperplasia, congestion and bleeding. The pathological changes were similar to polypoid or papillary cystitis.

Conclusion Papillary and polypoid cystitis are benign lesions, and it is rarely reported in children. The etiology is associated with indwelling urethral catheters. To our knowledge, this is the first case of polypoid and papillary cystitis involved the entire neck of bladder presenting with dysuria in a female child to be reported in the literature.

P-02

Technical Advantages of Modified Day Surgical Procedures for Penile Reconstructive Surgery over Inpatient Procedures and Standard Day Surgical Procedures

Haoxuan Yang[1], Shengjie Fu[2], Mingxuan Yang[1], Yaxuan Wang[1], Wenyong Xue[1], Lei Du[1], Ziyue Ma[1], Lin Zhang[1], Jinchun Qi[1]

[1]Department of Urology the Second Hospital of Hebei Medical University. No.215 Heping West Road, Xinhua District, Shijiazhuang City, Hebei Province, China,
[2]PICU Hebei Children's Hospital No.133 Jianhua South Street, Yuhua District, Shijiazhuang City, Hebei Province, China

Background The modified day surgical procedure was compared with traditional inpatient procedures and standard day surgical procedures to explore the technical advantages of the modified day surgical procedures.

Methods The clinical data of 135 children who underwent the day operation (the day group) and 101 children who underwent the traditional inpatient procedures (the inpatient group) were collected in the Second Hospital of Hebei Medical University. The patients' satisfaction surveys were divided into three groups: standard process group, modified process group, and inpatient group. The standard and modified process groups form the day surgical group. The degree of satisfaction among the groups was compared.

Results The average ages of the inpatient group and the day surgical group were 8.92 years old and 11.85 years old, respectively. There was no significant difference between these two groups in operation time, bleeding volume, and postoperative complications ($P>0.05$). Compared with the inpatient group, the average inpatient time and the hospitalization cost of the day group decreased by 69% and 27%, respectively ($P<0.05$). The patient's family members in the modified procedure group had the highest satisfaction among the three groups.

Conclusion The penile reconstructive plastic performed by modified day surgical procedures has advantages over the standard and traditional inpatient surgical procedures. The modified day surgical procedure benefits both hospitals and patients, which is suitable to be popularized on a large scale.

P-03

Undescended Testis: Characteristic and Management in Makassar, Indonesia

Muhammad Asykar Palinrungi

Division of Urology, department of Surgery, Faculty of Medicine, Hasanuddin University, Makassar, Indonesia

Background Undescended testicle (UDT) is a disorder in which one or both testicles are not found in the scrotum. This condition is the most common genital abnormality found at birth. The diagnosis of UDT can be made by physical examination, if it cannot be palpated, a laparoscopy can be performed to determine the presence of the testes and an orchidopexy can be performed directly.

Methods This is a retrospective descriptive study from three teaching hospitals in Makassar from 2013 to 2021. We reviewed medical data from 80 children under 18 years of age who presented to our institution with the chief complaint of one or both testicles being absent in the scrotum. The data we took was the patient's age, the side of the absent testicle, the location of the testicle, accompanying congenital abnormalities, and surgical procedures.

Results Of the 80 cases, the most UDT was on the right side (40.26%), where the age group of 11-18 years was the highest (36.36%). From the study data, 88.31% are testicles that can be found by a physical examination in the high scrotum (48.05%) and the inguinal canal (40.26%). Inguinal hernia (15.58%) was the most common comorbid congenital abnormality, and conventional orchidopexy (75.32%) was the most performed procedure.

Conclusion Testicular undescended cases are often accompanied by other congenital abnormalities, and there are still quite a few who arrive late to the hospital for treatment.

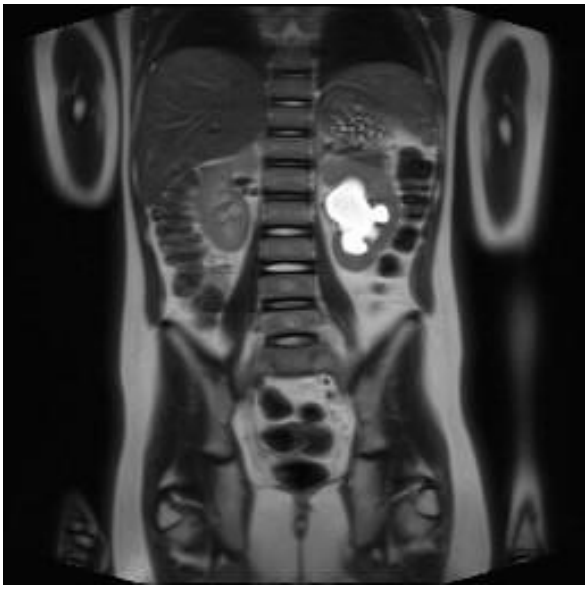
P-04

A Rare Case of Idiopathic Retroperitoneal Fibrosis in a Pediatric Patient

Dainiel Edgar A. Reyes, Neddy L. Lim

Jose Reyes Memorial Medical Center

In this paper, an 11 year old male presented with vague abdominal pain with radiation to the flank area. Malignancy (Lymphoma vs Sarcoma) was initially considered however on further workup, histopathology reports pointed to a fibrotic mass in the retroperitoneum with an idiopathic cause. The patient was managed with cystoscopy, double J stent insertion and was conservatively given medical management with methotrexate and steroids treatment. This case report highlights the rarity of retroperitoneal fibrosis in the pediatric age and the importance of diagnosis of this condition even in the pediatric age group to prevent early complications. A urologist must always remain vigilant in including it as a differential diagnosis when faced with a similar set of signs, symptoms and imaging findings.



