8th Istanbul Urolithiasis Days

May 08-10, 2025

The Marmara Taksim **Istanbul, Türkiye**

www.iud2025.com

Abstract Book

Dalya

INDEX

INVITATION

Dear Colleagues,

On behalf of the organizing committee, we are very pleased to invite you to the "8th İstanbul Urolithiasis Days", which will be held in "The Marmara Taksim Hotel, Istanbul" on May 8-10, 2025.

With this symposium we aimed to encourage scientific exchange regarding every aspect of new advances and researches in urolithiasis. Scientific developments and clinical applications in the pathophysiology, diagnosis, metabolic evaluation, medical and surgical treatment of stone disease will be discussed in detail during the keynote lectures, round table discussions, oral/poster presentation sessions and live surgery demonstrations. We tried to gather an excellent faculty of international brand name experts to share their valuable experiences during two-day meeting.

Our kind invitation is not only solely for urologists but also, we will be very happy to see our dear friends dealing with stone disease by working on adult/pediatric nephrology, pediatrics, dietary management and basic research departments.

We sincerely invite you to join us in the only city in the world set on two continents. We are confident that participants of '8th Istanbul Urolithiasis Days' will enjoy the city of Istanbul.

We look forward to meeting you and extending the traditionally famed Turkish hospitality in "City Irresistanbul" and believe that "8th Istanbul Urolithiasis Days 2025" will be a great success from both scientific and social aspects in a city where the continents meet.

Kemal SARICA M.D. PhD
Professor of Urology
Chairman of the Organizing Commitee

COMMITTEES

Chairman of the Organizing Committee

Kemal Sarıca

Local Organization Board
(in alphabetical order)

F. Arda Atar
M. Can Kiremit
Tzevat Tefik

Organizing committee
(in alphabetical order)

F. Arda Atar
M. Can Kiremit
Kemal Sarıca
Tzevat Tefik

Scientific Committee
(in alphabetical order)

F. Arda Atar
M. Can Kiremit
İliya Saltirov
Kemal Sarıca
Tzevat Tefik
Guohua Zeng

SCIENTIFIC PROGRAMME

8th Istanbul Urolithiasis Days

May 08-10, 2025
The Marmara Taksim Istanbul, Türkiye

MAY 08, 2025 THURSDAY

08:00 - 08:30	**OPENING REMARKS**	
08:30 - 10:00	**Session 1 - Society Lectures** **Moderators:** *Kemal Sarıca (TR), Simon Choong (UK), Alberto Budía Alba (ES)*	
08:30 - 08:45	Suctioning in Endourologic Stone Management: What is The Ultimate Concept? - EAU Section of Endourology Lecture	*Olivier Traxer (FR)*
08:45 - 09:00	Smaller Instruments, Bigger Impact: An Update on PCNL Miniaturization in 2025 - IAU Lecture	*Guohua Zeng (CN)*
09:00 - 09:15	Use of AI in Endourology- Is There Any Evident Progress? - SIU Lecture	*Jean de la Rosette (TR)*
09:15-09:30	Laparoscopic and Robot-Assisted Surgery in Stone Management - In Which Cases and How? - Endourology Society Lecture	*Burak Turna (TR)*
09:30 - 09:45	Innovations in RIRS with New Game Changers : Where Does PCNL Stand in 2025? - SEGUR Lecture	*Iliya Saltirov (BG)*
09:45 - 10:00	From Dust to Clarity: The Role of DISS in Stone Surgery - AUSET Lecture	*Vineet Gauhar (SG)*
10:00 - 11:00	**Live Surgery Session 1 - RIRS** **Moderators:** *Daron Smith (UK), Bülent Erkurt (TR), Engin Denizhan Demirkıran (TR)*	
	RIRS ***Surgeon: Olivier Traxer (FR)*** OR Moderator: ***Mehmet Ali Karagöz (TR)***	Surgeon: ***Saeed Bin Hamri (SA)*** OR Moderator: ***Kubilay Sabuncu (TR)***
11:00 - 11:30	**COFFEE BREAK**	
11:30 - 12:30	**Session 2 - Pathophysiology of Stones: What Is New?** **Moderators:** *Alaattin Yıldız (TR), Mehmet Kanbay (TR), Orhun Sinanoğlu (TR)*	
11:30 - 11:45	Epidemiology of Urolithiasis - An Update in 2025	*Kyriaki Stamatelou (GR)*
11:45 - 12:00	The Science Behind Stones: What Are the New Advances in the Pathophysiology of Urolithiasis	*Giovanni Gambaro (IT)*
12:00 - 12:15	Endoscopic Papillae Evaluation: Does It Really Have a Diagnostic Role and Clinical Impact?	*Salvatore Micali (IT)*
12:15 - 12:30	Novel Medical Treatment Alternatives in Urolithiasis - Is There Any Progress?	*Maria Ramos (ES)*
12:30 - 13:30	**LUNCH**	
13:30 - 15:00	**Session 3 - Intrarenal Pressure & Temperature: The Role of Intrarenal Dynamics** **Moderators:** *Salvatore Micali (IT), Athanasios Papatsoris (GR), Ali Ünsal (TR)*	
13:30 - 13:45	Navigating IRP and IRT: Must-Have Knowledge or Unnecessary Complexity? Endourology Academy Lecture	*Daron Smith (UK)*
13:45-14:00	Is Ureteral Access Sheath Really Safe Enough to Protect the Collecting System?	*Volkan Ülker (TR)*
14:00 - 14:15	Now We Have Important Game Changers : Did They Change the Stone Size Limit for RIRS ?	*Morshed Ali Salah (QA)*
14:15 - 14:30	The Impact of FANS on Clinical Practice: What's Different?	*Marcos Cepeda (ES)*
14:30 - 14:45	DISS vs FANS or Combination Treatment: A Path to Greater Success?	*Vimoshan Arumuham (UK)*
14:45 - 15:00	Septic Complications After Endourologic Stone Management: Essentials for Prevention and Treatment	*Altuğ Tuncel (TR)*
15:00 - 16:00	**Live Surgery Session 2 - RIRS** **Moderators:** *Guido Giusti (IT), Giorgio Mazzon (UK), Murat Binbay (TR)*	
	RIRS - Surgeon: ***Vineet Gauhar (SG)*** OR Moderator: ***Fatih Bıçaklıoğlu (TR)***	RIRS - Surgeon: ***Bülent Erkurt (TR)*** OR Moderator: ***Samed Verep (TR)***
16:00 - 16:30	**COFFEE BREAK**	
16:30 - 17:15	**Satellite Symposium** ***Moderator: Oğuz Acar (TR)***	
16:30-16:45	General Measures and Diet in the Stone Prophylaxis: How Effective They Are?	*Kemal Sarıca (TR)*
16:45-17:00	Targeted Medical Therapy in Urolithiasis: What Are the Current Facts & Limitations	*Tzevat Tefik (TR)*
17:00-17:15	Prophylactic Use of New Compounds in Urolithiasis: Are They Really Promising?	*Athanasios Papatsoris (GR)*
17:15 - 18:15	**Case Discussion With Experts** ***Moderator: Tarık Esen (TR)***	
	Panelists: ***Sinan Zeren(TR), Simon Choong (UK), Marcos Cepeda (ES) , Haluk Akpınar (TR)***	
18:15 - 19:00	**Scopes In Focus: Which Option Deserves Greater Use?** ***Moderators: Beata Jurkiewicz (PL), Ilia Saltirov (BG), Rahim Horuz (TR)***	
18:15 - 18:30	Choosing The Correct Scopes for a Successful FANS	*Vineet Gauhar SG)*
18:30 - 18:45	The Success & Economic Dilemma: Balancing Efficiency & Outcomes in Scope Selection	*Joanna Samotyjek (PL)*
18:45 - 19:00	The Environmental Dilemma: Which Is Eco-Friendly Scope?	*Serdar Yalçın (TR)*

8th Istanbul Urolithiasis Days

May 08-10, 2025
The Marmara Taksim Istanbul, Türkiye

MAY 09, 2025 FRIDAY

08:00 - 09:00 — **Session 4 - Pediatric Stone Disease - Principles of Evaluation and Management**
Moderators: *Merve Dede (TR), Tarkan Soygür (TR), Tayfun Oktar (TR)*

08:00 - 08:15	Metabolic Assessment in Pediatric Stone Patients	*Bağdagül Aksu (TR)*
08:15 - 08:30	Innovations in Pediatric Stone Disease: A Journey From Etiology to Novel Therapies	*Gregory Tasian (USA)*
08:30 - 08:40	Tips and Tricks for Successful RIRS in Preschool-Age Patients	*Beata Jurkiewicz (PL)*
08:40 - 08:50	Tips and Tricks for Successful PCNL in Preschool-Age Patients	*Ali Sezer (TR)*
08:50 - 09:00	Non-Surgical Management of Residual Fragments in Pediatric Population	*Elif Altınay Kırlı (TR)*

09:00 - 09:45 — **Case Discussion With Experts**
Moderator: *Joanna Samotyjek (PL)*

Panelists:
Ayşe Ağbaş (TR), Bülent Önal (TR), Alberto Budía Alba (ES), Gregory Tasian (USA)

09:45 - 10:45 — **Live Surgery Session 3 - PCNL and RIRS in Pediatric Stone Disease**
Moderators: *Kremena Petkova (BG), Bilge Tureli (TR), Gregory Tasian (USA)*

Pediatric PCNL - SMP	MiniRIRS in Pediatric Patient:
Surgeon: Guohua Zeng (CN)	*Surgeon: Saeed Bin Hamri (SA)*
OR Moderator:	OR Moderator:
Günal Özgür (TR)	*Ahmet Barış Aydın (TR)*

HAWK

medikasis HugeMed wellead

10:45 - 11:10 — COFFEE BREAK

11:00-12:30 - Abstract Session - 1 / HALL B
Moderators: Sanjith Gnanappiragasam (UK), Ramazan Kocaaslan (TR), Marco Tanic (RS)

11:00-11:15 - Laparoscopic Treatment of Upper Urinary Tract Stones - ***Mahmoud Benatta (DZ)***

12:15-12:30 - PCNL vs. Flexible URS in Developing Countries: Challenges, Benefits and Comparative Insights - **Faris Abushamma (PS)**

11:10 - 12:30 — **Session 5 - Management of Ureteral Stricture and Obstruction**
Moderators: *Carlos Martinez Arroyo (MX), Di Gu (CN), Mustafa Sofikerim (TR)*

11.10 - 11:20	Ureteral Stricture After Ureteroscopic Stone Management: Predictive Risk Factors and Prevention Strategies	*Kremena Petkova (BG)*
11:20 - 11:30	JJ Stent: Single or Tandem	*Giorgio Mazzon (UK)*
11.30 - 11:40	Use of Metallic Stents in Ureteral Obstruction	*Stilianos Giannakopoulos (GR)*
11.40 - 11:50	Self-Expandable Stents in Ureteral Stricture Disease	*Ferdinando de Marco (IT)*
11:50 - 12:00	Drug Coated Balloon Dilation	*Guido Giusti (IT)*
12:00 - 12:10	Endoluminal Endoureteromy in Ureteral Strictures	*T. Emre Şener (TR)*
12.10 - 12:20	Laparoscopic/Robotic Ureteral Reconstruction	*Volkan Tuğcu (TR)*
12.20 - 12:30	Q & A	

12:30 - 13:30 — LUNCH

13:30 - 14:45 — **Session 6 - Innovations in Endourologic Stone Management**
Moderators: *Remzi Sağlam (TR), Morshed Ali Salah (QA), M. Cenk Gürbüz (TR)*

13:30 - 13:45	Renal Access During PCNL: Is It Easier Than Ever With Recent Innovations?	*Abdul Majid Rana (PAK)*
13:45 - 14:00	Telesurgery in Stone Management: Fact or Fiction	*Fabio Sepulveda (BR)* Online
14:00 - 14:15	Novel Laser Technologies in Urolithiasis Treatment - A Critical Evaluation From Different Aspects	*Albert Aquino (PH)*
14:15 - 14:30	New & Future Scopes in Kidney Stone Management - What Is Waiting for Us?	*Saeed Bin Hamri (SA)*
14:30 - 14:45	Advances in Auxillary Equipments for Stone Surgery	*Cenk M. Yazıcı (TR)*

14:45 - 15:45 — **Live Surgery Session 4 - RIRS & ECIRS**
Moderators: *Wael Gamal (EG), Veli Yalçın (TR), Mehmet Ozsoy (AT)*

ECIRS	RIRS
Surgeons: Guido Giusti (IT) & M. Can Kiremit (TR)	*Surgeon: Tzevat Tefik (TR)*
OR Moderator:	OR Moderator:
Kadir Yıldırım (TR)	*Yasin Yitgin (TR)*

GENTEK MEDİKAL VE TEKNİK CİHAZLAR

Antkem ELMED MEDICAL SYSTEMS INDOVASIVE

15:45 - 16:10 — COFFEE BREAK

8th Istanbul Urolithiasis Days

May 08-10, 2025
The Marmara Taksim Istanbul, Türkiye

16:10 - 17:15	**Session 7 - Miscellaneous Topics in Endourology** **Moderators:** *Albert Aquino (PH), İlker Seçkiner (TR), Tevfik Aktöz (TR)*	**16:00-18:00 - Abstract Session - 2 / Hall B** **Moderators:** *Stilianos Giannakopoulos (GR), Haluk Şen (TR), E. Sabri Pelit (TR)*
16:10 - 16:25	Difficult PCNL Access: Techniques & Pitfalls ***Wael Gamal (EG)***	16:00-16:15 - The First Global Multicenter Experience of Mini-PCNL for 1.5-2.5 Cm Stones Using a Vacuum-Assisted Access Sheath (VASS) and Disposable Mini-Nephroscope ***Jaisukh Kalathia (IN)***
16:25 - 16:35	Active Suctioning During PCNL - Is It the New Game Changer Which Will Be a Standard Soon? ***Atilla Arıdoğan (TR)***	17:30-17:45 - US Dynamic Access In PCNL ***Reza Haghpanah (IR)***
16:35 - 16:45	Follow-up Imaging After Stone Treatment, When and by What Means? **Kayhan Tarım (TR)**	17:45-18:00 - Universal Fluoroless and Sheathless Ureteric Access for RIRS (SS Sheath): Reality of Future ***Mohammed Saleem (IN)***
16:45 - 16:55	Approach for Encrusted Stents: A Persistent Challenge in Urology **Braulio Manzo (MX)**	Online
16:55 - 17:05	Tips & Tricks of The Reduction of Radiation Exposure in Endourology **Carlos Martinez Arroyo (MX)**	
17:05 - 17:15	Kidney Stones and Risk of Kidney Cancer **M. Öner Şanlı (TR)**	
17:15 - 19:00	**Session 8 - Semi-Live Surgery: Complicated Stones - How I Manage Them?** **Moderators:** *Vimoshan Arumuham (UK), Zeki Bayraktar (TR), Fatih Kurtuluş (TR)*	
17:15 - 17:30	Retrograde Approach Is My First Preference For Impacted Proximale Ureteral Stones Because...	***Ural Oğuz (TR)***
17:30 - 17:45	Antegrade Approach Is My First Preference For Impacted Proximale Ureteral Stones Because...	***Arda Atar (TR)***
17:45 - 18:00	Laparoscopic/Robot-Assisted Ureterolithotomy Is a Better Choice for Impacted Proximale Ureteral Stones Because...	***Yakup Kordan (TR)***
18:00 - 18:15	Optimum Approach for Caliceal Diverticulum Stones	***Cem Başataç (TR)***
18:15 - 18:30	Management of Stones in Horsehoe Kidneys - What Are The Challenges Faced?	***Albert Aquino (PH)***
18:30 - 18:45	PCNL in Cases with Previous Renal Surgery	***Wael Gamal (EG)***
18:45 - 19:00	Laparoscopy-Assisted PCNL For Pelvic Kidney Stone	***Oğuz Özden Cebeci (TR)***
	MAY 10, 2025 SATURDAY	
08:30 - 09:45	**Session 9 - Shock Wave Lithotripsy (SWL) In 2025** **Moderators:** *Kemal Sarıca (TR), Selahattin Bedir (TR), Ümit Yıldırım (TR)*	
08:30 - 08:45	Tips and Tricks to Perform a Perfect SWL	***Mehmet Hamza Gültekin (TR)***
08:45 - 08:55	Emergency SWL for Whom, When and How?	***Hakan Çakır (TR)***
08:55 - 09:10	SWL in Pediatric Patients: How Does It Differ From Adults?	***Bilal Çetin (TR)***
09:10 - 09:25	Tips & Tricks to Improve Fragment Extraction After SWL	***Alberto Budia Alba (ES)***
09:25 - 09:35	Burst Wave Lithotripsy: Is It Ready for Clinical Practice	***Mehmet Özsoy (AT)***
09:35 - 09:45	Q & A	
09:45 - 11:00	**Session 10 - Stone Management In Special Situations** **Moderators:** *Ahmet Öztürk (TR), Cahit Şahin (TR), Nariman Gadzhiev (RU)*	
09:45 - 10:00	Evaluation and Management of Stones During Pregnancy: What Are the Main Concerns?	***Gökhan Sönmez (TR)***
10:00 - 10:15	Stone Management in Cases with Bleeding Disorders - How Should We Approach?	***Mehmet Ezer (TR)***
10:15 - 10:30	Approach to Kidney Stones in Transplant Kidneys?	***Burak Koçak (TR)***
10:30 - 10:45	Antibiotic Prophylaxis in Stone Surgery - An Uderestimated But Highly Important Issue	***Kenan Yiğit Yıldız (TR)***
10:45 - 11:00	Asymptomatic Stones: To Treat or Not to Treat?	***Mohammed Omar (EG)***
11:00 - 11:30	COFFEE BREAK	
11:30 - 13:00	**Session 11 - 13-mm, Hard Proximal Ureteral Stone: Managing A Non-Compliant Ureter: My Preference is:** **Moderators:** *Bilal Eryıldırım (TR), N. Cem Sönmez (TR), H. Murat Akgül (TR)*	
11:30 - 11:45	Prestenting and Second Session	***Mehmet Uslu (TR)***
11.45 - 12:00	Balloon Dilation and Beyond..	***Ognyan Gatsev (BG)***
12.00 - 12:15	Antegrade Ureterorenoscopy	***Nariman Gadzhiev (RU)***
12:15 - 13:00	Closing Remarks & Farewell	***Kemal Sarıca (TR)***

ORAL PRESENTATIONS

ABSTRACT PRESENTATION LIST
FRIDAY MAY 9TH, 11:00- 12:30
Moderators: S. Gnanappiragasam (UK), Marco Tanic (RS), R. Kocaaslan (TR)

Abstract Session - 1 / HALL B

PRESENTATION TIME	ABSTRACT TITLE	PRESENTER
11:00 - 11:15	Laparoscopic treatment of upper urinary tract stones	Mahmoud Benatta (DZ)
11:15 - 11:18	Ethnic Diversity and Urolithiasis: A Single-Center Experience	Kamran Bhatti
11:18 - 11:21	Occupational hazard in urolithiasis patients in Qatar: A single-center cross-sectional study	Kamran Bhatti
11:21 - 11:24	CKD in patients with calcium oxalate urolithiasis	Daniela Petrova
11:24 - 11:27	Efficacy of Herbal Treatment on Stone-free Status, After Shock Wave Lithotripsy for Ureteral Stones	Yusuf Kadir Topçu
11:27 - 11:30	The Effect of Alpha Blockers on The Results of Ureteroscopic Lithotripsy in Patients with Benign Prostatic Hyperplasia	Ertürk Altun
11:30 - 11:33	Efficacy and Safety of Two Different Approaches in the Drainage of the Upper Urinary Tract in Acute Obstructive Uropathy	Ferhat Yakup Suçeken
11:33 - 11:36	Complications and outcomes of double J stenting of the ureter in urological practice: A single-centre experience	Kamran Bhatti
11:36 - 11:39	Local clinical practice patterns in urolithiasis guidelines: A critical evaluation from Turkey	Salih Yildirim
11:39 - 11:42	Stone Volume Estimation Using Different Calculation Methods	Turker Altuntas
11:42 - 11:45	Is kidney-ureter-bladder radiography still a helpful tool for addressing acute ureteral colic in emergency settings?	Rola Abu Alwafa
11:45 - 11:48	The Thickness of the Ureteral Wall as a Predictor of Spontaneous Stone Passage in Acute Ureteral Colic: Prospective and Multicentral Cohort Study	Rola Abu Alwafa
11:48 - 11:51	Evaluation of the patient and stone factors affecting the ureteral wall thickness in cases with impacted upper ureteral stones – A Critical Evlauation	Hikmet Taha Temizkan
11:51 - 11:54	Rolling Stones: Streamlining Ureteric Stone Management With An Acute Colic Multidisciplinary Team (MDT).	Anastasia Shiakalli
11:54 - 11:57	The evolution of the treatment of urinary tract stones in children in Ukraine using the example of one specialist: a person-dependent or center-dependent process?	Dmytro Shevchuk
11:57 - 12:00	Parental Anxiety Levels and Influencing Factors in Children Undergoing Kidney Stone Surgery	Onur Özçörekçi
12:00 - 12:03	Pediatric Bilateral Acute Ureteral Obstruction Following Dextranomer/Hyaluronic Acid Treatment for Vesicoureteral Reflux: A Case Report	Kholoud Alabassi
12:03 - 12:06	Initial Surgical Outcomes of Ureteroureterostomy: Indications, Outcomes, and Re-Operation Rates	Barış Esen
12:00 - 12:06	Robotic-assisted pyeloplasty with buccal mucosal graft for PUJ obstruction in solitary kidney: A Case Report	Yaser Ata
12:06 - 12:15	Flexible and Navigable Suction (FANS) vs. Conventional UAS in Robotic RIRS: A Single-Center Experience	Rıfat Burak Ergül
12:15 - 12:30	PCNL vs. Flexible URS in Developing Countries: Challenges, Benefits, and Comparative Insights	Faris Abushamma (PS)

ABSTRACT PRESENTATION LIST
FRIDAY MAY 9TH, 16:00- 18:00
Moderators: S. Giannakopoulos (GR), H. Sen (TR), E.S. Pelit (TR)

Abstract Session - 2 / HALL B

PRESENTATION TIME	ABSTRACT TITLE	PRESENTER
16:00 - 16:15	The first Global Multicenter Experience of MinPCNL for 1.5-2.5 cm stones Using a vacuum-assisted Access sheath (VASS) and disposible mini nephrpscope	Jaisukh Kalathia (IN)
16:15 - 16:18	Actual clinical practice pattern in SWL after Covid-19 era: A critical evaluation from different aspects	Emre Burak Şahinler
16:18 - 16.21	ESWL In The Treatment Of Urolithiasis In Children During Wartime.	Rostyslav Nakonechnyy
16:21 - 16:24	The effect of lithotomy position on the course of the ureter: A preliminary report	Türker Altuntaş
16:24 - 16:27	Evaluation of the Performance of SMASH (Stone Management According to Size-Hardness) Score in Preoperative Planning for RIRS in the Treatment of Renal Stones	Hafiz Abdul Hanan Hanan
16:27 - 16:30	Efficacy of various modalities in flexible ureteroscopy; A Single-Center Experience.	Kamran Bhatti
16:30 - 16:33	Efficacy and safety of RIRS with Application of Flexible and Navigable Suction Ureteral Access Sheath for Kidney Stones Equal or Smaller than 1.5 cm	Viktoria Todorova
16.33 - 16:36	Sheathless RIRS in the era of slim and single use flexible ureteroscopy (ssFURS): Prospective analysis	Rola Abu Alwafa
16:36 - 16:39	Prediction of residual fragments after flexible ureteroscopic stone management: A critical evaluation based on patient and stone related parameters	Abdullah Aydın
16:39 - 16:42	In Vitro Comparison of Temperature Generated by Thulium Fiber Laser (TFL) versus Holmium: YAG (Ho:YAG) Laser in Normal and Hydronephrotic Kidney Models	Hatem Kamkoum
16:42 - 16:45	Mini-PCNLT: From Safety to Efficacy	Shukhrat Giyasov
16:45 - 16:48	Efficacy and safety of supine percutaneous nephrolithotomy in obese patients	Kamran Bhatti
16:48 - 16:51	Efficacy and safety of the minimally invasive percutaneous nephrolithotomy with aspiration sheath in the treatment of kidney stones	Konstantin Hristov
16:51 - 16:54	A Comparative Analysis of Retrograde Intrarenal Surgery (RIRS) and Percutaneous Nephrolithotomy (PCNL) for the Management of Renal Stones: A Multicenter Cohort Study	Rola Abu Alwafa
16:54 - 16:57	Comparison of minimally invasive percutaneous nephrolithotomy versus retrograde intrarenal surgery with flexible and navigable suction ureteral access sheath (FANS) in the management of impacted proximal ureteral stones	Ognyan Gatsev
16:57 - 17:00	Comparative assessment of the results of treatment of patients with ureteral stones of various locations using minimally invasive and non-invasive methods	Shukhrat Giyasov
17:00 - 17:03	Management of Anteriorly Located Renal Caliceal Stones with Two Different Techniques (Mini-Percutaneous Nephrolithotomy vs Flexible Ureteroscopic Laser Lithotripsy): A Critical Comparative Evaluation of the Outcomes	Ferhat Yakup Suçeken
17:03 - 17:06	Progress in PNL Complications Over The Years	Ertürk Altun
17:06 - 17:09	Major and minor PCNL complications and their management : A single center experience	Kamran Bhatti
17:09 - 17:12	Morbidity score for PCNL	Kamran Bhatti
17:12 - 17:15	Urinary infection pathogens and demographic-based variables in urolithiasis patients: 10-year single center experience	Onur Özçörekçi
17:15 - 17:18	Can machine learning revolutionize POST RIRS urosepsis prediction? A single center study	Hafiz Abdul Hanan Hanan
17:18 - 17:30	Q &A	
17:30 - 17:45	US Dynamic Access in PCNL	Reza Haghpanah (IR)
17:45 - 18:00	Universal Fluoroless and Sheathless Ureteric Access For RIRS (SS Sheath): Reality of Future	Mohammed Saleem (IN)

OP: 01

EFFICACY OF HERBAL TREATMENT ON STONE-FREE STATUS, AFTER SHOCK WAVE LITHOTRIPSY FOR URETERAL STONES

Sanan Asgarlı[2], Selahattin Bedir[1], Yusuf Kadir Topçu[1], Fahri Yavuz İlki[1], Turgay Ebiloğlu[1]

[1]*Department of Urology, Health Science University, Gulhane Research and Training Hospital*
[2]*Mudafie Nazirliyi Bas Klinik Hospitali, Bakü*

Aim: The present study was conducted to investigate the effect of herbal medicines on the stone-free rate in patients undergoing shock wave lithotripsy (SWL) for ureteral stones.

Materials and methods: Our retrospective study was conducted with patients who had undergone SWL treatment for ureteral stones on computer tomography (CT) scans. Patients were divided into two groups according to their usage of herbal medicine. A comprehensive analysis encompassing demographic characteristics, stone-free rate, stone passage duration, and the number of SWL sessions was conducted. In our clinical practice, patients undergone SWL for ureteric calculi and can not tolerate alfa blockers for medical expulsive therapy are recommended a terpene combination (5 drops at 12-hour intervals). The terpene combination contains pinene (107.14 mg), camphene (35.71 mg), borneol (35.71 mg), cineol (28.57 mg), fenkon (14.29 mg) and anethole (14.29 mg). Kidney-ureter-bladder (KUB) X-rays were scheduled before each SWL session and two weeks after the third session.

Results: The study comprised 303 patients, 162 in group 1 and 141 in group 2. The distributions of gender, age, body mass index, smoking and alcohol use status, stone side, location, size and number were found to be similar ($p > 0.05$). There is no difference in overall stone-free rates between the two groups ($p>0.05$). However, in the subgroup analysis conducted within the stone-free cohort, it was observed that group 1 attained stone-free status in a shorter duration and with a reduced number of SWL sessions.

Conclusions: The present study indicates that herbal treatments can shorten stone passage duration and unnecessary SWL sessions. The utilisation of herbal therapies may be a viable option for patients who are found to have a high probability of stone-free status when employed in conjunction with various nomograms that have been studied for stone-free status.

Table 1 Baseline Characteristics

		Herbal Medicine				p value
		Yes		No		
Age (Mean ± SD)		43,70±13,49		45,43±13,58		p=0,270
Sex (n,%)	Female	39	24,1%	40	28,4%	p=0,985
	Male	123	75,9%	101	71,6%	
BMI (n,%)	Normal	51	31,5%	44	31,2%	p=0,933
	Overweight	98	60,5%	84	59,6%	
	Obese	13	8%	13	9,2%	
Side (n,%)	Right	90	55,6%	69	48,9%	p=0,300
	Left	72	44,4%	72	51,1%	
Stone Location (n,%)	Lower	53	32,7%	58	41,1%	p=0,110
	Middle	31	19,1%	16	11,3%	
	Upper	78	48,1%	67	47,5%	
Stone Size (Mean ± SD) (mm)		8,17±3,24		8,61±2,56		p=0,432

BMI, body mass index; SD, standard deviation; n, number

Table 2 Subgroup Analysis of Stone-free Patients

		Herbal Medicine				p value
		Yes		No		
Stone-free status (n,%)		127	78,4%	97	68,8%	p=0,058
Stone passage duration (n,%)	1st week	38	29,9%	20	20,6%	**p=0,002**
	2nd week	49	38,6%	24	24,7%	
	4th week	40	31,5%	53	54,6%	

n, number

Keywords: SWL, ureteral stone, stone-free status, herbal treatment

OP: 02

MORBIDITY SCORE FOR PCNL

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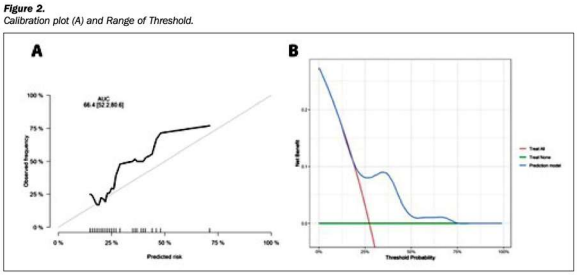
Introduction: A model to predict the risk of surgical complications following percutaneous nephrolithotomy (PCNL) could be a useful tool to guide clinical decision-making. The aim of this study was to develop a simple and widely applicable stratification tool to be used for patient counseling, surgical planning, evaluation of outcomes, and academic reporting.

Methods: Data of patients who underwent PCNL were retrieved from the database of the collaborating centers including demographics of patients, characteristics of their stones and urinary tracts, and perioperative data. The primary outcome was the development of postoperative complications. Data were randomly split into a training dataset (85%) and a validation dataset (15%). A univariate and multivariate logistic regression analysis of the training dataset was performed to identify independent predictors of postoperative complications. Model variables were used to construct a nomogram that was internally validated on the testing dataset by measuring calibration, discrimination, and plotting the decision curve.

Results: Six hundred thirty one patients (245 Males) with a median (IQR) age of 49 (37-56) years were included. Post-operative complications occurred in 147 (23.3%) patients. Significant predictors of complications included preoperative urine culture ($p < 0.001$), largest stone diameter ($p = 0.02$), and intraoperative blood loss ($p = 0.002$). A nomogram was developed from the predictors and applied to the validation dataset showing an area under the curve (95%CI) of 66.4% (52.2;80.6).

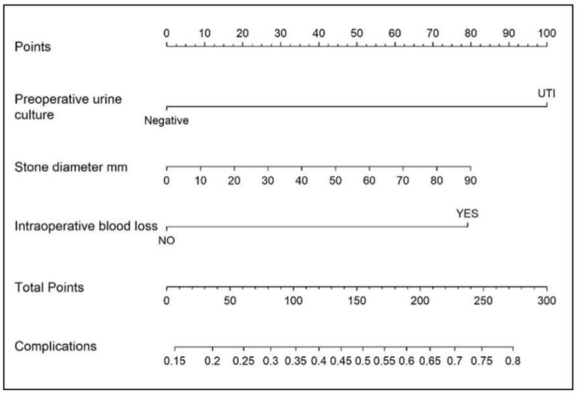
Conclusions: This new scoring system emphasized patient characteristics and operative details rather than stone characters to predict the morbidity of PCNL. Furthermore, it should facilitate risk adjustment, enabling physicians to better define the nephrolithiasis disease continuum and identify patients who should be referred to tertiary care centers.

Calibration plot (A) and Range of Threshold.



Nomogram for the evaluation of the risk of complications after PCNL.

Figure 1.
Nomogram for the evaluation of the risk of complications after PCNL.



Multivariate logistic regression analysis for predictors of postoperative complications after percutaneous nephrolithotomy.