P-05

Efficacy of Dextranomer/ Hyaluronic Acid Copolymer (DX/ HA) Injection in Management of Vesicoureteral Reflux in Children- A Paradigm Shift in the Management

Sharjeel Saulat, Jahanzeb Sheikh, Syed Saeed Uddin Qadri, Dur Amin, Mansoor, Hamza Ashraf

Tabba Kidney Institute, Pakistan

Objective VUR is one of the most common congenital urological diseases causing Hydronephrosis in children, resulting in significant morbidity ranging from recurrent UTIs to Renal scarring. In this study we will evaluate the efficacy of Deflux Injection in treating various grades of VUR, its cost effectiveness and its different techniques.

Method This is a prospective, cross-sectional study. Patient with Primary VUR, Grade I, Grade II, Grade III VUR, and patient with American Society of Anesthesiologists (ASA) i, ii were included in the study. Statistical package of social sciences (SPSS) version 23 was used to enter, sort, and analyze the data. Descriptive characteristics included age, gender, weight, and height were analyzed in mean ± standard deviation. Independent variables were analyzed with frequency. Post-operative complication, success rates were analyzed as end point of study.

Results The gender distribution of participants was 5 (23.8%) males and 16 (76.1%) females with mean weight measuring as 17.5 ± 8.3Kgs. Post-operative ultrasonography results indicated 100% resolution in Grade I and II VUR, while 75% resolution in Grade III VUR, 50% resolution in Grade IV VUR, whereas 25% resolution in Grade V VUR. Overall results regarding UTIs, HDN, and symptoms are elaborated in Table 05 and indicated that Grades I and II had 100% resolution in both groups. Grade III had 95% resolution, while Grade IV and V showed 93% resolution and 66.6% resolution respectively. Overall results regarding UTIs, HDN, and symptoms are elaborated in Table 05 and indicated that Grades I and II had 100% resolution in both groups. Grade III had 95% resolution, while Grade IV and V showed 93% resolution and 66.6% resolution respectively.

Conclusion Our study shows that endoscopic injection of Dextranomer/Hyaluronic acid copolymer in treating VUR has overall good and comparable success rates in grade I to grade iv VUR with open surgery. For grade V VURs, patients and parents can be counselled that this procedure has a 60% success rate and due to its minimal invasiveness can be undertaken with no extra added risks if further laparoscopic or open surgery is required later on.

Demographics (n=21)		
Variables		Mean ± St. deviation
Age (years)		4.9 ± 3.4 (10.9)
Weight (Kgs)		17.5 ± 8.3 (26.9)
Gender	Male	5 (23.8%)
	Female	16 (76.1%)
Laterality	Unilateral	8 (38.1%)
	Bilateral	13 (61.9%)
Antenata	Yes	2 (9.5%)
	No	19 (90.4%)
HB		11.1 ± 1.6 (5.9)
Hematocrit		32.4 ± 3.6 (12)
TLC		10.4 ± 5.4
PLT		344 ± 107.1
Urea		21.1 ± 8.0
Creatinine		0.4 ± 0.1 (0.6)

Pre and post procedure symptoms and resolution rate (n=34)				
Variables	MCUG Grading	Pre-OP Symptoms	Post-Op Symptoms	Resolution
VUR Grading (n=34)	G I (n=3)	Present (n=3)	Resolved (n=3)	100%
	G II (n=9)	Present (n=9)	Resolved (n=9)	100%
	G III (n=14)	Present (n=14)	Resolved (n=13)	90%
			No resolved (n=1)	
	G IV (n=5)	Present (n=5)	Resolved (n=4)	80%
			No resolved (n=1)	
	G V (n=3)	Present (n=3)	Resolved (n=1)	33%
			No resolved (n=2)	

Overall success rates combining all outcome variables						
Variables	MCUG Grading	Resolution of Symptoms	Resolution of UTI	Resolution of HDN	Success rate	Resolution
VUR Grading (n=34)	G I (n=3)	100%	100%	100%	100%	100%
	G II (n=9)	100%	100%	100%	100%	100%
	G III (n=14)	95%	100%	95%	100%	95%
	G IV (n=5)	100%	90%	90%	90%	93%
	G V (n=3)	67%	67%	67%	67%	67%

The 22nd Congress of Asia-Pacific Association of Pediatric Urologists (APAPU)

Hosted by. Asia-Pacific Association of Pediatric Urologists

APAPU 2022 Organization
President : Kun Suk Kim

APAPU 2022 Secretariat's Office
Gaon Convention Services, Inc.
Room 301, 347, Hwagok-ro, Gangseo-gu, Seoul, Republic of Korea.
T. +82.2.6956.7967 F. +82.70.8668.1019 Email. gaonpco@gaonpco.com