	B	OR (95% CI)
(Intercept)	-1.807	0.164 (0.09:0.2)
Intraoperative blood loss (yes)	0.925	2.521 (1.2:4.9)
Preoperative urine culture (positive)	1.168	3.215 (1.6:6.1)

Comparison between training and validating datasets for patients who underwent percutaneous nephrolithotomy in 4 institutions.

Comparison between training and validating datasets for patients who underwent percutaneous nephrolithotomy in 4 institutions.

Keywords: Percutaneous nephrolithotomy; Complications, Urine culture; Stone diameter; Intraoperative blood loss.

OP: 03

SHEATHLESS RIRS IN THE ERA OF SLIM AND SINGLE USE FLEXIBLE URETEROSCOPY (SSFURS): PROSPECTIVE ANALYSIS

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Background: the purpose is to assess the feasibility of sheathless and time-limited retrograde intrarenal surgery (RIRS) using slim and single use flexible ureteroscopy (ssFURS) in view of the stone-free rate (SFR), complication rate and upfront ureteral stenting.

Methods: A prospective, cross-sectional study of patients who underwent RIRS for kidney stones between December 2021 and December 2023 at our tertiary urology center was performed. Patient demographics, clinical presentations and stone characteristics were calculated. The SFR and complication rate were included.

Results: Hundred and eighteen patients were included. The median age was 48 (35.7–60.0) years. Diabetes mellitus (DM) was present in 32 patients (27.1%). The median length of the kidney stones was 1.15 (range [0.4–3.0]), and the median width was 1 (range [0.05–3.7]). The pelvi-ureteric junction (PUJ) represented 75(63.6%) patients. The lower pole stone (LP) consisted of 27(22.9%) patients. Thirty-seven (31.4%) of the patients had multiple kidney stones. An overall complete SFR after the first session was observed for 94 (79.7%) patients. The second session of complete SFR was observed in 15 patients (12.7%). A median stone length of 1 (0.8–1.5) cm and a median stone width of 0.95 (0.7-1.3) cm were both significantly associated with a complete SFR after the first session ($p<0.001$). A single kidney stone in 69 (73.4%) patients was significantly more strongly associated with a complete SFR after the first session than was multiple kidney stones in 25 (26.6%) patients ($p = 0.027$). Upfront stenting was performed in 74 patients (62.7%). The complete SFR after the first session was significantly greater in patients who underwent upfront stenting (65;69.1%) than in those who underwent primary ssFURS (29; 30.9%), $p=0.004$).

Conclusion: Sheathless and time-limited RIRS using ssFURS is a feasible and successful procedure with low complication rate.

Keywords: retrograde intrarenal surgery (RIRS), stone-free rate (SFR), sepsis, ureteral access sheet (UAS), kidney stones

OP: 04

COMPARATIVE ASSESSMENT OF THE RESULTS OF TREATMENT OF PATIENTS WITH URETERAL STONES OF VARIOUS LOCATIONS USING MINIMALLY INVASIVE AND NON-INVASIVE METHODS

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Purpose: To improve treatment outcomes for ureteral stones by optimizing noninvasive and minimally invasive technologies.

Material and methods: A prospective analysis of 186 patients with ureteral stones was conducted at the Republican Specialized Scientific-Practical Medical Center of Urology, Uzbekistan, from July 2020 to April 2023. Of these, 84 underwent extracorporeal shock wave lithotripsy (ESWL) using the Storz Modulith SLX-F2 under ataralgesia. Before ESWL, stones were located in the proximal (63.1%), middle (2.4%), and distal (34.5%) ureter. The mean number of shocks per stone was 2436±247.8.Endoscopic treatment was performed in 102 patients. Stone location was proximal (51.0%), middle (22.5%), and distal (26.5%). Nephrostomy drains were pre-installed in 20.6%, and ureteral stents in 4.9%. Stones were removed via transurethral (49), percutaneous (49), and combined PC+TU (4) access using holmium laser or pneumatic lithotripsy under spinal anesthesia. Stone size in the ESWL group was 8.54±2.79 mm (4-16 mm) versus 11.46±4.26 mm (5-26 mm) in endoscopic cases ($p < 0.01$). Stone density was 855±319.8 HU for ESWL and 943.8±319.5 HU for endoscopic cases ($p > 0.05$).

Results: ESWL session duration was 19.4±1.8 min; endoscopic procedures lasted 63.4±17.5 min ($p < 0.01$). The absorbed radiation dose was 18.7±4.1 mGy for ESWL and 31.4±1.4 mGy for endoscopic treatment ($p < 0.001$). Hospital stays averaged 1.0±0.0 vs. 2.7±0.1 days, respectively ($p < 0.001$). After 7 days, stone-free rate (SFR) was 76.2% for ESWL and 99.0% for endoscopy ($p < 0.05$). In the ESWL group, 3 patients required repeat ESWL and 9 required endoscopy; SFR reached 100% by day 45. All 12 patients needing retreatment had stone density >1000 HU. In the endoscopic group, 1 patient required additional TU ureterolithotripsy, achieving 100% SFR by day 15.

Conclusions: Endoscopy is more effective than ESWL in terms of SFR and treatment duration but is less safe due to invasiveness and higher radiation exposure. Key indications for endoscopic treatment include stone size >6 mm, density >1000 HU, pre-installed nephrostomy tube, and patient preference.

Keywords: Urolithiasis, ureteral stone, ESWL, endoscopy.

OP: 05

THE EVOLUTION OF THE TREATMENT OF URINARY TRACT STONES IN CHILDREN IN UKRAINE USING THE EXAMPLE OF ONE SPECIALIST: A PERSON-DEPENDENT OR CENTER-DEPENDENT PROCESS?

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It is undeniable that the modern treatment of urinary tract stones in children is a high-tech process that requires the availability of modern equipment (especially endoscopic). It is rare for a children's hospital to have technological support for a full cycle of surgical treatment of urinary tract stones in children of different ages. Since the early 2000s, surgical treatment of stones has mainly involved open operations (lithotomy) with the gradual introduction of laparoscopic techniques. Thanks to cooperation with Polish colleagues since 2010, the possibilities of retrograde intrarenal surgery for children using a rigid ureterorenoscope have significantly expanded. With the increase in the number of cases and the limitation of technical support, there was a need to find new opportunities for the treatment of patients with urine stones, which at that time could only be provided by small private clinics. In 2022, a pediatric urology team was formed on the basis of the First Medical Association of Lviv with a full cycle of surgical care for children with stones of any localization and age (ESWL, miniPCNL, URS, fURS). Since then, hundreds of children with urinary tract stones have been treated starting from 6 months of age. The team also includes high-class pediatric nephrologists who accompany patients after surgical treatment, conducting metaphylaxis of urolithiasis. Therefore, success in the treatment of such a complex pediatric pathology as urinary tract stones is not possible without the formation of teamwork in a highly specialized center.

Keywords: urine stones, children

OP: 06

PARENTAL ANXIETY LEVELS AND INFLUENCING FACTORS IN CHILDREN UNDERGOING KIDNEY STONE SURGERY

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Objective: This study aimed to evaluate preoperative and postoperative anxiety levels in parents of pediatric patients undergoing kidney stone surgery and to identify factors influencing these levels.

Materials and Methods: This prospective, cross-sectional study included 33 pediatric patients undergoing primary or recurrent kidney stone surgery and their parents. Preoperative and postoperative (1st and 2nd hour) state anxiety levels were assessed using the State-Trait Anxiety Inventory (STAI) Form 1, while general anxiety was measured with STAI Form 2. Anxiety-fear levels in children were evaluated using the Facial Image Scale (FIS). The effects of the child's age, previous surgical history, ASA score, and surgery duration (<30 min vs. >30 min) on parental anxiety were examined.

Results: The mean age of the children was 8.61 ± 3.84 years, with 48.5% female and 51.5% male. The mean number of stone surgeries was 2.79 ± 3.27, and the mean FIS fear score was 2.15 ± 1.20. Among parents, 51.5% were mothers and 48.5% were fathers. The mean preoperative general anxiety score was 38.55 ± 6.39, while the mean preoperative state anxiety score was 46.18 ± 5.46. Postoperative anxiety scores at the 1st and 2nd hours were 41.91 ± 5.37 and 35.73 ± 5.82, respectively (p=0.001). No significant effect on anxiety was found for gender, child fear score, parental gender, or surgery duration. However, parents of children in the higher anesthesia risk group (ASA 2) had significantly higher preoperative anxiety levels than those in the low-risk group (ASA 1) (p=0.021). This difference was not statistically significant postoperatively. Linear regression analysis revealed that the child's age (p=0.009) and previous surgical history (p=0.011) were the two main variables significantly affecting preoperative anxiety levels. Parental anxiety increased with the child's age. The only significant factor affecting postoperative anxiety was the child's age (p=0.022).

Conclusion: This study demonstrated a significant association between parental anxiety and preoperative general anxiety, previous surgical history, and the child's age. The findings indicate that the surgical process imposes a psychological burden on parents, which may accumulate and intensify over time. It was concluded that psychosocial support may be particularly necessary for parents of older children or those with prior surgical experiences.

Table: Linear Regression Analysis of Factors Affecting Parental Anxiety

	Characteristics	β	SE	P	95%CI
Preoperative Anxiety (Model 1)	**Constant**	**26.39**	**6.242**	**0.001***	**13.58-39.20**
	Age	**0.700**	**0.248**	**0.009***	**0.190-1.21**
	Previous Surgery Count	**0.712**	**0.260**	**0.011***	**0.17-1.24**
	Child Fear Score(FIS)	0.815	0.806	0.321	-0.838-2.46
	Operation Time	*2.509*	*1.53*	*0.114*	*-0.63-5.65*
	ASA Score	1.048	2.109	0.623	-3.27-5.375
Postoperative Anxiety (Model 2)	**Constant**	**18.53**	**8.08**	**0.30***	**1.93-35.12**
	Age	**0.78**	**0.32**	**0.022***	**0.11-1.44**
	Previous Surgery Count	0.58	0.33	0.096	-0.11-1.27
	Child Fear Score(FIS)	1.02	1.04	0.337	-1.12-3.16
	Operation Time	3.05	1.98	0.136	-1.02-7.13
	ASA Score	2.66	2.73	0.338	-2.94-8.27

Keywords: Parental anxiety, pediatric kidney stone, recurrent surgery

OP: 07

ESWL IN THE TREATMENT OF UROLITHIASIS IN CHILDREN DURING WARTIME.

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Urolithiasis remains a complex problem to this day, especially during active hostilities in the country. Among a number of minimally invasive treatment methods for urolithiasis in children, extracorporeal shock wave lithotripsy (ESWL) is the first choice.

Aim: To determine the effectiveness and complications of ESWL in the treatment of urolithiasis in children during a period of limited resources and active hostilities. From May 2023 to January 2025, 96 patients with urinary tract stones aged 4 months to 18 years were treated in the urology department of the "St. Nicholas Hospital" branch of the "First Lviv Territorial Medical Union " municipal non-profit enterprise. Among them, 50 (52.1%) were girls and 46 (47.9%) were boys. According to the localization of the stones, the patients were divided into groups: kidney calyces – 38 (34.5%), renal pelvis – 31 (28.2%), upper third of the ureter – 19 (17.3%), and lower third of the ureter – 22 (20.0%). A total of 110 ESWL sessions were performed. 12 (12.5%) patients underwent repeated ESWL sessions, and two of them had 3 sessions. Two (2.1%) children had stones in different locations of the urinary tract. They underwent one ESWL session for each stone. 17 (17.7%) patients required additional manipulations before or after the ESWL session. Overall, the effectiveness of ESWL in children was 86.3%. Repeated ESWL sessions were performed in children with: genetically determined diseases, anatomical features of the calyx neck, high density (over 1600 HU), and large stones (more than 15 mm). In one patient, several factors often combined, which was why repeated interventions were needed. In 13 patients, "stone-free status" was not achieved. They were qualified for minimally invasive interventions: URS with fragment removal – 9 (9.4%) patients, and RIRS – 3 (3.1%). Four (4.2%) children with clinical signs of severe urinary tract obstruction, accompanied by pain syndrome and urinary tract infection, underwent kidney drainage with a JJ stent for two to three weeks and antibiotic therapy. ESWL was postponed.

Conclusion. ESWL can be recommended for children of any age as an effective and relatively safe treatment method that provides a significant percentage of "stone-free status".

Keywords: children, ESWL, kidney stones, lithotripsy

OP: 08

A COMPARATIVE ANALYSIS OF RETROGRADE INTRARENAL SURGERY (RIRS) AND PERCUTANEOUS NEPHROLITHOTOMY (PCNL) FOR THE MANAGEMENT OF RENAL STONES: A MULTICENTER COHORT STUDY

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Aim: Renal calculi represent major health problems worldwide, causing significant morbidities and expenditures. The treatment modalities for renal calculi have evolved with advancements inminimally invasive surgical techniques. Retrograde intrarenal surgery (RIRS) and percutaneousnephrolithotomy (PCNL) are the most common modalities; each modality has advantages based on the size, location, and complexity of the stone. This study aims to compare the efficacy and safety of these two approaches in managing renal stones.

Methods: The current retrospective multicenter cohort study was conducted on patients with RIRS or PCNL in two tertiary hospitals from December 2021 to December 2022. Data on patientdemographics, characteristics of stones, and intraoperative and postoperative data were collected. A complete stone-free rate (SFR) was considered when there was intraoperative fragmentation with no residual fragments larger than 2mm in size. The differences regarding both modalities were analysed.

Results: Of the 114 patients with a complete SFR, 51 (44.7%) underwent RIRS, while 63 (55.2%) underwent PCNL. PCNL exhibited a significantly better SFR (96.9%) than RIRS did (75%), especially for larger stones (>2 cm) and multiple stones ($p<0.001$). In bilateral stones, the efficacy of PCNL was higher than that of RIRS (79.4% vs. 20.6%,$p = 0.001$). However, RIRS patients had significantly shorter operative times (<60 minutes, $p<0.001$), shorter lengths of stay in the hospital (median: 1 day vs. 4 days, $p<0.001$), and fewerpostoperative complications (1.5% vs. 94.1%, $p<0.001$).

Conclusion: PCNL is the preferred treatment for larger or complex stones, offering a higherSFR in a single session. RIRS is a less invasive alternative for smaller stones with shorterrecovery times and lower complication rates. Individualized treatment planning depending on stone size and conditions is very important for optimal outcomes.

Correlations between patient demographics and type of surgery

Stone characteristics	**RIRS n=51 (75%)**	**PCNL n=63 (96.9%)**	***p* value**
Patient gender Female Male	 21 (44.7) 30 (44.8)	 26 (55.3) 37 (55.2)	0.992 a
Patient age	48 [30–55]	53 [42–61]	0.016 c
Presentation with pain Yes No	50 (44.2) 1 (100)	63 (55.8) 0 (0.0)	0.447 b
DM Yes No	15 (44.1) 36 (45)	29 (55.9) 44 (55)	0.931 a

The bold values indicate p<0.05. a Statistically significant values were calculated via Pearson's chi-square test b Statistically significant values were calculated via Fisher's exact test. c Statistical significance values were calculated via the Mann–Whitney U test

Correlations between a SFR of 100% and stone characteristics

Stone characteristics	**RIRS** **n=51 (75%)**	**PCNL** **n=63 (96.9%)**	*p* value	
Stone number Single Multiple	 29 (70.7) 22 (30.1)	 12 (29.3) 51 (69.9)	**<0.001**[a]	
Laterality Right Left	 22 (38.6) 29 (50.9)	 35 (61.4) 28 (49.1)	0.187 [b]	
Bilateral Yes No	 7 (20.6) 44 (55)	 27 (79.4) 36 (45)	**0.001**[a]	

Location			
Lower pole	14 (63.6)	8 (36.4)	**0.047** [a]
Non-lower pole	37 (40.2)	55 (59.8)	
Stone Size			
<= 2 cm	49 (72.1)	19 (27.9)	**<0.001** [a]
>2 cm	2 (4.3)	44 (95.7)	
Length of stone (cm)	1.0 [0.4–2.9]*	3.0 [0.8–5.5] *	**<0.001** [c]
Complications			
Yes	1 (5.9)	16 (94.1)	**<0.001** [b]
No	50 (51.5)	47 (48.5)	
Post operation Hospital stay (days)	1 [1–1] *	4 [2–8] *	**<0.001** [c]
Operative time			
>= 60 minute	0 (0)	63 (100)	**<0.001** [b]
<60 minute	51 (100)	0 (0)	

The bold values indicate p<0.05. a Statistically significant values were calculated via Pearson's chi-square test b Statistically significant values were calculated via Fisher's exact test. Statistically significant values were calculated via the Mann–Whitney U test. * This range indicates minimal and maximal

Keywords: Kidney stones, RIRS, PCNL, Stone-free rate, Minimally invasive urology

OP: 09

URINARY INFECTION PATHOGENS AND DEMOGRAPHIC-BASED VARIABLES IN UROLITHIASIS PATIENTS: 10-YEAR SINGLE CENTER EXPERIENCE

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Aim: Urinary system stones may develop as infection stones due to urinary tract infections and as non-infection stones which originate because of metabolic disturbances or through as-yet-unknown changes in kidney tissue. However, it has been shown that both infectious and non-infectious stones cause urinary tract infections by obstructing urine flow, creating suitable microenvironments for bacteria, tissue destruction and various chemical factors. By examining a large data set in our study, we aimed to examine how the process, including the presence of urinary system stones and the invasive or non-invasive interventions used in the treatment of these stones, affects urinary system infections.

Material and Methods: In our study, a total of 23,241 urine culture results of the Urology Clinic between January 2014 and December 2024 were investigated. 5,378 urine cultures from a total of 2907 unique urolithiasis patients were evaluated. Only one urine culture result for each patient was included in the study. Various inclusion and exclusion criteria were determined for this study; i) only one urine culture (most predominant or pathogenic bacteria) for each patient, ii) urine cultures within 90 days after the urolithiasis diagnosis, iii) floral contaminations were considered non-growth, iv) cfu/ml criteria set ≥104 for common pathogens and ≥ 105 for opportunistic pathogens.

Findings: Of the total 2907 patients included in the study, age of the patients were ranged 0 and 90, while the average age was 37.26 (male average: 37.93, female average: 36.5). Of the 1901 (65.39%) urolithiasis patients were found to have no growth in any urine culture samples within the 90-day period. The most frequently isolated microorganisms in culture-positive patients were E. coli (52.28%) and other results were given in Table 1.

Conclusion: Among the pathogenic bacteria, Pseudomonas aeruginosa was more prevalent in male urolithiasis patients, although Escherichia coli and Proteus mirabilis were statistically considerably more prevalent in female patients. Furthermore, female patients exhibited a statistically significant greater growth rate and a higher frequency of colonization by presumably non-pathogenic bacteria. Understanding how urinary stones and associated interventions affect the urinary system may guide us in preventing and treating infections.

Table 1. Gender based urine culture results of urolithiasis patients

Microorganism	**Male (n:1449)**	**Female (n:1458)**	**P-value**	**Significance (p < 0.05)**
Acinetobacter baumannii	1	3	0.617 (Fisher)	No
Alfa Hemolytic *Streptococcus*	8	27	0.052 (Chi²)	Borderline
Candida spp.	24	19	0.221 (Chi²)	No
Coagulase negative *Staphylococcus*	11	19	0.201 (Chi²)	No
Citrobacter freundii	0	3	0.248 (Fisher)	No
Corynebacterium spp.	2	11	0.021 (Fisher)	**Yes**
Enterobacter aerogenes	2	1	1.000 (Fisher)	No
Enterobacter cloaca	4	1	0.375 (Fisher)	No
Enterococcus faecalis	32	34	0.802 (Chi²)	No
Enterococcus faecium	19	25	0.432 (Chi²)	No
Escherichia coli	145	381	<0.001 (Chi²)	**Yes**
Klebsiella oxytoca	3	1	0.617 (Fisher)	No
Klebsiella pneumoniae	43	61	0.089 (Chi²)	No
Proteus mirabilis	10	26	0.012 (Chi²)	**Yes**
Proteus vulgaris	2	2	1.000 (Fisher)	No
Providencia rettgeri	2	0	0.500 (Fisher)	No
Pseudomonas aeruginosa	44	14	<0.001 (Chi²)	**Yes**
Serratia marcescens	2	2	1.000 (Fisher)	No
Staphylococcus aureus	10	4	0.104 (Fisher)	No
Streptococcus agalactiae	3	5	0.715 (Fisher)	No
No growth	1082	819	p < 0.001 (Chi²)	**Yes**

• Chi-Square Test: Used when expected values were greater than 5.

• Fisher's Exact Test: It was used when the expected values were less than 5 or the sample size was small.

Keywords: Urolithiasis, Escherichia coli, Pseudomonas aeruginosa

OP: 10

EFFICACY OF VARIOUS MODALITIES IN FLEXIBLE URETEROSCOPY; A SINGLE-CENTER EXPERIENCE.

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Objective: To compare the efficacy of dusting and basketing during flexibleureteroscopy for renal stones. Study Design: Observational study. Place and Duration of the Study: Department of Urology Hamad Medical Corporation Al Khor Qatar, from January 2017 to December 2022.

Methodology: The study was conducted retrospectively, 1750 patients with renalstones ≤ 2 cm treated with a flexible ureteroscope. Among them, 950 patientsunderwent dusting, and 800 patients underwent fragmentation with basketing. Allpatients followed up for 3 months. The operating time, access sheath usage, lasingtime, hospital stay, stone-free rate (SFR), and complication rate were compared.

Results: The mean stone size in the dusting group was 11.5±3.5 mm and 12.3±3.8mm in the basketing group. Patients' baseline demographic characteristics werealmost similar in both groups. The operation data and postoperative outcomeswere observed. The mean operative time was significantly lower in the dustinggroup than in the basketing group 45.1±10.8 minutes vs 63.5±13.8 minutes, fourpatients in the dusting group and two patients in the basketing group wereadmitted to the intensive care unit (ICU) due to septic shock and was successfullytreated. The immediate SFR after surgery was significantly higher in the basketinggroup (78.7%) compared with the dusting group (62.7%, p=0.001).). The SFR wasalso higher in the basketing group 86.4 % vs. 76.3% (p=0.001) after 1 monthpostoperatively. However, the SFR was (87.8%) in the dusting group vs 90.2% inbasketing group, during the follow-up period of 3 months postoperatively. Thesecondary session of fURS was required in the basketing group at 12.4% and thedusting group at 9.8%.

Conclusion: The dusting technique reduced the operation time and complications, but the lasing time was a bit longer than basketing. Both techniques have theiradvantages and disadvantages, both are effective in the management of renalstones. The question regarding which technique is better depends on patientdemographic and stone characteristics. We report our preliminary experience withboth types of flexible ureteroscopes. Our data suggests that single-use fURSrepresent a safe alternative to reusable fURS. Both devices are associated withsimilar stone-free rates and complication rates. Future well-designed studies withlonger follow-ups may be required to compare these two techniques and bothtypes of flexible ureteroscopes for better results and improved recommendations.

Keywords: Renal calculi; flexible Ureteroscopy; laser, Dusting

OP: 11

COMPLICATIONS AND OUTCOMES OF DOUBLE J STENTING OF THE URETER IN UROLOGICAL PRACTICE: A SINGLE-CENTRE EXPERIENCE

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Background: The double J stents are an important part of manyurological procedures, such as endoscopic or open surgery forretroperitoneal tumours of fibrosis, ureteral strictures, or treatmenturinary stones. A double-J stent is never without potential complicationswhich may be minor in form of haematuria, dysuria, frequency, flank andsuprapubic pain to major complications such as vesicoureteric reflux, migration, malposition, encrustation, stent fracture.

Methods: 3000 urological patients who had undergone double-J ureteralstenting attending surgery department were taken. Patients'complications were recorded starting at the time of placement of double-J ureteral stent till its removal.

Results: Majority of the patients in our study had complications relatedto double-J ureteral stenting like flank or suprapubic pain, dysuria, haematuria, and urgency which were managed conservatively. Majorcomplication like stent migration and encrustation managed with removalof stent.

Conclusions: Double J stents are a valuable tool for urologists to preventand alleviate blockage. Unfortunately, there is no such thing as a "perfecturinary stent", and these are not without risks. Complications of theDouble J stent should be assessed and addressed as soon as possible.

Keywords: double J stent, complications, urinary tract infection, stent encrustation, stent migration

OP: 12

IS KIDNEY-URETER-BLADDER RADIOGRAPHY STILL A HELPFUL TOOL FOR ADDRESSING ACUTE URETERAL COLIC IN EMERGENCY SETTINGS?

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Background: The aim of this study was to determine the reliability of kidney-ureter-bladder (KUB)radiography as a triage tool for acute ureteral colic (AUC). Moreover, this article describesthe correlation between KUB and noncontrast computerized tomography (NCCT) in view ofstone characteristics and clinical outcomes.

Methods: In a retrospective cohort study, patients who had proven ureteric stones on NCCT wererecruited. A double-blinded review of KUB and NCCT images was performed to identify thefollowing variables in both tests: site, ureteric stone maximum diameter, and stone density. The correlations between KUB radiography and NCCT were assessed. The intermethodreliability was used to measure the degree to which test scores are consistent when themethods or instruments employed vary.

Results: One hundred fifty-one patients were included, of whom 75 (50%) had negative KUB andpositive NCCT results for ureteric stones based on the double-blinded review. Lower ureteralcalculi were found to be the most common location in both the KUB and NCCT images (n=49; 65%, n=81; 54%, respectively). The median stone diameters on KUB and NCCT were5 mm (3-8) and 6 mm (4-9), respectively. Hounsfield unit densities greater than 630 werefound in 86 (57%) patients, and radiopaque stones were found in 76 (50%) patients. There was moderate and significant concordance (Cohen's kappa= 0.520) between the NCCT andKUB regarding stone location ($p< 0.01$). There was a strong concordance (Cohen's kappa=0.804) between the NCCT and KUB in detecting the maximum diameter of the ureteric stone ($p< 0.01$). Stone density was weakly correlated between KUB and NCCT (Cohen's kappa=0.254) ($p= 0.001$). Forty-five percent (n=34) of patients with negative KUB results requiredsurgical intervention (SI). Sepsis (n=5; 15%) and acute kidney injury (n=23; 68%) were themain indications for SI in patients with negative KUB and positive NCCT ureteric stones.

Conclusions: KUB radiography should not be used as a triage tool in the AUC due to potential harmfuloutcomes. However, KUB radiography can be reliably used during follow-up, as there is astrong correlation between KUB radiography and NCCT for detecting ureteric stones in KUBpatients.

Correlation between KUB radiography and noncontrast CT

Radiological variables	**KUB** **Frequency (%) or median [Q1-Q3]** **N=76**	**CT-scan** **Frequency (%) or median [Q1-Q3]** **N=151**	**Intermethod reliability**	**p value**
Laterality				
Right	38(50)	73(48.3)	0.737[a]	< 0.01[a]
Left	38(50)	78 (51.7)		
Uretric stone site				
Upper	17 (22.4)	55 (36.4)	0.520 a	< 0.01 a
Middle	10 (13.2)	15 (9.9)		
Lower	49 (64.5)	81 (53.6)		
Ureteric stone maximum diameter (mm)	5 [3-8]	6 [4-9]	0.804 [b]	< 0.01[b]
Multiple uretric stones			0.115 [a]	
No	72 (94.7)	126 (83.4)		0.173 [a]
Yes	4 (5.3)	25 (16.6)		
Stone density	Level 0 + level 1: 82 (54.3) * Level 2 + level 3: 69 (45.7) *	Density ≤ 630 HU:65 (43) Density > 630 HU: 86 (57)	0.254 [a]	0.001 [a]

* N =151 aInterrater reliability and statistical significance were calculated using the Cohen kappa test. b Interrater reliability and statistical significance values calculated using the intraclass correlation coefficient

Keywords: KUB radiography, noncontrast CT scan, acute ureteral colic, ureteroscopy

OP: 13

THE EFFECT OF LITHOTOMY POSITION ON THE COURSE OF THE URETER: A PRELIMINARY REPORT

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Introduction: The ureter is a thin luminal organ extending from the renal pelvis to the bladder, following a curved course due to adjacent structures like the iliac vessels. Beyond its static position, ureteral movement can be influenced by the psoas muscle beneath it. This is particularly relevant during ureteroscopy, as the lithotomy position alters psoas muscle length and width, potentially affecting ureteroscope navigation. However, the exact impact of lithotomy positioning on the ureter's course remains unclear. This study aims to evaluate ureteral movement in lithotomy versus supine positions.

Materials and Methods: Patients with a double J stent were included. KUB X-rays were taken in both supine and lithotomy positions from antero-posterior and sagittal views. The stent served as a radiopaque marker to assess ureteral course changes. Distances between the stent and lumbar vertebrae were measured, and the ureter was analyzed in three segments: proximal, middle, and distal. Angles between consecutive segments were compared. Patients with urological anomalies, malignancies, prior radiotherapy, or retroperitoneal fibrosis were excluded.

Results: The study included 14 patients (8 males, 6 females) with an average age of 48.28 ± 14.18 years. BMI classification showed 6 normal-weight, 4 overweight, and 4 obese patients. No significant difference was observed in stent-to-vertebra distances between supine and lithotomy positions (Table 1). Similarly, angle measurements between distal-middle and mid-proximal segments showed no significant changes ($p=0.49$, $p=0.345$, Table 2). Goniometric analysis confirmed no significant angle differences ($p=0.626$, Table 3).

Conclusion: Lithotomy position is expected to shorten and widen the psoas muscle, potentially altering ureteral access during ureteroscopy. Although no significant changes were observed in this study, lithotomy may affect ureteral steepness, impacting anterior-posterior alignment. Adjusting leg positioning during the procedure could enhance access to the proximal ureter and kidney.

Table 1. Distances between the stent and the adjacent vertebraes in sagittal images. (units are given in milimeters)

Table 1. Distances between the stent and the adjacent vertebraes in sagittal images. (units are given in milimeters)

	Supine	Lithotomy	P value
L1 – stent	38,5 +/- 12,66 (24-57)	38,33 +/- 12,43 (27-59)	0,916
L2 – stent	35,18 +/- 12,03 (18-54)	36,25 +/- 13,74 (16-65)	0,812
L3 – stent	30,35 +/- 13,43 (11-61)	28,14 +/- 16,05 (3-62)	0,156
L4 – stent	22,5 +/- 13,2 (8-62)	20,71 +/- 15,39 (4-66)	0,098
L5 – stent	13,64 +/- 11,04 (2-45)	14 +/- 10,96 (5-42)	0,860
Promontorium – stent	22,14 +/- 7,33 (8-33)	21,57 +/- 6,69 (5-32)	0,469

Table 2. The angles between the distal-mid and mid-proximal parts of the stent. The measurements were made using the lines drawn on the stent in sagittal images. (units are given in degrees)

Table 2. The angles between the distal-mid and mid-proximal parts of the stent. The measurements were made using the lines drawn on the stent in sagittal images. (units are given in degrees)

	Supine	Lithotomy	P value
Angle between distal – mid part of the stent	145,14 +/- 10,56 (121-165)	146,92 +/- 11,35 (126-162)	0,49
Angle between mid – proximal part of the stent	144,78 +/- 28,7 (81-171)	145,21 +/- 24,37 (81-172)	0,345

Table 3. The changes in angles in goniometrical analyses in sagittal images. (units are given in degrees)

Table 3. The changes in angles in goniometrical analyses in sagittal images. (units are given in degrees)

	Goniometry change at the distal – mid angle	**Goniometry change at the mid – proximal angle**
Patient 1	-14,00	-12,00
Patient 2	-26,00	6,00
Patient 3	18,00	-10,00
Patient 4	20,00	,00
Patient 5	-2,00	2,00
Patient 6	8,00	6,00
Patient 7	-2,00	-2,00
Patient 8	-29,00	2,00
Patient 9	-32,00	7,00
Patient 10	-30,00	-6,00
Patient 11	11,00	4,00
Patient 12	-6,00	-17,00
Patient 13	4,00	-8,00
Patient 14	3,00	-10,00
Mean	-5,5 +/- 17,95	-2,7143 +/- 7,74
P value	0,626	

Keywords: lithotomy, ureter, ureteroscope

OP: 14

EFFICACY AND SAFETY OF THE MINIMALLY INVASIVE PERCUTANEOUS NEPHROLITHOTOMY WITH ASPIRATION SHEATH IN THE TREATMENT OF KIDNEY STONES

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Introduction and aim: With the recent advancements in the endoscopic technologies, the technique of minimally invasive PCNL with smaller access sheath emerged in an effort to reduce renal parenchymal injury during the procedure. However, the reduction in sheath diameter resulted in reduced irrigation and visualization and precluded extraction of bigger stone fragments. In an effort to improve vision, irrigation and fragments extraction a modified access sheath with active aspiration was developed in different sheath sizes to allow the use of a variety of miniaturized nephroscopes. The aim of our study is to evaluate the efficacy and safety of minimally invasive percutaneous nephrolithotomy (Mini PNL) with aspiration sheath in the treatment of kidney stones.