References

1)**제품설명서 미니린멜트 | 효능효과** 일차성 야뇨증(5세이상), 야간다뇨와 관련이 있는 야간뇨증상의 치료(성인에 한함) **용법용량** 일차성 야뇨증(5세이상) : 취침시 초산데스모프레신으로서 0.2mg을 경구투여한다. 효과가 충분하지 않을 경우 0.4mg까지 증량할 수 있다. 치료의 지속여부는 투여 3개월 후 적어도 1주일간 투여를 중지한 상태에서 결정한다. 야간다뇨와 관련이 있는 야간뇨증상의 치료(성인에 한함) : 취침시 초산데스모프레신 0.1mg을 경구투여한다. 일주일 후에도 효과가 충분하지 않을 경우 0.2mg으로 증량하고, 계속하여 효과가 충분하지 않으면 일주일 간격으로 증량하여 0.4mg까지 사용할 수 있다. 용량결정 후 4주이내에도 임상적인 효과가 없을 경우 투여를 중지한다. **사용상 주의사항** 1. 경고 다음 및 고령자에서는 저나트륨혈증, 수분 중독으로 인해 혼수 등을 일으킬 수 있으므로 이를 예방하기 위하여 갈증을 없앨 정도만 수분을 섭취하도록 주의한다. 2. 다음 환자에는 투여하지 말 것. 1) 이 약 및 이 약 성분에 과민증의 병력이 있는 환자 2) 습관성 및 심리적 번갈 다음증 환자(뇨량이 24시간동안 40mL/kg를 초과하는 경우) 3) 대상기능장애성 심부전 환자 4) 이뇨제를 복용중인 환자 5) 신성 요붕증 환자 6) 이 약은 야뇨증 치료시 정상혈압환자에만 투여한다. 7) 중등도 및 중증 신부전 환자 (크레아티닌 클리어런스 50ml/분 미만) 8) 항이뇨호르몬 분비과잉 증후군 (SIADH) 9) 저나트륨혈증으로 확진된 환자 3. 다음 환자에는 신중히 투여할 것. 1) 고혈압을 수반하는 순환기 질환, 중증의 동맥경화증, 관상동맥혈전증 환자(혈압을 상승시켜 증상을 악화시킬 수 있다) 2) 만성 신질환 환자 3) 임부 또는 임신하고 있을 가능성이 있는 부인 4) 소아 및 고령자 5) 수분 및 전해질의 불균형을 초래할 질환 환자 및 뇌내압이 증가할 위험이 있는 환자 6) 낭성 섬유증과 같이 수분 및 전해질 불균형과 관련된 질환을 가진 환자(저나트륨혈증을 일으킬 수 있다) 7) 절박요실금, 기질적 원인으로 인한 배뇨빈도 혹은 야간뇨 증가 (예를 들어 양성 전립선비대(BPH), 요로감염, 방광결석/종양), 조갈증 그리고 적절히 조절되지 않은 당뇨병 등이 있는 환자에 대하여는 그 원인질환을 치료하도록 한다. 4. 이상반응 1) 특히 다음과 고령자에서 혼수, 경련, 체중증가 등을 수반하는 중증의 수분중독 및 저나트륨혈증이 나타날 수 있다. 2) 야뇨증환자에서 보고된 부작용은 다음과 같다: 알러지반응, 저나트륨혈증, 감정적 장애, 두통, 복통, 구역, 알러지성 피부반응 3) 야간뇨 환자에 대한 임상시험에서 부작용을 보고한 환자의 35%는 용량 조절중에 부작용을 나타내었으며 보고된 부작용은 다음과 같다: 저나트륨혈증, 두통, 현기증, 말초부종, 빈뇨, 복통, 구역, 구갈 체중증가 5. 일반적주의 1) 부신피질 자극 부전의 경우 수분 독성을 피하기 위해 조회 투여 후 및 투여 중 주의한다. 2) 수분의 섭취는 이 약 투여 전 1시간에서 투여 후 8시간까지 제한되어야 한다. 단, 신기능 진단시 수분의 섭취는 이 약 투여 전 1시간에서 투여 후 12시간까지 최대 0.5L로 제한한다. 수분섭취를 제한하지 않으면 수분저류 그리고/혹은 저나트륨혈증이 나타날 수 있다. (두통, 구역/구토, 체중증가 그리고 심각한 경우 경련) 3) 임상시험에서 65세이상 환자에서 저나트륨혈증 발생률이 더 높게 나타났다. 그러므로, 고령 환자, 특히 수분 혹은 전해질 불균형을 초래할만한 질환을 가진 환자에게 치료를 시작하는 것은 권장되지 않는다. 고령환자, 저혈청나트륨 수치를 나타내는 환자 그리고 24시간 축적 배뇨량이 많은 환자(2.8-3L이상)에서 저나트륨혈증의 위험이 높다. 고령환자에서 치료가 고려되어야 한다면 치료시 직전 그리고 시작 후 3일 혹은 용량증가시 그리고 투약중 필요시에 혈청나트륨을 측정하여야 한다. 만일 수분저류 그리고/혹은 저나트륨혈증의 증상(두통, 오심, 구토, 몸무게 무게증가 및 경련등)이 나타나면 환자가 완전히 회복될 때까지 투약을 중단하여야 한다. 치료를 다시 시작할때는 철저한 수분 섭취 제한이 필요하다. 4) 야간뇨 환자에게 야간다뇨를 진단하기 위해 치료 시작전 적어도 2일동안 배뇨횟수/배뇨량 기록지를 기록하여야 한다. 야간뇨 생성량이 기능적 방광용적을 초과하거나, 24시간 축적 뇨량의 1/3을 초과하면 야간다뇨로 간주된다. 5) 전신감염, 발열, 위장관염증과 같이 수분 혹은/그리고 전해질 불균형이 나타날만한 급성 간헐성 질환을 앓는 동안에는 투약을 중지하여야 한다. 6) 이 약은 운전이나 기계조작능력에 대해서는 아무런 영향이 없다. 6. 상호작용1) 이 약의 수축작용은 항이뇨 작용에 비해 매우 낮으나 이 약 고용량을 다른 수축제와 병용투여시 환자를 충분히 관찰한다. 2) 이 약과 삼환계 항우울약, 염산이미프라민 병용에 의해 저나트륨혈증성 경련발작이 보고되었으므로 혈청 나트륨, 혈장삼투압 등을 모니터링한다. 3) 클로르프로마진, 카르바마제핀, 클로피브레이트, 클로프로파미드, 인도메타신, 프로스타글란딘 합성 효소 억제제는 항이뇨 작용을 증가시켜 수분저류의 위험성을 증가시킬 수 있다. 4) 글리벤크라미드와 병용투여시 항이뇨 작용은 감소될 수 있다. 5) 옥시토신과 병용투여시 항이뇨 작용 상승 및 자궁 혈액 공급의 약화를 일으킬 수 있다. 6) 비스테로이드성 소염진통제를 동시에 투약하는 경우 수분섭취제한과 혈청나트륨 모니터링을 포함하여 저나트륨혈증을 피하기 위한 주의가 필요하다. 7) 로페라마이드(loperamide) 병용 투여시 데스모프레신 혈장농도가 약 3배 상승하여 수분저류/저나트륨혈증의 위험성을 증가시킬 수 있다. 8) 디메티콘(dimeticone) 병용 투여시 데스모프레신 흡수 감소를 가져올 수 있다. 9) 이 약은 사람의 마이크로좀으로 수행한 in vitro시험에서 어떠한 상당한 간 대사도 겪지 않는 것으로 보이므로, 간 대사에 영향을 주는 약물과 상호작용이 없는 것 같다(in vivo연구는 실시되지 않음) 10) 이 약과 동시에, 혹은 투약 한시간반 이전에 27% 지방이 든 표준식사를 할 경우 데스모프레신 흡수율과 속도가 약 40% 감소되었다. 그러나 약물역학 (뇨생성 혹은 삼투압) 측면에서 큰 영향은 관측되지 않았다. 11) 음식물섭취는 약물의 흡수를 감소시키므로 항상 음식물섭취와 관련하여 동일 시간에 투약한다. 7. 임부 및 수유부에 대한 투여 1) 임부에 대하여는 드물게 자궁수축효과가 나타날 수 있으므로 주의한다. 2) 동물의 생식시험에서 태자에 대한 유해작용은 없었다. 임부의 요붕증 치료에서도 태아에 대한 유해작용은 보고되지 않았으나 사용경험이 충분치 않으므로 임부 및 임신하고 있을 가능성이 있는 부인에는 치료상의 유익성이 위험성을 상회한다고 판단되는 경우에만 투여한다. 3) 이 약의 과량투여시(300μg 비강투여시) 많은 양이 유즙으로 이행되고 수유중 투여의 안전성이 확립되지 않았으므로 수유부에게 투여하는 경우 수유를 중단하는 것이 바람직하다. 8. 과량투여시의 처치 1) 증상 : 수분체류와 저나트륨혈증의 위험성이 증가되어 두통, 냉감, 구기, 경련, 의식상실 등이 나타날 수 있다. 2) 처치 : 증상에 따라 투여횟수 또는 용량을 줄이고 수분을 제한한다. 이 약에 대해 특별한 해독제는 없으나 중증의 수분저류시 등장 또는 고장 식염수 주입한다. 수분저류가 심각할 경우(경련, 의식상실 등) 푸로세미드와 같은 이뇨제를 투여한다.