Materials and methods: The medical records of 50 patients who underwent Mini PNL with aspiration sheath for the treatment of kidney stones were retrospectively reviewed. The patients were treated at the Clinic of Urology, Military Medical Academy, Sofia between January 2024 and July 2024. Data on patients` preoperative characteristics, stone – free rates, complications and auxiliary procedures were analyzed.

Results: Patients` mean age was 54.5 ± 11.4 years. The mean stone size was 35.1.2±6.7 mm and male-to-female ratio was 66/34 %. Fourteen of the patients (28%) had an anticoagulant therapy that was stopped a week before the operation. The mean preoperative value of the hemoglobin was 136.2±17.5 g/l. There were no intraoperative complications. The mean hospital stay was 3.33±0.9 days. The mean value of the postoperative hemoglobin was 127.2±14.8 g/l. The mean Hgb drop was 9.9±5.8 g/l. The stone free rate after the operation was 82 %. Postoperative complications were observed in 6 cases (12%). 4 (8%) of the complications were classified as grade 2 according to Clavien-Dindo classification and 2 (4%) as grade 3a (1 case treated with embolization and 1 with stent JJ placement).

Conclusion: The minimally invasive percutaneous nephrolithotomy has established itself as an effective and safe method for the treatment of kidney stones. The application of modified access sheath with active aspiration ensures effective evacuation of the fragments and increases the stone-free rates in the patients.

Keywords: urolithiasis, percutaneous nephrolithotomy, efficacy, safety

OP: 15

PREDICTION OF RESIDUAL FRAGMENTS AFTER FLEXIBLE URETEROSCOPIC STONE MANAGEMENT: A CRITICAL EVALUATION BASED ON PATIENT AND STONE RELATED PARAMETERS

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Aim: This study aimed to evaluate the potential impact of stone characteristics, patient factors, and upper tract anatomical parameters on predicting residual fragments (RF) following flexible ureteroscopic (fURS) management of renal stones.

Patients and Methods: Between June 2023 and July 2024, a total of 104 cases undergoing fURS for renal stones (10-25 mm in size) and 28 cases presenting with RF following the procedures were included in this study. In addition to patient characteristics, all cases underwent non-contrast computed tomography (NCCT) to assess specific patient, stone, and upper tract anatomy-related parameters. The predictive value of these parameters for the presence of RF was comprehensively evaluated during the 3-month follow-up period.

Results: A total of 104 adult patients with renal stones measuring 10-25 mm were managed using fURS in our department. Our findings indicated that among the evaluated parameters, a higher degree of hydronephrosis (Grade 2), larger stone size (>15 mm), and the presence of multiple stones significantly influenced RF occurrence (p=0.020, p=0.012, p=0.040, respectively). However, while univariate regression analysis suggested potential correlations with other factors such as patient gender, stone side, stone hardness, use of an access sheath, none of these parameters demonstrated significant impact when analyzed using backward (conditional) logistic regression.

Conclusions: These findings suggest that endourologists should carefully consider the likelihood of RF and associated complications in patients with larger stones, higher degrees of hydronephrosis, and multiple calculi. The utilization of reliable predictive parameters may aid in selecting optimal stone removal strategies and planning subsequent interventions for managing RF.

Keywords: Retrograd intrarenal surgery, Residual fragments, Hydronephrosis, Stone size

OP: 16

CAN MACHINE LEARNING REVOLUTIONIZE POST RIRS UROSEPSIS PREDICTION? A SINGLE CENTER STUDY

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Background: One of the primary surgical techniques for upper urinary calculi is retrograde intrarenal surgery (RIRS). Urosepsis is a severe complication of RIRS and poses significant risks to patients and challenges clinicians. Machine learning (ML) is a unique, proven model used to identify the high-risk patient population and enhance clinical decisions.

Methodology: To predict postoperative Urosepsis after retrograding intrarenal surgery, this study set out to develop a machine learning model. The dataset was obtained from 261 patients who had RIRS, and it included demographic, clinical, and procedural variables. Urosepsis occurrence was the target variable estimated based on the supervised machine learning algorithms, which include Random Forest, Logistic Regression, XGBoost, Decision Tree Classifier, LDA Classifier, and Support Vector Machine. The models were evaluated based on parameters like accuracy, precision, recall, and Area Under the Receiver Operating Characteristic curve (AUROC).

Results: Specific factors were also found to have predictive value; these were the patient's age, intraoperative complications, and inflammation markers after surgery. The clinical significance of feature importance analysis was ascertained for risk classification of Urosepsis. The SVM classifier's accuracy was evaluated as higher, with 92% and recall and precision scores of 0.92 and 0.93. Thus, it is a promising instrument for predicting dependability.

Conclusion: This work captures the possibility of identifying and preventing the occurrence of Urosepsis among RIRS patients and developing appropriate care plans using machine learning models. Directions for future research include testing these models in a real-world setting and ascertaining whether the superior performance of the model is sustainable across various groups of patients.

Keywords: Area Under the Receiver Operating Characteristic curve (AUROC).

OP: 17

EFFICACY AND SAFETY OF RIRS WITH APPLICATION OF FLEXIBLE AND NAVIGABLE SUCTION URETERAL ACCESS SHEATH FOR KIDNEY STONES EQUAL OR SMALLER THAN 1.5 CM

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Introduction and Aim: Retrograde intrarenal surgery (RIRS) is a well-established minimally invasive approach for the treatment of kidney stones, particularly those ≤ 1.5 cm. The addition of a flexible and navigable suction ureteral access sheath (FANS) to RIRS has the potential to enhance surgical outcomes by improving irrigation, reducing intrarenal pressure, and facilitating stone fragment clearance. This study aims to evaluate the efficacy and safety of RIRS with the application of FANS for managing kidney stones ≤ 1.5 cm.

Material and Method: Medical data of 110 patients from January to December 2024 were retrospectively analyzed. All patients underwent RIRS using a flexible ureteroscope and FANS. Data collected included patients` medical history, characteristics of stones, operative time, complication and stone-free rates at first month.

Findings: Patients' mean age was 53.81 ± 11.5 years. Mean hemoglobin level was 128.1 ± 12 g/l, mean serum creatinine - 90,6 ± 13 umol/l. 14,8 % of patients` preoperative results from sterile urine testing were positive for bacteria. Mean stone density from preoperative computer tomography was 1055 ± 70 HU. The choice of FANS length and width was dependent on the patient's anatomy and stone location. In 36.7 % of cases 36 cm was the preferable FANS length, while 63.3 % of the patients had anatomy which suggested using 46 cm sheath. In 47.7 % of cases 10 Fr sheath was preferred to 11 Fr (52.3 %). In 96.9 % of cases there were no intraoperative complications. Most common intraoperative complication was bleeding. Mean surgery duration was 41.7 ± 0.6 minutes. Postoperative complication rates were low - 12 % of patients had postoperative complications such as haematuria, fever or renal colic. Overall stone free rate in the first month was 96.3 % leading to less need for additional procedures.

Conclusion: RIRS with the application of FANS is a safe and effective treatment for kidney stones ≤ 1.5 cm. The technique achieves high stone-free rates with minimal complications, providing a viable alternative to more invasive procedures.

Keywords: RIRS, flexible ureteroscopy, FANS, kidney stones

OP: 18

MAJOR AND MINOR PCNL COMPLICATIONS AND THEIR MANAGEMENT: A SINGLE CENTER EXPERIENCE

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Objective: The prone position for percutaneous nephrolithotomy (PCNL)has been widely practiced. There has been a shift from prone position tosupine position which showed numerous benefits. The aim of our studyto find out major and minor PCNL complications and their management.

Material and methods: We retrospectively reviewed the data of 400 patients who underwent supine PCNL at the centre during the period of 5 years from January 2014 to December 2019. The data collection wasdone from patients' medical records. Preoperatively, completeexamination of the patients with laboratory investigations were done. The modified Clavien classification system was used to classify theperioperative complications of PCNL.

Results: A total of 202 solitary stones with a mean size of 17.19 ± 5.82mm, 100 stones in multiple calices, and 98 staghorns weretreated. Mean operative time was 69.79 ± 30.92 minutes. Atotal of 310/400 patients had clearance or <2 mm stone onpostoperative CT. Minor complications (Clavien-DindoClassification [CDC] 1-2) occurred in 110 cases and majorcomplications (CDC ≥3) occurred in 40 cases. 07 casesrequired postoperative blood transfusion for bleedingcomplications.

Conclusion: In our early preliminary experience, supine PCNL is aneffective and safe treatment option with acceptable complications. Withthe improvements in the modalities, these complication rates can bereduced with an increase in the stone-free rate.

Keywords: complications; nephrolithiasis; outcome; percutaneous nephrolithotomy; supine.

OP: 19

LOCAL CLINICAL PRACTICE PATTERNS IN UROLITHIASIS GUIDELINES: A CRITICAL EVALUATION FROM TURKEY

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Purpose: This study aimed to evaluate the current clinical practice patterns regarding the utilization of the "Urolithiasis Guidelines" in Turkey and to identify critical factors influencing their application by urologists.

Methods: The study targeted practicing urologists in Turkey, primarily those involved in the management of urolithiasis, to assess their perspectives and experiences regarding the clinical application of established guidelines. A total of 415 urology specialists were invited to participate in a survey-based study conducted via Google Forms. Participation was voluntary, and 65.08% of the invited urologists completed the survey.

Results: Among the respondents, 84.7% reported utilizing the available guidelines in their routine clinical practice, with varying frequencies of reference. The primary motivations for using the guidelines were the prevention of potential complications and the avoidance of legal risks, as indicated by 90.5% of respondents. While 56.9% of participants adhered to the guidelines as a clinically standardized practice, 41.6% reported applying the recommendations on a case-by-case basis. Notably, 41.0% of respondents emphasized the need for locally adapted versions of guideline texts. Additionally, nearly half of the participants reported receiving no formal education or training on the significance, content, and practical application of these guidelines. Furthermore, 12.7% expressed skepticism about the evidence-based foundation of the guidelines, questioning whether the recommendations were derived from rigorously conducted studies.

Conclusion: The available urolithiasis guidelines are recognized as valuable resources offering key recommendations for the effective and safe management of urolithiasis. However, findings from this survey highlight significant variability in clinical practice patterns due to local conditions, as well as the individual experiences and attitudes of practicing urologists. The application of guideline recommendations is further influenced by perceptions regarding their development, content, and practicality. Insights gathered from this study may contribute to improving the preparation, dissemination, and implementation of urolithiasis guidelines, particularly in adapting them to local clinical settings.

Keywords: Guidelines, Clinical practice patterns, Urolithiasis, Survey, Local

OP: 20

EFFICACY AND SAFETY OF SUPINE PERCUTANEOUS NEPHROLITHOTOMY IN OBESE PATIENTS

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Background: Obesity is an increasing health concern, affecting 39% of the population. In Qatar, in recent years, the obese population contributed 35.9% of men and 46.1% of women. Qatar's obesity prevalence is higher in the region. The diet, rich in animal protein, high in oxalate, low in calcium, and the dry subtropical desert climate are risk factors for urolithiasis in Qatar. Objectives were the efficacy of percutaneous nephrolithotomy in obese patients.

Patients and Methods: We retrospectively reviewed the patientswho underwent PCNL between January 2015 and December 2019. A total of 150 patients were enrolled. The patients were categorized into two groups according to BMI: <30 kg/m2 (group 1, non-obese) and >30 kg/m2 (group 2, obese). The stone clearance rate, operation time, duration of hospital stays, Postoperative analgesic use, and postoperative complications were compared among groups. The chi-square test was used to analyze variables and Complications were graded according to theClavien–Dindo classification system.

Results: The BMI values of 110 patients were lower than 30 kg/m2, while 40 patients' BMI values were higher than 30 kg/m2. There was no significant difference between operation time, fluoroscopy time, number of access points, or access sites when the two groups were compared. No significant difference was found in the total length of hospital stay, haemoglobindrop, or complication rates. Immediate stone-free rates were 81.8% in the non-obese group and 75% in the obese group (p=0.21).

Conclusion: In a retrospective study of 150 patients undergoing supine PCNL, the efficacy was not different between non-obese and obese patients. This is the first study evaluating these outcomes for PCNL performed under the ERAS protocol in the supine position. Further multicenter and prospective studies are required to verify these findings.

Keywords: Obesity; Percutaneous nephrolithotomy; Qatar

OP: 21

STONE VOLUME ESTIMATION USING DIFFERENT CALCULATION METHODS

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Introduction: Stone size and location within the pyelocalyceal system are key factors in surgical decision-making. The EAU Guidelines on Urolithiasis assess stone size based on diameter, but volume should also be considered, as a two-fold increase in diameter leads to an eight-fold increase in volume. Various methods exist for stone volume calculation, including manual computation using the ellipsoid formula ($V= (4/3) \times \pi \times a \times b \times c$) and 3D software-based calculations. We hypothesize that in cases with irregular stone surfaces, 3D software will yield different results compared to manual formulas. This study aims to compare volume calculations between globular-shaped and staghorn-type stones.

Materials & Methods: We retrospectively analyzed 56 patients (28 with staghorn and 28 with globular-shaped stones) who underwent flexible ureteroscopy and/or percutaneous nephrolithotomy. Preoperative CT dicom images were used to calculate stone volumes via: A) **Manual Calculation:** Measuring the largest antero-posterior, medio-lateral, and cranio-caudal diameters and applying the ellipsoid volume formula. B) **3D Software Calculation:** Using 3D Doctor software for volume estimation. Demographic data and volume measurements were compared.

Results: No significant difference was observed between groups in age or BMI. In the smooth-stone group, median volumes were 712.23 mm^3 (manual) and 712.5 mm^3 (3D). In the staghorn group, manual calculation yielded 8486.52 mm^3, while 3D calculation showed 2654 mm^3 ($p<0.001$). No significant difference was noted in the smooth-stone group, but a marked discrepancy was found in the staghorn group.

Conclusion: Stone volume assessment should be integral to treatment decisions. 3D-based software provides more accurate volume calculations, particularly for irregularly shaped stones, and should be incorporated into clinical practice.

Table 1. Demographic Analyses

Table 1. Demographic Analyses

	Smooth Surface Group (n:28)	**Staghorn Group (n:28)**	**P value**
Age (years) median (min-max)	52,5 (29-79)	53 (19-76)	0,93
Sex (M/F)	26/2	17/11	**0,005**
BMI (kg/m^2) median (min-max)	26,36 (22,3-35,7)	28,1 (17,3-37,04)	0,62

BMI: Body Mass Index

Table 2. Data Analyses

Table 2. Data Analyses

Smooth Surface Group			
	Manual Calculation	**3d Doctor**	**P value**
Stone Volume (mm^3) median (IQR)	712,23 (319,06-2694,92)	712,5 (312,75-1248,75)	0,056
Staghorn Group			
Stone Volume (mm^3) median (IQR)	8486,52 (5773,55-13202,08)	2654 (1565,25-4125)	**<0,001**

IQR: Inter Quantile Range

Keywords: Stone volume, urolithiasis, 3D-based software, staghorn stones, percutaneous nephrolithotomy

OP: 22

MINI-PCNLT: FROM SAFETY TO EFFICACY

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Relevance: For the urological community, ensuring the safety of patients undergoing various interventions is a priority through improving the quality and effectiveness of interventions.

Aim of the study: Improving the results of endoscopic surgery for urolithiasis.

Material and methods: The study included the results of treatment of 78 patients, aged from 4 to 79 (43.35±1.95) years, stone size 12.31±0.65 mm (from 6 to 46), who underwent minipercutaneous nephrolithotomy in the period from June 2022 to March 2023. Pneumatic or laser lithotripsy was performed, the size of the nephroscope tube was 14 Fr., the operations were completed either with the installation of a nephrostomy at the end of the operation or by the tubeless method.

Findings: In 30 (38.5%) patients, the operation was completed with the installation of a 12 Fr nephrostomy drainage without a catheter in the ureter, in 48 (61.5%) patients, a non-drainage method was performed, leaving a JJ stent in the ureter. The Stone free rate was 47 (98.7%). Intraoperatively, 1 (1.3%) case of bleeding was observed; in this patient, the operation was completed with the installation of a 12 Fr balloon catheter. No other and/or complications were observed. The hospital stay was shorter than the other groups, at an average of 2.85 days. Thus, all 3 (3.8%) complications were mild, since even in 1 patient, in whom an additional JJ stent was placed in the postoperative period, it was performed due to swelling of the distal part of the ureter.