2) Everaert, *et al.* ICH consensus, *Neurourology and Urodynamics*. 2019.

과민성방광 1차 치료제[1)2)]

"미라벡으로 시작하세요"

미라벡서방정 50mg

(미라베그론)

- 우수한 증상 개선 효과[3)4)]
- 항무스카린제 대비 이상반응 감소[5)]
- 우수한 치료 지속도/삶의 질 개선[6)7)]

Hanmi 한미약품

HM-Design 2005_01

References

1) Gormley EA, Lightner DJ, Burgio KL, et al. Diagnosis and Treatment of Overactive Bladder (Non-Neurogenic) in Adults: AUA/SUFU Guideline 2019. 2) 과민성방광 진료지침서(3판). 대한배뇨장애요실금학회 2016. 3) Yamaguchi O, Marui E, Kakizaki H, et al. Phase III, Randomised, Double-Blind, Placebo-Controlled Study of the β3-adrenoceptor Agonist Mirabegron, 50 mg Once Daily, in Japanese Patients With Overactive Bladder. BJU Int. 2014;113(6):951-960. 4) Serati M, Maggiore U, Sorice P, et al. Is mirabegron equally as effective when used as first- or second-line therapy in women with overactive bladder? Int Urogynecol J. 2017;28(7):1033-1039. 5) Chapple CR, Cruz F, Cardozo L, et al. Safety and Efficacy of Mirabegron: Analysis of a Large Integrated Clinical Trial Database of Patients with Overactive Bladder Receiving Mirabegron, Antimuscarinics, or Placebo. Eur Urol. 2020;77(1):119-128. 6) Kato D, Uno S, Schyndle JV, et al. Persistence and adherence to overactive bladder medications in Japan: A large nationwide real-world analysis. Int J Urol. 2017;24(10):757-764. 7) Freeman R, Foley S, Arias JR, et al. Mirabegron improves quality-of-life, treatment satisfaction, and persistence in patients with overactive bladder: a multi-center, non-interventional, real-world, 12-month study. Curr Med Res Opin. 2018;34(5):785-793.