Conclusions: Mini-PCNLT proved to be a safe and highly effective therapy for a certain category of patients, which makes it possible to more often complete the operation with a tubeless method.

Keywords: Urolithiasis, Mini-PCNLT, tubeless, complications

OP: 23

EVALUATION OF THE PATIENT AND STONE RELATED FACTORS AFFECTING THE URETERAL WALL THICKNESS IN CASES WITH IMPACTED UPPER URETERAL STONES – A CRITICAL EVLAUATION

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Aim: To evaluate the patient, stone and anatomy related factors which may affect the formation and degree of ureteral wall thickness (UWT) in cases impacted proximal ureteral stones.

Patients and methods: A total of 115 patients with impacted upper ureteral stones (5-20 mm) undergoing ureteroscopic management were included into the study program and the outcomes were evaluated in a retrospective manner. In addition to the patient related parameters, stone and anatomy characteristics were evaluated on noncontrasted computed tomography (NCCT) images. The possible effect of these critical parameters on the thickness of the stone bearing portion of the ureteric wall was evaluated from different aspects.

Results: Our results have demonstrated well that of the stone related factors, as the volume and size (length) of the stone increased, UWT at this part of the ureter has also been found to be increased. However, there was no statistically difference between stone position and UWT. On the other hand, regarding the patient and anatomy related factors, in addition to patients presenting with higher degrees of hydronephrosis, patients with comorbidities also had significantly higher UWT values when compared to the others.

Conclusions: Our results demonstrated well that increase in stone size and associated comorbidities are the parameters correlating with the increased UWT values in cases with upper ureteric stones. These parameters could promote the chronic irritation based inflammatory process further and may be used to predict the severity of impaction for ureteral stones that may help in the course and outcomes of applied stone removal procedures.

Keywords: Ureteroneoscopy, uretheral stone, uretheral wall thickness

OP: 24

ROLLING STONES: STREAMLINING URETERIC STONE MANAGEMENT WITH AN ACUTE COLIC MULTIDISCIPLINARY TEAM (MDT).

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Introduction and Aim: Ureteric stones present a considerable challenge in public healthcare systems, particularly when managed conservatively. The management of these conditions requires effective follow-up care to ensure optimal patient outcomes. In light of this, our acute colic multidisciplinary team (MDT) aims to provide a structured, comprehensive pathway for managing patients with ureteric stones, ensuring that care is timely, efficient, and aligned with national standards. The primary objective of this study was to evaluate the efficiency of our MDT service in managing ureteric stones and to assess its adherence to the National Institute for Health and Care Excellence (NICE) guidelines, specifically the 6-week timeframe for the management of these conditions.

Materials and Methods: A retrospective review was conducted on all new referrals to the MDT between June and December 2024. Patients without ureteric stones were excluded from the study. Those with confirmed ureteric stones were followed up using CT imaging to assess for spontaneous stone passage. If spontaneous passage did not occur, they were promptly referred for urgent intervention.

Findings: A total of 276 patients were referred across 26 MDT meetings, with 69% (190/276) diagnosed with ureteric stones via CT imaging. Among these, 58% (110/190) passed stones spontaneously, 19% (36/190) required ureteroscopy, and 5% (10/190) underwent shockwave lithotripsy. Additionally, 8% (15/190) were discharged after failing to attend two CT appointments, and 10% (19/190) chose to pursue treatment elsewhere. The average time from emergency department referral to MDT review was 6 days. While the overall time from referral to treatment was 9 weeks, the time from the decision to treat, after initial conservative management, was within the NICE-recommended 6-week timeframe.

Conclusion: Our findings indicate that the acute colic MDT provides effective follow-up and treatment for patients with ureteric stones. However, there is room for improvement. Specifically, the electronic referral system could be updated, as 31% (86/276) of referrals were for non-ureteric stones. Furthermore, incorporating an evidence-based stone passage calculator and providing patients with clear discharge information about the pathway will enhance patient compliance and engagement. Refining these processes will help optimise patient care, improve outcomes, and ensure adherence to clinical guidelines.

Keywords: ureteric stones, multidisciplinary team (MDT), NICE guidelines, Conservative management, Acute ureteric colic

OP: 25

MANAGEMENT OF ANTERIORLY LOCATED RENAL CALICEAL STONES WITH TWO DIFFERENT TECHNIQUES (MINI-PERCUTANEOUS NEPHROLITHOTOMY VS FLEXIBLE URETEROSCOPIC LASER LITHOTRIPSY): A CRITICAL COMPARATIVE EVALUATION OF THE OUTCOMES

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Purpose: To evaluate the efficacy and safety of two different approaches, flexible ureteroscopic laser lithotripsy (fURS) and mini-percutaneous nephrolithotomy (mini-PCNL), for the minimally invasive management of anteriorly located caliceal stones in a location-based manner.

Materials and Methods: A total of 93 patients with anterior caliceal stones (<15 mm) were treated with following two different modalities: fURS (n = 52, 55.9%) (Group 1) and mini-PCNL (n = 41, 44.1%) (Group 2). Demographic, per-operative, and postoperative parameters were comparatively evaluated in both groups.

Results: The groups were similar in terms of their demographic data and stone characteristics ($p > 0.05$). Operation, fluoroscopy time, and hospital stay were significantly longer in Group 2 ($p < 0.001$). The perioperative complication and overall stone-free rates were similar between the groups ($p = 0.44$ and $p = 0.53$, respectively). However, when the stone-free rates were examined according to the calix groups, Group 2 was significantly more effective in terms of stone-free rates in the lower calix (52% vs 84%, $p = 0.03$). Although not statistically significant, more postoperative complications were observed in Group 2 ($p = 0.09$).

Conclusion: Our findings demonstrate that although mini-PCNL may be performed well through a caliceal puncture to remove lower caliceal stones with a high stone clearance rate, the fURS approach may be safer and more rational for the removal of stones located in the middle and upper anterior calices.

Patient's demographics, perioperative findings and complications of fURS and mini-PCNL patients

	fURS (n=52)	**mini-PCNL (n=41)**	**p**
Age	51.6±16.1	47.7±14.2	0.23
BMI	24.10±1.35	23.66±1.13	0.09
Stone Density (HU)	962±312	1040±346	0.34
Stone Volume (mm^3)	802±73	812±83	0.54
Operative time (min.)	59.8±11.2	120.1±13.5	**<0.001**
Floroscopy time (min.)	1.58±0.97	4.85±1.63	**<0.001**

Post-operative outcomes of fURS and mini-PCNL patients

		fURS (n=52)	**mini-PCNL (n=41)**	**p**
Postop. HCT (%)		38.5±5.5	36.3±4.8	0.04
Emergency re-admission		8 (15.4)	4 (9.8)	0.42
Stone Free Rate n(%)	Lower	12 (52)	16 (84)	**0.03**
	Middle	15 (88)	9 (75)	0.35
	Upper	12 (100)	8 (80)	0.10
Perioperative complications		8 (15.3)	7 (17.1)	0.44

Keywords: Anterior calyx stones, Flexible ureteroscopic laser lithotripsy, Mini-percutaneous nephrolithotomy

OP: 26

ROBOTIC-ASSISTED PYELOPLASTY WITH BUCCAL MUCOSAL GRAFT FOR PUJ OBSTRUCTION IN SOLITARY KIDNEY: A CASE REPORT

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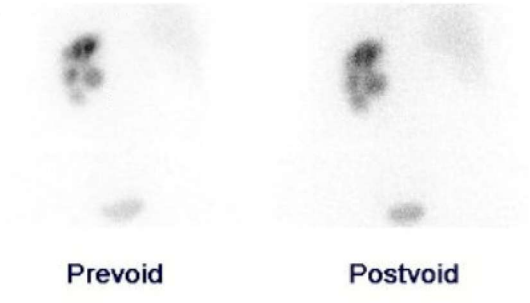
Introduction: Pelvi-ureteric junction obstruction (PUJO) in a solitary kidney presents a significant clinical challenge due to the heightened risk of renal function deterioration. In patients with a history of recurrent nephrolithiasis and multiple stone-related interventions, PUJO may develop secondary to iatrogenic scarring, fibrosis, and structural compromise of the ureteropelvic junction. Traditional surgical options may be limited in such cases due to poor tissue quality and stricture length. Robotic-assisted pyeloplasty, combined with buccal mucosal graft (BMG) augmentation, offers a minimally invasive yet effective solution in these complex scenarios.

Case Presentation: We report a case of PUJO in a patient with a solitary functioning kidney and a background of recurrent stone disease managed with multiple prior endourological procedures. The patient presented with progressive flank pain, recurrent infections, and evidence of functional deterioration on imaging. Cross-sectional imaging and renal scintigraphy confirmed significant hydronephrosis with delayed drainage from the affected kidney. Given the extent of fibrosis and ureteric narrowing, a robotic-assisted dismembered pyeloplasty was performed with the incorporation of a buccal mucosal onlay graft to augment the strictured segment. The procedure was completed successfully with minimal blood loss and no intraoperative complications. Postoperative recovery was uneventful, and the patient was discharged on the third postoperative day.

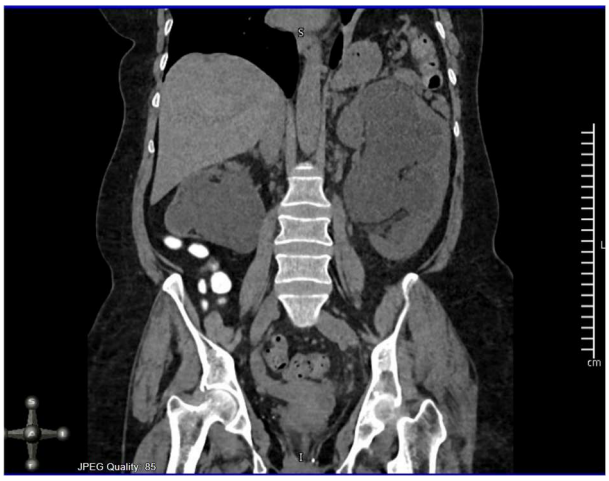
Outcome and Follow-Up: At six months, the patient remained asymptomatic with stable renal function and improved drainage demonstrated on postoperative imaging. No recurrence of obstruction or complications related to the graft site were noted.

Conclusion: This case highlights the efficacy and safety of robotic-assisted pyeloplasty with buccal mucosal grafting in the management of complex PUJO in a solitary kidney. This approach may serve as a valuable option for preserving renal function in high-risk patients with challenging anatomical and surgical histories.

Renogram



CT



Keywords: Robotic-assisted pyeloplasty; Buccal mucosal graft; Pelvi-ureteric junction obstruction; Solitary kidney; Recurrent nephrolithiasis; Minimally invasive surgery; Ureteric stricture.

OP: 27

EVALUATION OF THE PERFORMANCE OF SMASH (STONE MANAGEMENT ACCORDING TO SIZE-HARDNESS) SCORE IN PREOPERATIVE PLANNING FOR RIRS IN THE TREATMENT OF RENAL STONES

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Background: Retrograde Intrarenal Surgery (RIRS) is recommended for the treatment of renal stones smaller than 20 mm. However, stone hardness, often overlooked, plays a significant role in determining the best surgical approach. The Stone Management According to Size-Hardness (SMASH) score was proposed to aid in preoperative planning by assessing stone size and hardness. This study aimed to evaluate the effectiveness of the SMASH score in selecting optimal candidates for RIRS in patients with stones smaller than 20 mm.

Methodology: This retrospective observational study was conducted at the Pakistan Kidney and Liver Institute and Research Center (PKLI & RC) from September 2019 to September 2024. The study included patients aged over 14 years with renal stones between 1 cm and 2.5 cm undergoing their first RIRS procedure. Patients were excluded if they had infected urine, staghorn stones, stones larger than 2.5 cm, or required a second procedure. The SMASH score was calculated using Hounsfield units (HU) and stone size, and its utility in predicting successful stone clearance was assessed. Data on demographics, clinical characteristics, operative details, and postoperative outcomes were collected. Statistical analysis included Spearman's correlation, logistic regression, and receiver operating characteristic (ROC) curve analysis.

Results: The study analyzed 260 patients with a mean age of 44.88±15.25 years. Complete stone clearance was achieved in 80.4%, with higher success rates in patients with SMASH scores <15 (67.5%, $p<0.001$). Postoperative complications occurred in 12.7%, including urosepsis (9.2%) and UTIs (3.1%). Median operative and laser times were 80 minutes and 57.5 minutes, respectively, correlating positively with SMASH scores ($\rho=0.194$, $\rho=0.185$, $p<0.01$). Logistic regression identified stone size as a significant predictor of clearance (OR 5.479, $p<0.001$). The median hospital stay was one day, indicating rapid recovery.

Conclusion: The SMASH scores and stone size significantly influence the success of retrograde intrarenal surgery (RIRS). Lower SMASH scores and smaller stones correlate with higher clearance rates and fewer complications. The SMASH score demonstrated a weak predictive ability for stone clearance, stone size emerged as a strong predictor, emphasizing the need for preoperative planning.

Keywords: ROC, SMASH

OP: 28

IN VITRO COMPARISON OF TEMPERATURE GENERATED BY THULIUM FIBER LASER (TFL) VERSUS HOLMIUM: YAG (HO:YAG) LASER IN NORMAL AND HYDRONEPHROTIC KIDNEY MODELS

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Introduction & Objectives: Kidney stone affects many people, with ureteroscopy being a common treatment. Intracorporeal lithotripsy uses lasers to fragment stones, with the Holmium YAG (HoYAG) laser as the gold standard. The Thulium Fiber Laser (TFL) is an alternative. Both lasers generate heat, posing potential risks. This study compares the thermal effects of TFL and HoYAG at various power settings and evaluates the impact of kidney conditions and irrigation on temperature control.

Materials & Methods: The study used IPG Urolase SP 60W (TFL) and Lumenis PulseTM 50H (HoYAG) lasers with Mediskills Trainer models—normal-sized and dilated kidneys. A WiScope endoscope with a 200µm laser fiber was employed, temperatures were recorded using a KEYNICE thermometer at the renal pelvis. Irrigation at 40 cmH2O was maintained for 900 seconds, followed by 120 seconds without irrigation. Lasers were tested at 6W, 15W, and 25W, with temperature readings every 10 seconds. Each setup was repeated five times.

Results: At 6W, both lasers stayed below the safety threshold of 43°C in all kidney models. At 15W, temperatures exceeded 43°C in normal kidneys but stayed safe in dilated ones. At 25W, both lasers surpassed the threshold in all conditions, indicating increased risk. TFL consistently generated higher temperatures than HoYAG, with normal kidneys accumulating more heat. Temperature rose rapidly without irrigation. Statistical analysis (two-way ANOVA) showed significant effects of laser type, kidney condition, and time on temperature ($p < 0.05$)

Conclusions: TFL produces more heat than HoYAG, particularly at higher power. Normal kidneys face greater risk due to limited heat dissipation. Continuous irrigation controls temperature effectively, but significant rises occur after irrigation stops. These findings emphasize the importance of managing laser settings and irrigation to ensure safety during lithotripsy

OP: 29

ACTUAL CLINICAL PRACTICE PATTERN IN SWL AFTER COVID-19 ERA: A CRITICAL EVALUATION FROM DIFFERENT ASPECTS

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Aim: To outline the current status of Shock Wave Lithotripsy (SWL) in stone treatment and the changes inthe mode of application after the COVID-19 pandemic along with critical factors affecting the clinicalpractice of SWL procedure.

Materials and Methods: This survey targeted national and international urology experts who could share and contribute theirexperiences and perspectives on SWL practices after COVID-19 era. Approximately 650 urologyspecialists were invited to participate in the research via Google Forms. Participation was voluntaryand a total of 398 participants completed the survey, yielding an acceptable response rate ofapproximately 61.23%.

Results: This survey highlights significant findings that shed light on changes in SWL practices. Nearly half of SWL procedures are performed by technicians or nurses instead of experienced urologists, potentially impacting the correct application and outcomes of the procedure. SWL's applicability is generallyassessed based on guideline (GL) indications. However, fluoroscopy remains the most commonly usedmethod for radiological assessment, underscoring the necessity to teach sonography applications toyounger urologists. Key reasons for the limited clinical application of SWL include the absence oflithotripters in departments, high system costs, and significantly lower reimbursement compared to PNL and fURS treatments. Finally, an increase in SWL utilization rates has been observed post-COVID-19, highlighting its advantages during this period. These findings provide important insights into the role of SWL in stone treatment and the factorsinfluencing its clinical application practices.

Conclusions: Although the popularity of SWL in the management of urinary stones is being stated to declineparticularly in the last two decades, data obtained in this survey emphasized well that it is still a viableoption especially for stones smaller than 15 mm. Our findings highlight the enduring relevance of SWL in contemporary stone therapy protocols in the context of COVID-19, where outpatient, non-invasive procedures are preferred. In addition to the consideration of certain factors affecting the rateof its application in clinical practice, to achieve high success rates with minimal complications in SWL, strategic patient selection and adherence to procedure guidelines seem to be crucial.

Keywords: SWL, Clinical practice patterns, COVID-19 impact, Survey

OP: 30

PEDIATRIC BILATERAL ACUTE URETERAL OBSTRUCTION FOLLOWING DEXTRANOMER/HYALURONIC ACID TREATMENT FOR VESICOURETERAL REFLUX: A CASE REPORT

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Vesicoureteral reflux (VUR) is a common cause of recurrent UTIs and renal scarring in children, often managed with antibiotics or surgery. Endoscopic injection of Deflux offers a minimallyinvasive alternative. We report a case of a 7-year-old boy with high-grade bilateral VUR who developed acutebilateral ureteric obstruction after Deflux injection. Despite an uneventful procedure, the patientexperienced severe abdominal pain, vomiting, urinary retention, elevated serum creatinine, andincreased hydronephrosis. Bilateral double-J stents were placed, resolving the obstruction. Follow-up cystoscopy showed resolving inflammatory masses at the uretero-vesical junction. After one year of observation, the patient remained free of UTIs and hydronephrosis. This case highlights the rare but serious risk of ureteral obstruction following Deflux injectionand the need for careful post-procedure monitoring.

Keywords: Vesicoureteral reflux (VUR), Deflux injection, ureteral obstruction, pediatric urology, recurrenturinary tract infection, hydronephrosis, double-J stent, renal scarring.

Figure 3 voiding cystourethrogram showed bilateral highgrade vesicoureteral reflux

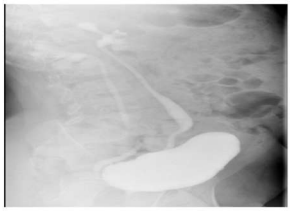

Figure 3 voiding cystourethrogram showed bilateral high-grade vesicoureteral reflux

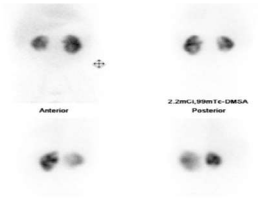

Figure 2 DMSA scan confirmed bilateral renal scarring

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Figure 5 Intra operative XR Showing bilateral double-J stent

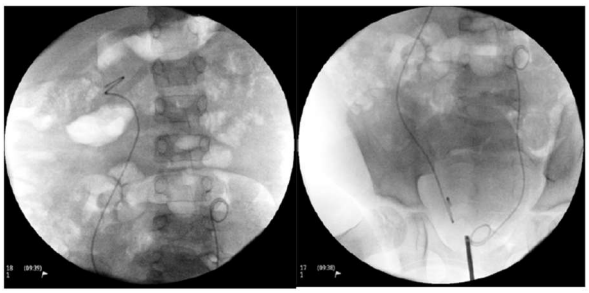

Figure 5 Intra operative XR Showing bilateral double-J stent

Figure 4 Ultrasound revealed increased bilateral hydronephrosis

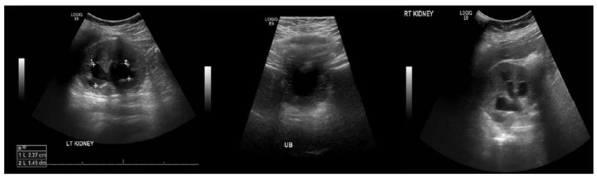

Figure 4 Ultrasound revealed increased bilateral hydronephrosis

Keywords: Vesicoureteral reflux (VUR), Deflux injection, ureteral obstruction, hydronephrosis, double-J stent

OP: 31

COMPARISON OF MINIMALLY INVASIVE PERCUTANEOUS NEPHROLITHOTOMY VERSUS RETROGRADE INTRARENAL SURGERY WITH FLEXIBLE AND NAVIGABLE SUCTION URETERAL ACCESS SHEATH (FANS) IN THE MANAGEMENT OF IMPACTED PROXIMAL URETERAL STONES

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Introduction: Management of large impacted proximal ureteral stones is often challenging due to the presence of mucosal edema, inflammation and angulations of the ureter and other factors which impede stone access, visibility and lithotripsy and can lead to different types of complications. The objective of our study is to compare the efficacy and safety of minimally invasive percutaneous nephrolithotripsy (mini-PNL) and retrograde intrarenal surgery (RIRS) with FANS in the treatment of impacted proximal ureteral stones.

Material and method: The medical records of 94 patients with impacted proximal ureteral stones 10-15 mm, treated between January 2020 – December 2024 were retrospectively reviewed. 43 patients (45.7%) underwent mini-PNL, and 51 (54.3%) – RIRS with FANS. Data on patients' preoperative characteristics, stone-free rates, operating times, intra- and postoperative complications were compared.

Findings: Patients' preoperative characteristics were comparable between the two groups, except for preoperative level of Hemoglobin and Stone Density (HU), which were significantly higher in the mini-PNL group (respectively, 147,3 ± 14,2 g/l vs 127,4 ± 14,7 g/l, p=0.000; and 1151,9±170,8 vs 1060,4±70,3, p=0.001). The stone free rate after single procedure was 93.0% for mini-PNL and 86,3% in the RIRS group (p=0,335). One patient (2.3%) in the mini-PNL group had significant hemorrhage necessitating selective renovasography and angioembolization of AV fistula and additional hemotransfusion. 3 (5,9%) patients had fever > 38,5oC postoperatively in RIRS group. Mean operative time was significantly longer in the RIRS group, despite the smaller size of the stones (respectively, 42,2±4,6min vs. 24,6±7,4min, p=0,000). There were statistically significant difference of the necessity of auxiliary procedures in the RIRS group (respectively, 34 patients (68,5%) vs 9 patients (20,8%), p=0.000).

Conclusion: Both RIRS with FANS and mini-PCNL are effective for managing proximal ureteral stones. Mini-PNL had better stone-free rates, shorter operative time and low percentage of auxiliary procedure and hospitalizations. However, fURS with FANS had the advantages of less invasiveness procedure and shorter postoperative hospital stay. Personalized treatment planning, taking into account patient and stone characteristics, is essential to optimize outcomes.

Keywords: minimally invasive percutaneous nephrolithotomy, retrograde intrarenal surgery, proximal impacted stone, FANS

OP: 32

PROGRESS IN PNL COMPLICATIONS OVER THE YEARS

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Introduction: Percutaneous nephrolithotomy (PNL) is the standard treatment for large/complex renal calculi, aiming for maximum stone-free status with minimal complications. A systematic review of 12,000 patients reported complication rates after PNL: fever (10.8%), transfusion (7%), thoracic complications (1.5%), sepsis (0.5%), organ injury (0.5%), embolization (0.4%), urinoma (0.4%), and death (0.05%). This study evaluates changes in PNL outcomes over time with advancements in surgical techniques and instruments in our clinic.

Methods: We included 258 patients from January 2018 to December 2024 who underwent PNL at the Giresun University Urology Clinic.

Results: The average age of patients was 52.7 (range 6-90 years), with a nearly half female/male ratio. 72.8% (188) had at least one comorbidity. 10.8% (28) underwent ECIRS. Double access was used in 5.4% (14), and tubeless PNL in 6.2% (16). From 2018-2021, balloon dilation was used in 18.3% (16), and 26F-28F amplatz sheath in 66.6% (58) of patients. After 2021, mini-PNL was introduced, with dilations reduced to ≤24F (11.524F). Therefore, the cases were grouped as before and after 2021.Of the 258 patients, 33.7% (87) were treated between 2018-2021, and 66.3% (171) between 2021-2024. ECIRS mostly replaced multitract PNL for multicalyseal stones after 2021. 12 patients (4.6%) needed postoperative blood transfusions, with fewer transfusions in 2021-2024. 3 patients (1.7%) between 2021-2024 and 9 patients (10.3%) between 2018-2021. (p=0.231). These 3 patients were antiaggregant users. Postoperative fever occurred in 5% (13) of patients, with a decrease from 9.1% (8) (2018-2021) to 2.9% (5) (2021-2024). Sepsis was reported in 1 patient (0.4%). Staghorn or multiple calyx stones were found in 38.4% (99) of patients. In a study of 87 patients between 2018 and 2021, 29 (33.3%) had staghorn/semistaghorn/multiple calyx stones. In the subsequent period from 2021 to 2024, the number of patients with staghorn/semistaghorn/multiple calyx stones was 70 (40.9%). Stone-free rate was 89.2%, with success rates of 91.9% (2018-2021) and 87.7% (2021-2024) (p>0.05).

Conclusions: Although instrument downsizing and new treatment combinations did not change the success rates of PNL, they significantly reduced complication rates, especially bleeding.

Table

Demographic Data Table

Characteristic	Total (n=258)
Mean Age (Years)	52.7
Female/Male Ratio	~1/2
Percentage of Patients with Comorbidities (%)	72.8% (n=188)

Statistical Outcomes Table (Including Blood Transfusion, Postoperative Fever, Sepsis, Staghorn Stones, and Stone-Free Rate)

Characteristic	2018-2021 (n=87)	2021-2024 (n=171)	Total (n=258)	p-Value
Blood Transfusion Requirement (%)	10.3% (n=9)	1.7% (n=3)	4.6% (n=12)	0.231
Postoperative Fever (%)	9.1% (n=8)	2.9% (n=5)	5% (n=13)	0.035
Sepsis (%)	0% (n=0)	0.4% (n=1)	0.4% (n=1)	1.000
Staghorn/Semistaghorn/Multiple Calyceal Stones (%)	33.3% (n=29)	40.9% (n=70)	38.4% (n=99)	0.229
Stone-Free Rate (%)	91% (n=79)	87.7% (n=150)	89.2% (n=230)	>0.05

Other Procedures and Clinical Outcomes Table (ECIRS, Double Access, Tubeless PNL, Balloon Dilation, Mini-PNL, and Amplatz Sheath Use)

Characteristic	2018-2021 (n=87)	2021-2024 (n=171)	Total (n=258)	p-Value
ECIRS Performed (%)	10.8% (n=28)	10.8% (n=28)	10.8% (n=28)	1.000
Double Access Performed (%)	5.4% (n=14)	5.4% (n=14)	5.4% (n=14)	1.000
Tubeless PNL Performed (%)	6.2% (n=16)	6.2% (n=16)	6.2% (n=16)	1.000
Balloon Dilation Performed (%)	18.3% (n=16)	-	-	-
Amplatz Sheath Use (%)	66.6% (n=58)	-	-	-
Mini-PNL Use (%)	-	100% (n=171)	66.3% (n=171)	-

Keywords: percutaneous nephrolithotomy, kidney stones, complications, ECIRS, stone free

OP: 33

THE THICKNESS OF THE URETERAL WALL AS A PREDICTOR OF SPONTANEOUS STONE PASSAGE IN ACUTE URETERAL COLIC: PROSPECTIVE AND MULTICENTRAL COHORT STUDY

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Introduction: The aim of the study to investigate the role of ureteral wall thickness (UWT) in predicting spontaneous stone passage (SSP) in the case of acute ureteral colic (AUC). Furthermore, factors that may affect UWT have been analysed.

Materals and Methods: A prospective and multi-central cohort study that enrolled patients with unilateral AUC from August 2021 to January 2022. Demographic, clinical, and radiological data based on noncontrast CT (NCCT) were correlated. The clinical outcome in view of SSP was studied in correlation to UWT ≤ 2.3. In addition, radiological variables based on NCCT were correlated to UWT.

Results: One hundred forty-two patients were included. 65 (46%) patients were treated with SSP. 60 (55%) patients with UWT≤ 2.3 pass stones spontaneously, compared to only 5 (15%) patients with UWT> 2.3 (p< 0.001). Direct stone characteristics such as stone maximum diameter, ureteric stone volume and stone density were statistically significantly and associated with UWT≤ 2.3 (5.8 mm [4-8], 0.07 cm3 [0.03-0.23], 710 HU [500-1029.5] respectively). In addition, the anterior-posterior (AP) diameter of the renal pelvis of 1.5 [1.15-2.1] was significantly associated with UWT ≤ 2.3 (p< 0.05). Other indirect stone characteristics, such as renal pelvis fluid density, grade of perinephric stranding, and the presence of extrarenal pelvis, were not significantly associated with UWT>2.3 (p> 0.05).

Conclusions: UWT≤ 2.3 is a strong predictor of SSP in AUC. Stone maximum diameter, stone volume, and hounsfield unit (HU) density strongly affect UWT. The AP diameter of the renal pelvis also indirectly affects UWT.

Keywords: ureteral wall thickness (UWT), spontaneous stone passage (SSP)., Acute ureteral colic (AUC), Medical expulsive therapy (MET)

OP: 34

OCCUPATIONAL HAZARD IN UROLITHIASIS PATIENTS IN QATAR: A SINGLE-CENTER CROSS-SECTIONAL STUDY

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Background: Urolithiasis is one of the mostprevalent urological diseases and is associated with a substantial economic burden. Its prevalence variesaccording to geographical location. Qatar is a Middle Easterncountry located in the Afro-Asian Stone Belt. It has a dry andhot climate, which may predispose individuals working in theseenvironments to form kidney stones (KSs).

Methods: A population sample of 2000 patients was categorizedinto five occupational classes. The frequencies and correlationsof these occupations with KS formation were calculated.

Results: Among the total cases, 2000 presented with KSs, withthe majority being of Asian descent (49%), followed by individu-als of Middle Eastern descent (35.1%). Technicians accounted for 35.15% of KS cases followed by clerks (29.2%) and execu-tives (14.6%). Among KS cases, 44% had a single stone, 30% had multiple stones, and 26% had two stones. In comparingboth KS and non-KS groups, age, gender, occupation, and racewere significantly associated with KS formation (p-value< 0.05), while BMI did not show any significant correlation (p-value > 0.05). Asian males aged 31-40, working as techni-cians, were significantly more prone to urolithiasis. In compar-ing age, BMI, and gender with stone characteristics, only agewas found significantly associated with stone size (p-value< 0.05). Occupation showed an impact on all studied stone char-acteristics. Clerks and technicians presented more frequentlywith stones within the 11-15 mm range, while executives morefrequently presented with smaller stones (p-value < 0.001). Stone density was more frequently < 500 HU in workers, tech-nicians and housewives and > 500 HU in executives and clerks (p-value < 0.001).

Conclusions: Our findings revealed an elevated risk of urolithia-sis among certain occupational groups, particularly technicians, who frequently work outdoors in high-temperature environ-ments. Alternatively, the sedentary nature of clerical and execu-tive positions can also contribute to the risk of urolithiasis.

Keywords: Occupational risk; Environmental factors; Geographic prevalence

OP: 35

CKD IN PATIENTS WITH CALCIUM OXALATE UROLITHIASIS

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Introduction & Objectives: Nephrolithiasis associated renal damage is an important potential contributor to the risk of CKD and has been investigated by numerus studies. Metabolic disorders such as hypercalciuria, hyperoxaluria and hypocitraturia are commonly diagnosed in calcium oxalate stone formers. The objective of this study is to compare the presence of metabolic disorders in calcium oxalate stone formers with CKD and normal renal function.

Materials & Methods: A prospective study on 111 patients with calcium oxalate urolithiasis was performed between January 2022 and July 2024. All patients underwent serum creatinine testing and eGFR calculation and metabolic evaluation with 24h-urine collection one month after endourological treatment or spontaneous stone elimination. The rate of hypercalciuria, hyperoxaluria and hypocitraturia in relation to CKD was analyzed. We define CKD as either kidney damage or a decreased glomerular filtration rate (GFR) of less than 60 mL/min/1.73 m2.

Results: CKD was found in 20(18%) of all patient, 11(9.9%) male and 9(8.1%) female. The incidence of CKD is high in patients with more than one recurrence- 12.6% vs 5.4% (first recurrence); 8(40%) of patient with family history of stone desease are with CKD. ; The most common comorbidity in patients with CKD is hypertension-10(50%). CKD was found in 0.9% of patient with hyperuricosuria, 9.9% of hypocitraturia, 9% of hyperoxaluria-high and moderate and 7.2% of hypercalciuria.