MIR-II-2005-01

Betmiga®
mirabegron

女생

꿈많은 나이,
OAB가 방해될 땐 BETMIGA

베타미가는 65세 이상 고령 환자에서 24시간 배뇨 횟수, 요실금 횟수를 위약 대비
유의미하게 감소시켰으며, **인지기능(MoCA score)의 유의미한 변화는 발생하지 않았습니다.**[1]

*본 연구에서 Randomized된 환자 중 Placebo군의 73%, Mirabegron군의 71%는 여성

Reference. 1. Wagg A. Efcacy, safety, and tolerability of mirabegron in patients aged 65yr with overactive bladder wet: a phase IV, double-blind, randomised, placebo-controlled study (PILLAR). *Eur Urol* . 2019 Nov 13. pii: S0302-2838(19)30768-7.

사용상의주의사항

1. 다음의 환자에는 투여하지 말 것 1) 이 약의 주성분 또는 다른 성분에 과민증이 있는 환자 2) 중증의 조절되지 않는 고혈압 환자 (수축기 혈압 ≥180mmHg 및/또는 이완기 혈압 ≥110mmHg) 3) 심각한 심장질환 환자(협압 상승 등의 사례가 보고되었기 때문에 중상이 악화될 수 있다.) 2. 다음의 환자에는 신중히 투여 할 것 1) 선천성 또는 후천성 QT 연장 환자 (4)상반적 증이 환자) 이 약은 치료용량 하에서 임상시험 결과 QT 연장과 임상적 관련성이 없는 것으로 밝혀졌다. 하지만 임상시험에 QT 연장 병력이 있거나 QT 연장 가능한 약물을 복용중인 환자가 포함되지 않았으므로, 이러한 환자들에 대한 이 약의 효과는 알려진 바가 없고, 따라서 이 약을 투여 시 주의를 기울여야 한다. 2) 이 약은 아래 환자군에 대해서는 연구되지 않았으므로 투여가 권장되지 않는다. - 말기 신장 질환 환자 (GFR <15mL/min/1.73m²또는 혈액투석을 요하는 환자) - 중증의 간장애 환자 (Child-Pugh class C) 3) 이 약은 효소저해제와 상호작용이 있으므로 아래 환자군에서는 투여가 권장되지 않는다. - 강력한 CYP3A4 저해제를 병용투여중인 중증의 신장애 환자 (GFR 15 ~ 29mL/min/1.73m²) - 강력한 CYP3A4 저해제를 병용투여중인 중등도의 간장애 환자 (Child-Pugh class B) 4) 방광출구폐쇄 환자 및 과민성방광 치료를 위해 항무스카린 제제를 복용중인 환자 (4. 일반적주의 참조) 3. 이상반응 1) 외국임상시험에서 보고된 이상반응 : 8433명의 과민성방광 환자들이 임상시험에서 이 약을 투여받았다. 이 중 5648명은 2/3상 임상시험에서 적어도 1회 이 약을 복용했고, 622명의 환자들은 적어도 1년(365일) 이상 이 약을 복용했다. 3 개월 12주 3상 이중 눈가림 위약 대조 시험들에서 환자 중 88%가 이 약 투여를 완료했고, 환자 중 4%는 유해사례 때문에 중단했다. 대부분의 이상반응은 중 ~ 경증으로 분류되었다. 하지만 임상시험에 QT 연장 병력이 있거나 QT 연장 가능한 약물을 복용중인 환자가 포함되지 않았으므로, 이러한 환자들에 대한 이 약의 효과는 알려진 바가 없고, 따라서 이 약을 투여 시 주의를 기울여야 한다. 2) 이 약은 아래 환자군에 대해서는 연구되지 않았으므로 투여가 권장되지 않는다. - 말기 신장 질환 환자 (GFR <15mL/min/1.73m²또는 혈액투석을 요하는 환자) - 중증의 간장애 환자 (Child-Pugh class C) 3) 이 약은 효소저해제와 상호작용이 있으므로 아래 환자군에서는 투여가 권장되지 않는다. - 강력한 CYP3A4 저해제를 병용투여중인 중증의 신장애 환자 (GFR 15 ~ 29mL/min/1.73m²) - 강력한 CYP3A4 저해제를 병용투여중인 중등도의 간장애 환자 (Child-Pugh class B) 4) 방광출구폐쇄 환자 및 과민성방광 치료를 위해 항무스카린 제제를 복용중인 환자 (4. 일반적주의 참조) 3. 이상반응 1) 외국임상시험에서 보고된 이상반응 : 8433명의 과민성방광 환자들이 임상시험에서 이 약을 투여받았다. 이 중 5648명은 2/3상 임상시험에서 적어도 1회 이 약을 복용했고, 622명의 환자들은 적어도 1년(365일) 이상 이 약을 복용했다. 3 개월 12주 3상 이중 눈가림 위약 대조 시험들에서 환자 중 88%가 이 약 투여를 완료했고, 환자 중 4%는 유해사례 때문에 중단했다. 대부분의 이상반응은 중 ~ 경증으로 분류되었다. 3 개월 12주 3상 이중 눈가림, 위약 대조 시험 도중 이 약 50mg을 투여 받은 환자들에서 보고된 가장 흔한 이상반응은 변맥(1.2%)과 요로감염(2.9%)이었다. 변맥은 이 약 50mg 투여 환자 중 0.1%에서 투여 중단을 유발했다. 요로감염은 이 약 50mg 투여 환자들에서 투여중단을 유발하지 않았다. 중대한 이상반응은 심방세동(0.2%)을 포함한다. 1년 (장기) 활성대조약(투스카린 길항제) 대조 시험에서 관찰된 이상반응들은 3 개의 12주 3상 이중 눈가림, 위약 대조 시험에서 관찰된 것들과 유형 및 중증도에서 유사했다. 아래 표는 3 개의 12주 3상 이중 눈가림, 위약 대조 임상시험들에서 관찰된 이상반응들을 제시한다.

[표1] 3 개의 12주 3상 이중 눈가림, 위약 대조 시험들에서 관찰된 이상반응

	흔하게 (≥1/100 이고 <1/10)	흔하지않게 (≥1/1,000 이고 <1/100)	드물게 (≥1/10,000 이고 <1/1,000)
감염	요로감염	질 감염	
안과계			안검 부종
심장계	빈맥	두근거림, 심방세동, 혈압 상승	
소화기계		소화불량, 위염	입술 부종
피부 및 피하조직계		두드러기, 발진, 반점발진, 구진발진, 가려움	백혈구파괴성혈관염, 자반
근골격계		관절부종	
비뇨생식기계		외음질염음, 방광염	
대사 및 영양계		γ-GTP 증가, SGOT 증가, SGPT 증가	

2) 아시아 임상시험에서 보고된 이상반응 : 1103명 아시아인의 과민성방광 환자들이 임상시험에서 이 약을 투여받았다. 12주 3상 다기관 무작위 이중 눈가림, 위약 및 활성대조약, 평행군 시험 도중 이 약 50mg을 투여 받은 아시아 환자들에서 보고된 가장 흔한 치료와 관련된 이상반응 (빈도 ≥2.0%)은 구강건조(4.1%)이었다. 이 약 50mg 환자군의 구강건조의 발생빈도는 위약 환자군(4.4%)과 비슷하였다. 하지만 활성대조약 투여 환자군(8.1%) 과 비교 시에는 이 약 50mg 환자군의 구강건조의 발생빈도가 낮다 낮았고, 이는 항무스카린제제의 약리학적 효과와 일치한다. 아래 표는 12주 3상 다기관 무작위 이중 눈가림, 위약 및 활성약 대조, 평행군 시험에서 관찰된 가장 흔한 치료와 관련된 이상반응 (빈도 ≥2.0%)을 제시한다.

[표2] 12주 3상 다기관 무작위 이중 눈가림, 위약 및 활성약 대조, 평행군 시험에서 관찰된 가장 흔한 치료와 관련된 이상반응 (빈도 ≥2.0%)

	위약 (n = 366)	이 약 50 mg (n = 366)	활성대조약(톨터로딘) (n = 371)
전체	63 (17.2%)	58 (15.8%)	79 (21.3%)
소화기계	30 (8.2%)	33 (9.0%)	49 (13.2%)
구강건조	16 (4.4%)	15 (4.1%)	30 (8.1%)

3) 외국 시판후 경험에서 보고된 이상반응 : 다음의 이상반응은 전세계에서 시판 후 자발적으로 보고되었기 때문에 이들 이상반응의 빈도와 이 약과의 인과관계는 확실하게 밝혀지지 않았다. - 신장 및 비뇨기계 : 요저류 · 소화기계 : 오심, 변비, 설사 · 피부 및 피하조직계 : 혈관부종 · 정신계 : 불면증, 착란상태 · 신경계 : 어지러움, 두통

※보다 자세한 제품 정보는 제품설명서 전문을 참조해주십시오. (제품설명서 작성일: 2020년 01월 04일)

ABET-20-A-22020030204

(06164) 서울특별시 강남구 테헤란로 521 파르나스타워 7층 Tel. 02-3448-0504 Fax. 02-3448-0510

astellas

Avoid the stop and go of BPH

THRUPAS® is highly selective α1A -Blocker

THRUPAS® (silodosin), a selective alpha-1 adrenergic receptor antagonist, is indicated for the treatment of the signs and symptoms of benign prostatic hyperplasia (BPH)

✓ 강력하고 신속한 효과
✓ 심혈관계 부작용 최소화
✓ 경제적인 약가

Ref. Chapple et al., Eur Urol. 2011 Mar;59(3):342-52 J Urol. 2009 Jun;181(6):2634-40 EAU guidelines on management of Non-neurogenic male LUTS, incl. BPO (P481~) J Urol 2009 Jun;181(6):2634-40; FDA label

제품요약정보

전문의약품 | 259

제품명	트루패스 구강붕해정 8mg/정 4mg
원료약품 및 분량	1정 중 실로도신 8mg/4mg
효능 및 효과	전립선비대증에 수반하는 배뇨장애 (허가사항 범위를 초과하여 신경인성방광에도 요양급여를 인정함[복지부고시_제 2017-62호])
용법 및 용량	성인에게 1일 1회 8mg을 식사와 함께 경구투여 또는 1일 2회 4mg을 아침 저녁 식후 경구투여
사용상의 주의사항	1. **금기** (1) 이 약의 성분에 과민증 병력 (2) 중증의 신장해 환자[크레아티닌 청소율(CCr)(30mL/min] (3) 중증의 간장해 환자(Child-Pugh score≥ 10) (4) 강력한 CYP450 3A4 저해제 2. **신중투여** (1) 기립성 저혈압이 있는 환자[증상이 악화될 수 있다.] (2) 간기능 장애 환자[혈장 중 농도가 상승하는 것이 보고되었다.] (3) 신기능 장애 환자[혈장 중 농도가 상승하는 것이 보고되었다.] (4) PDE5 저해제를 복용하고 있는 환자 (5) 다른 알파차단제를 복용하고 있는 환자 3. **이상반응** 주로 보고된 이상반응은 사정장애(역행성사정 등), 구갈, 설사 등이었다.
제조원/판매원	JW중외제약 / JW중외제약, JW신약