Conclusions: The results of our study suggest that calcium oxalate urolithiasis is associated with higher risk of CKD. The number of stone episodes is associated with a decrease in kidney function. Metabolic disorders such as hypercalciuria, hyperoxaluria and hypocitraturia are commonly found in calcium oxalate stone formers with CKD. Identification of risk factors for stone recurrence and intervention with appropriate treatment may prevent or reduce recurrence rates and risk of ESRD.

Keywords: Chronic kidney disease, Urolithiasis, Hypercalciuria, Hyperoxaluria, Hypocitraturia

OP: 36

THE EFFECT OF ALPHA BLOCKERS ON THE RESULTS OF URETEROSCOPIC LITHOTRIPSY IN PATIENTS WITH BENIGN PROSTATIC HYPERPLASIA

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Objective: This study aims to evaluate the effect of alpha blockers on the results of ureteroscopic surgery (URS) for ureteral stones in male patients with benign prostatic hyperplasia (BPH), a condition that complicates the ureteral access and resistance for ureteroscopes.

Materials and Methods: A retrospective review was conducted on male patients over 50 years old diagnosed with ureteral stones who underwent URS between March 2023 and December 2024. Patients using alpha blockers (Group I, n=32) were compared with non-users (Group II, n=29). Stone-free rates were assessed through CT scans on postoperative day 1 and/or month 1. <2 mm stones were considered stone free. Stone characteristics, prostate volumes, and complication rates were compared. Statistical analysis was performed using SPSS 27.0 with appropriate tests for numerical and categorical data.

Results: The mean age was 68.53±9.76 in Group I and 61.10±7.01 in Group II (p=0.001). Prostate volume was 36cc (20 - 120) and 30cc (18 - 70) for Group I and Group II (p=0.131). Median stone size was 8mm (4 - 18) and 9mm (4 - 45) (p=0.065). Median operation time and hospital stay was similar (p=0.79) / (p=0.82). Residual urine volume was lower in Group I (p=0.002). The stone-free rate was significantly higher in Group I (100%) compared to Group II (79.3%, p=0.009). There was no significant difference in ureteral access. Only 1 of 61 patients could not be accessed because of 'difficult ureter'. Complication rates were similar between groups (p>0.05), and prostate indentation grades were also similar (p=0.9). Group I had more severe IPSS scores (p=0.001), but Qmax values were similar (p=0.413).

Conclusion: The use of alpha blockers in BPH patients undergoing URS significantly increased the stone-free rate without affecting ureteral access or operative time. Further studies with larger patient cohorts are needed to confirm these findings.

table 1

Table 1

Characteristic	Group I (Alpha Blocker Users)	Group II (Non-Alpha Blocker Users)	p Value
Mean Age (Years)	68.53 ± 9.76	61.10 ± 7.01	0.001
Median Prostate Volume (cc)	36 (min: 20, max: 120)	30 (min: 18, max: 70)	0.131
Median Stone Size (mm)	8 (min: 4, max: 18)	9 (min: 4, max: 45)	0.065
Median Surgery Duration (min)	45 (min: 20, max: 90)	45 (min: 20, max: 150)	0.79
Median Hospital Stay (Days)	1 (min: 1, max: 9)	1 (min: 1, max: 10)	0.82
Residual Urine Volume	Lower	Higher	0.002
Stone-Free Rate	100%	79.3%	0.009
Ureteral Access	No significant difference (1 patient difficult ureter)	No significant difference	-
Prostate Indentation Degree	Similar	Similar	0.9
IPSS (International Prostate Symptom Score)	More Severe	Less Severe	0.001
Qmax (ml/s)	Similar	Similar	0.413
Postoperative Urinary Retention	Similar	Similar	p>0.05
Hematuria Rate	Similar	Similar	p>0.05
Complication Rate	Similar	Similar	p>0.05

Keywords: ureterorenoscopy, alpha blocker, benign prostatic hyperplasia, ureteral stones

OP: 37

ETHNIC DIVERSITY AND UROLITHIASIS: A SINGLE-CENTER EXPERIENCE

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Introduction: Despite the diversity in the prevalence and risk factors of urolithiasis across different geographicregions, limited information exists among various ethnic groups of the same population. Thisstudy investigates the prevalence of kidney stones (KSs) among different ethnicities in Qatar andthe risk factors associated with KS formation.

Method: This retrospective cross-sectional study was on Qatari residents who visited Al-Khor Hospitalbetween January 1, 2014 and December 31, 2019. All adult permanent residents who presentedwith KSs or visited the hospital for general check-ups and for whom the required data wereavailable were included.

Results: There was a highly significant difference in KS prevalence among ethnicities (p-value <0.001). The Egyptians had the highest prevalence of KSs (78.5%), followed by Qataris (65.0%), Palestinians (63.5%), Bangladeshis (59.4%), Syrians (55.9%), Jordanians (53.8%), and Yemenis (53.5%). However, no significant difference was found when comparing the different racesregarding urolithiasis (p-value = 0.19). Individuals with hypertension and diabetes mellitus had asignificantly higher prevalence of KSs (p-value = 0.001). Among patients with prior renalsurgery and positive family history, 59.9% and 70.5% had KSs, compared to 49.1% and 48.3%without previous surgery and negative family history (p-values = 0.002 and <0.001, respectively). Smoking, poor dietary intake, alcohol consumption, and severe exposure tosunlight were significantly associated with KSs (p-value <0.001).

Conclusion: Urolithiasis among the Qatari population is multifactorial and shows variation based onethnicity, with natives being the second most frequently affected group. Keywords: Renal, kidney, calculi, ethnicity, race, Afro-Asian stone belt

Keywords: Renal, kidney, calculi, ethnicity

OP: 38

EFFICACY AND SAFETY OF TWO DIFFERENT APPROACHES IN THE DRAINAGE OF THE UPPER URINARY TRACT IN ACUTE OBSTRUCTIVE UROPATHY

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Aim: To compare the results of retrograde ureteral stent (RUS) and percutaneous nephrostomy (PCN) procedures for decompression in patients with acute obstructive pyelonephritis. Patients and

Methods: Medical records of patients undergoing PCN or RUS for emergency urinary diversion because of obstructive pyelonephritis were evaluated retrospectively. Patients with urinary tract obstructionand concurrent fever (≥38°C), pyuria, and costovertebral angle tenderness were included and divided into two groups based on the type of emergency urinary drainage applied (PCN in Group 1) and (RUS in Group 2). Apart from the demographic data and Charlson Comorbidity Index, laboratory and radiologic examination outcomes were well evaluated.

Results: A total of 155 patients including 73 patients (47.1%) undergoing PCN (Group 1) and 82 patients (52.9%) undergoing RUS (Group 2). Although no significant difference was found regarding the demographic characteristics, the operation time, as well as fluoroscopy time, was significantly shorter in Group 1 cases when compared with those in Group 2 ($p < 0.0001$). The success rate was similar between the two groups, and there was also a significant difference regarding the complication rates in both groups of cases (5.5% vs 7.3%).

Conclusion: Our findings showed that despite similar efficacy and success rates noted between PCN and RUS applications in the emergency drainage of cases presenting with obstructive pyelonephritis, PCN application was found to be advantageous because of shorter operation and fluoroscopy durations. More importantly, this approach was associated with a significantly less need for intensive care during the postoperative period.

Demographic, Perioperative and postoperative data.

Parameters (mean ± SD	Group PCN n=73 (47.1)	Group RUS n=82 (52.9)	p
Age (year)	55.9 ± 7.8	54.8 ± 15.2	0.533
BMI (kg/m2)	26.7 ± 2.2	26.4 ± 2.6	0.448

CCI	1 ± 0.3	1 ± 0.1	0.533
Procalcitonin (ng/ml)	0.1 ± 0.1	0.1 ± 0.1	0.736
Operation Time (min)	20 ± 4.2	27 ± 8.4	**<0.0001**
Fluoroscopy Time (sec)	4 ± 1.4	6.3 ± 2	**<0.0001**
Hospitalization (days)	8.2 ± 4.5	7.8 ± 4.7	0.518
ICU requirement (n ; %)	2 (2.7)	10 (12.1)	**0.021**
Presence of Complications (n ; %)	4 (5.5)	6 (7.3)	0.750

Keywords: Stents, Percutaneous Renal Surgery, Obstruction, Urolithiasis

OP: 39

INITIAL SURGICAL OUTCOMES OF URETEROURETEROSTOMY: INDICATIONS, OUTCOMES, AND RE-OPERATION RATES

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Introduction: Ureteroureterostomy is performed in the management of ureteral injuries and ureteric strictures as well as ureteral duplication anomalies. Herein, we wanted summarize the outcomes of ureteroureterostomy procedures.

Methods: All ureteroureterostomy cases between January 2017 and January 2023 were retrospectively analyzed. The reason for performing ureteroureterostomy was noted. Preoperative serum creatinine level, estimated glomerular filtration rate, and hemoglobin levels were recorded. The intraoperative complication rate, the operation time, and the surgical technique preferred for surgery (open, laparoscopic, robotic) were noted. The postoperative complication rates and re-operation rates during follow-up were evaluated.

Results: A total of 15 patients with a median age of 58 years (IQR: 27.4 and 74.3) were included in the study. Twelve out of 15 patients were female. The reason to perform ureteroureterostomy was intraoperative ureteral invasion or damage during general surgery or gynecological operations in 7 cases (46.7%), ureteral duplication anomalies in 3 patients (20%), and ureteric strictures following previous surgeries or radiotherapy in the remaining 5 patients (33.3%). The preferred approach was open in 12 cases, while 3 patients underwent robotic ureteroureterostomy. Intraoperative complications during ureteroureterostomy occurred in only one patient (6.7%) via sealing the ovarian vascular structure during ureteric dissections, resulting in oophorectomy. The median operation time and length of hospital stay were 170 minutes and 4 days, respectively. Following surgery, an eGFR increase of 16.5 points (IQR: 2.3 – 28) was observed. At a median follow-up of 20.8 months, only 2 patients (13.3%) required a re-operation (DJ stent placement). No intraoperative complications or necessity for re-operation occurred in patients who underwent robotic ureteroureterostomy.

Conclusion: Ureteroureterostomy seems to be a safe and feasible procedure with acceptable morbidity and re-operation rates. Although current evidence regarding the efficacy of robotic ureteroureterostomy is limited, our initial experience with robotic ureteroureterostomy is promising.

OP: 40

FLEXIBLE AND NAVIGABLE SUCTION (FANS) VS. CONVENTIONAL UAS IN ROBOTIC RIRS: A SINGLE-CENTER EXPERIENCE

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Introduction and aim: In robotic-assisted retrograde intrarenal surgery (robotic-RIRS), the novel Flexible and Navigable Suction (FANS) Ureteral Access Sheath (UAS) integrates active suction with steerable navigation, aiming to enhance irrigation, stone clearance, and overall procedural efficiency. However, direct comparisons with conventional UAS (c-UAS) in robotic-RIRS remain limited. This single-center study aims to evaluate and compare the clinical and surgical outcomes of robotic RIRS using FANS versus c-UAS, determining whether integrating suction with navigability offers a measurable advantage.

Material and method: In this retrospective study, cases of robotic-RIRS performed between July 2023 and March 2025 at the Urology Department of Istanbul Faculty of Medicine were reviewed. Demographic data, imaging findings, pre and postoperative laboratory parameters were collected and analyzed. Participants were divided into two groups based on the type of UAS used: those who underwent RIRS with a conventional UAS (c-UAS) and those treated with the FANS UAS. Stone-free (SF) status was defined as the complete absence of residual fragments (zero fragments) and was confirmed by kidney–ureter–bladder (KUB) radiographs 24 hours postoperatively.

Findings: Of the 54 patients, 10 underwent robotic-RIRS with the FANS-UAS and 44 with the c-UAS. No significant differences were found between the groups in terms of age, sex, or BMI ($p > 0.05$) (Table 1). JJ stents were placed in 51.9% of patients for initial treatment, with no significant difference between the groups. Intraoperative complications occurred in three cases (two ureteral injuries, one pain episode). The overall SF rate was 77.7%: 75% in the c-UAS group and 90% in the FANS-UAS group, without statistical significance ($p > 0.05$). Two postoperative complications (bleeding and sepsis) were reported, both after c-UAS use. No significant differences were observed in stone diameter or operative time. Among laboratory parameters, only postoperative creatinine levels showed a significant difference favoring the

FANS-UAS group ($p < 0.05$)(Table 1). Both groups exhibited a significant decrease in hemoglobin and hematocrit levels postoperatively ($p < 0.05$)(Table 2).

Conclusion: The use of the FANS system in robotic-RIRS improved the SF rate without increasing the total operative time; however, the difference in SF rates between the groups was not statistically significant.

Table 1: Demographic and Clinical Characteristics of the Groups

	Total Participants (n=54)	Robotic-RIRS (n=44)	Robotic-RIRS with FANS (n=10)	p-value
Age (year)	47.2±13.1	48±13.5	43.6±1.4	0.301*
Sex				0.471**
Male	34 (62.9%)	29 (65.9%)	5 (50%)	
Female	20 (37.1%)	15 (34.1%)	5 (50%)	
BMI (kg/m^2)	28.1±5.4	28.1±5.2	28±6.5	0.972*
Side				**0.004****
Right	28 (51.9%)	17 (38.6%)	1 (10%)	
Left	26 (48.1%)	27 (61.4%)	9 (90%)	
JJ Stent Preoperatively				0.297**
No	26 (48.1%)	23 (52.3%)	3 (30%)	
Yes	28 (51.9%)	21 (47.7%)	7 (70%)	
Location				0.585**
Lower Calyx	15 (27.7%)	11 (25.1%)	4 (40%)	
Mid calyx	13 (24%)	12 (27.3%)	1 (10%)	
Upper calyx	9 (16.6%)	8 (18.1%)	1 (10%)	
Renal pelvis	17(31.7%)	13 (29.5)	4 (40%)	
Intraoperative complication				1**
No	51 (94.5%)	41(93.2%)	10 (100%)	
Yes	3 (5.5%)	3 (6.8%)	0 (0%)	

Stone Free	42 (77.7%)	33 (75%)	9 (90%)	0.426**
Postoperative complication				1**
No	52 (96.3%)	42(95.5%)	10 (100%)	
Yes	2 (3.7%)	2 (4.5%)	0 (0%)	
Stone Diameter (mm)	12.4 ± 4.7	12.7±4.6	11.1±4.8	0.361*
Total Operative Time (min)	128 ± 52.1	130 ± 56.82	123 ± 23.1	0.538*
Preop Hgb	13.6 ± 1.7	13.5 ± 1.6	14.2 ± 1.8	0.289*
Preop Hct	40.7 ± 4.2	40.4 ±4.1	42.2 ± 4.2	0.237*
Preop. Cre	0.97 ± 0.5	1 ± 0.5	0.8 ± 0.1	0.056*
Postop Hgb	12.4 ± 1.5	12.4 ± 1.5	12.8 ± 1.7	0.481*
Postop Hct	36.9 ± 3.9	36.8 ± 3.8	37.5 ± 4.1	0.607*
Postop Cre	0.99 ± 0.5	1.1 ± 0.5	0.8 ± 0.1	**0.010***

* T test, Mean ± SD

** Fisher's Exact

Table 2: Paired Comparison of Preoperative and Postoperative Creatinine, Hemoglobin, and Hematocrit Levels

Group	Variable	Mean Difference	95% Confidence Interval	p-value
Total Participants (n=54)	Cre	–0.023	–0.063 - 0.017	0.255
	Hgb	1.187	0.962 - 1.413	**<0.001**
	HCT	3.854	3.193 - 4.515	**<0.001**
Robotic-RIRS (n=44)	Cre	–0.037	–0.084 - 0.010	0.119
	Hgb	1.141	0.884 - 1.398	**<0.001**
	HCT	3.657	2.919 - 4.395	**<0.001**

Group	Variable	Mean Difference	95% Confidence Interval	p-value
Robotic-RIRS with FANS (n=10)	Cre	0.038	–0.032 - 0.108	0.249
	Hgb	1.390	0.857 - 1.923	**<0.001**
	HCT	4.720	3.065 - 6.375	**<0.001**

Cre: Creatinine (mg/dL)
Hgb: Hemoglobin (g/dL)
HCT: Hematocrit (%)

Although no intraoperative and postoperative complications were observed in Group 2, statistical comparison using Fisher's exact test was limited by small sample size and zero event frequency (p = 1.00)


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