※ 보다 상세한 제품정보는 제품설명서를 참고하시기 바랍니다. (작성일 2021. 09)

트루패스®

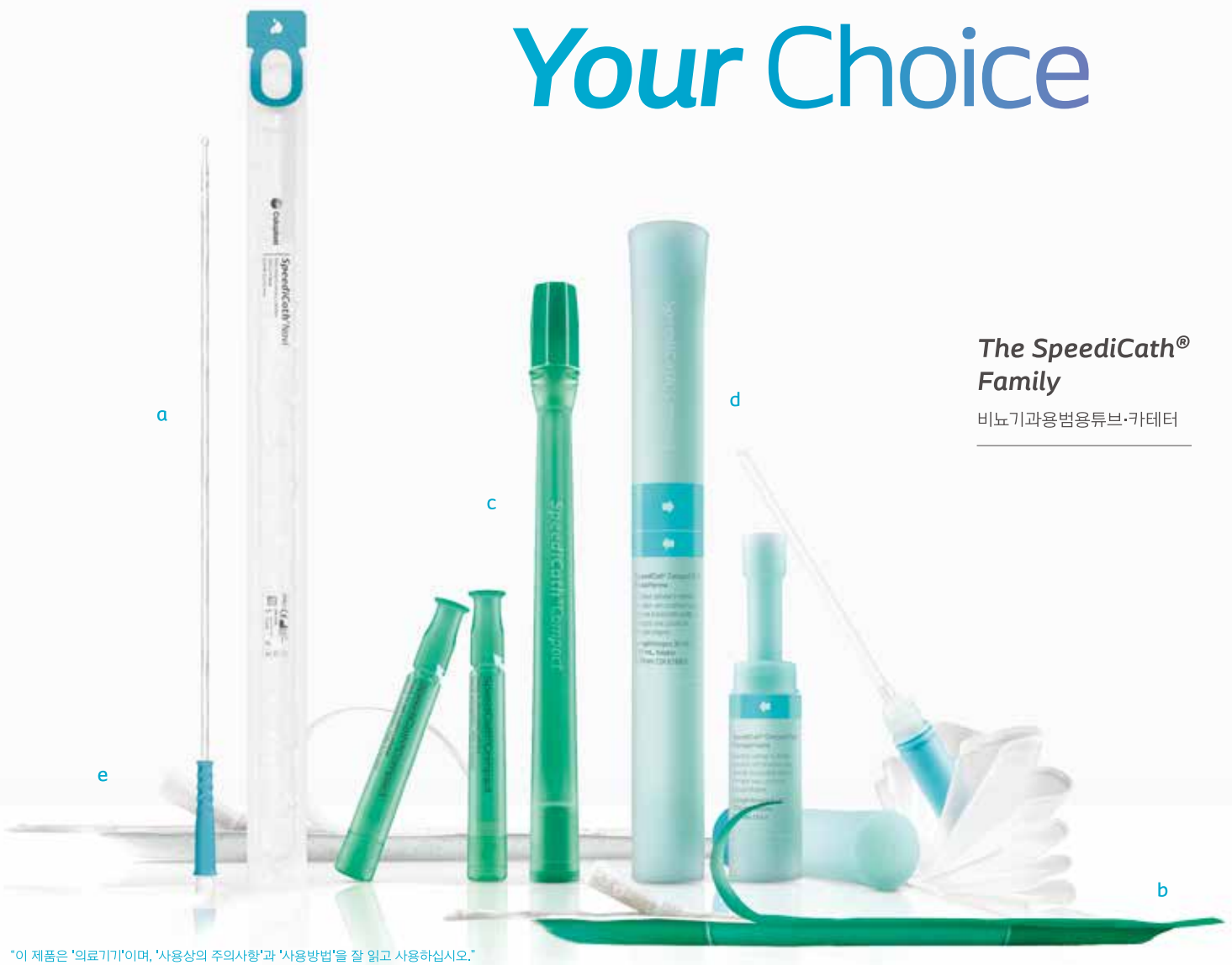
JW 중외제약 | JW 신약


Zydena
밤낮없는 효과를 원하신다면!*
날마다 괜찮을까 걱정된다면!
언제나 가격앞에 망설인다면!
자나깨나
24 HOURS OPEN
ALWAYS WELCOME!
자이데나
자이데나 정
Udenafil

도뇨 카테터, 다양한 선택!

Coloplast

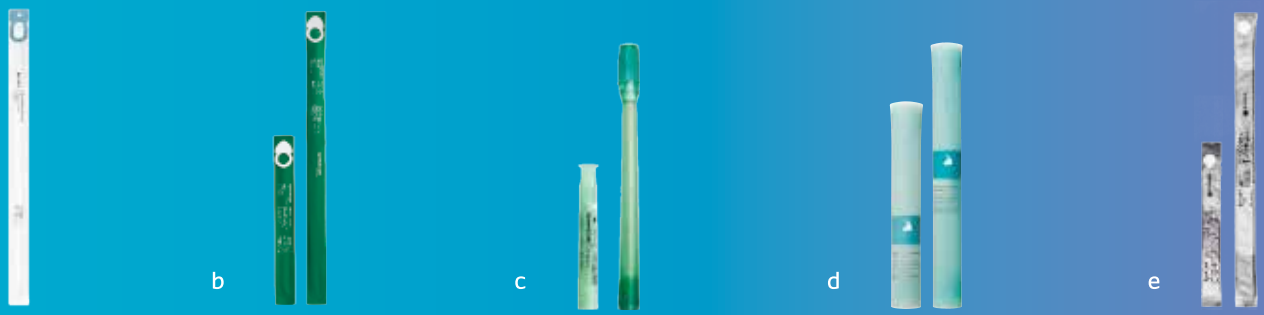
Our Range, *Your* Choice



The SpeediCath® Family

비뇨기과용범용튜브·카테터

"이 제품은 '의료기기'이며, '사용상의 주의사항'과 '사용방법'을 잘 읽고 사용하십시오."



스피디캐스® 네비
(비뇨기과용범용튜브·카테터)

유연하게 휘어지는 Flexible Tip이 달린 카테터

스피디캐스®
(비뇨기과용범용튜브·카테터)

윤활제 필요없이 개봉 후 빠르게 사용이 가능한 카테터

스피디캐스® 컴팩트
(비뇨기과용범용튜브·카테터)

일상생활에 잘 어울리는 디자인으로 휴대가 간편한 카테터

스피디캐스® 컴팩트 세트
(비뇨기과용범용튜브·카테터)

소변주머니가 결합되어 있어 화장실에 가지 않고 도뇨가 가능한 카테터

이지캐스®

가장 전통적인 일회용 친수성 코팅 카테터

Ostomy Care / Continence Care / Wound & Skin Care / Urology Care

Instillagel® 독일 오리지널 전문의약품

인스틸라젤®겔

- 도뇨관(Foley, Nelaton), 의료기기 시술시 발생하는 CAUTI 주원인균을 소독
- Levin tube 등 비위관 삽관시 마취 효과로 환자의 통증감소 및 혈동학적 안정 가능
- 원내 2차감염을 예방

CATH DRESSING

캐스드레싱

POLYO 폴리오

배액관 전용 드레싱 (JP, 헤모박 등)

10cm 7.5cm

옆트임 및 7개의 컷팅으로
다양한 카테터 사이즈에
사용가능

친수성 폴리우레탄폼
사용으로 흡수력 증대

멸균 공정으로 환자의
안전 확보 및 감염 위험 감소

제일메딕스약품
JEILMEDIX PHARMACEUTICAL CO.

문의 070-5118-1820
www.jeilmedix.com

forlax®

생후 6개월 이상 만 8세 미만 **소아 변비 치료제**

Product Information

제품명	forlax® 4g	forlax® 10g
성분 · 함량	1포 중 폴리에틸렌글리콜(Polyethylene glycol) 4000 …… 4g	1포 중 폴리에틸렌글리콜(Polyethylene glycol) 4000 …… 10g
성상	백색의 가루로 과일향이 있으며 물에 녹이면 투명한 액이 되며 오렌지와 그레이프후르트의 약한 산미가 있다.	
효능 · 효과	소아의 변비 증상 치료	성인 및 8세 이상의 어린이 변비 증상 치료
용법 · 용량	• 생후 6개월에서 만 8세의 소아 : 폴리에틸렌글리콜4000으로서 나이에 따라 다음과 같이 복용한다. (일일 복용량은 임상 반응에 따라 적절히 조정가능하다.) – 생후 6개월 ~ 만 1세 → 1포(4g) – 만 1 ~ 4세 → 1 ~ 2포(4 ~ 8g) – 만 4 ~ 8세 → 2 ~ 4포(8 ~ 16g) 이 약을 한 포당 50mL의 물에 녹여서 복용한다. 하루 1포를 복용할 경우 아침에 복용하며, 하루 1포보다 초과하여 복용할 경우 아침과 저녁에 나누어서 복용한다. 이 약의 효과는 복용 후 1 ~ 2일(24 ~ 48시간) 내에 나타난다. 소아에게는 이 약을 3개월 이상 투여하지 않도록 하며, 치료에 의해 유도된 장운동의 회복은 생활습관 및 식이요법으로 유지되어야 한다. 이 약의 투여 전에 기질적인 장애가 있는지를 확인해야 한다. 이 약의 투여로도 증상이 개선되지 않으면 다른 원인을 의심해야 한다. 만 2세 미만 소아에 대한 자료는 제한적이다.	• 성인 및 8세 이상의 어린이 : 폴리에틸렌글리콜4000으로서 1일 10 ~ 20g (1 ~ 2포)을 복용한다. 증상에 따라 특히 어린이는 이틀마다 10g (1포)을 복용할 수 있다. 한 컵의 물에 이 약 10g (1포)을 녹여서 복용한다. 오전에 복용할 것을 권장하며, 이 약의 효과는 복용 후 1 ~ 2일(24 ~ 48시간) 내에 분명하게 나타난다. 어린이에게는 이 약을 3개월 이상 투여하지 않도록 한다. 치료에 의해 유도된 장운동의 회복은 생활습관 및 식이요법으로 유지되어야 하며, 이 약의 투여 전에 기질적인 장애가 있는지를 분명히 확인해야 한다. 이 약의 투여로도 증상이 개선되지 않으면 다른 원인을 의심해야 한다.
저장방법	기밀용기, 실온(1~30˚C) 보관	

※ 더 자세한 내용은 제품설명서를 참고바랍니다.

한국약품(주)