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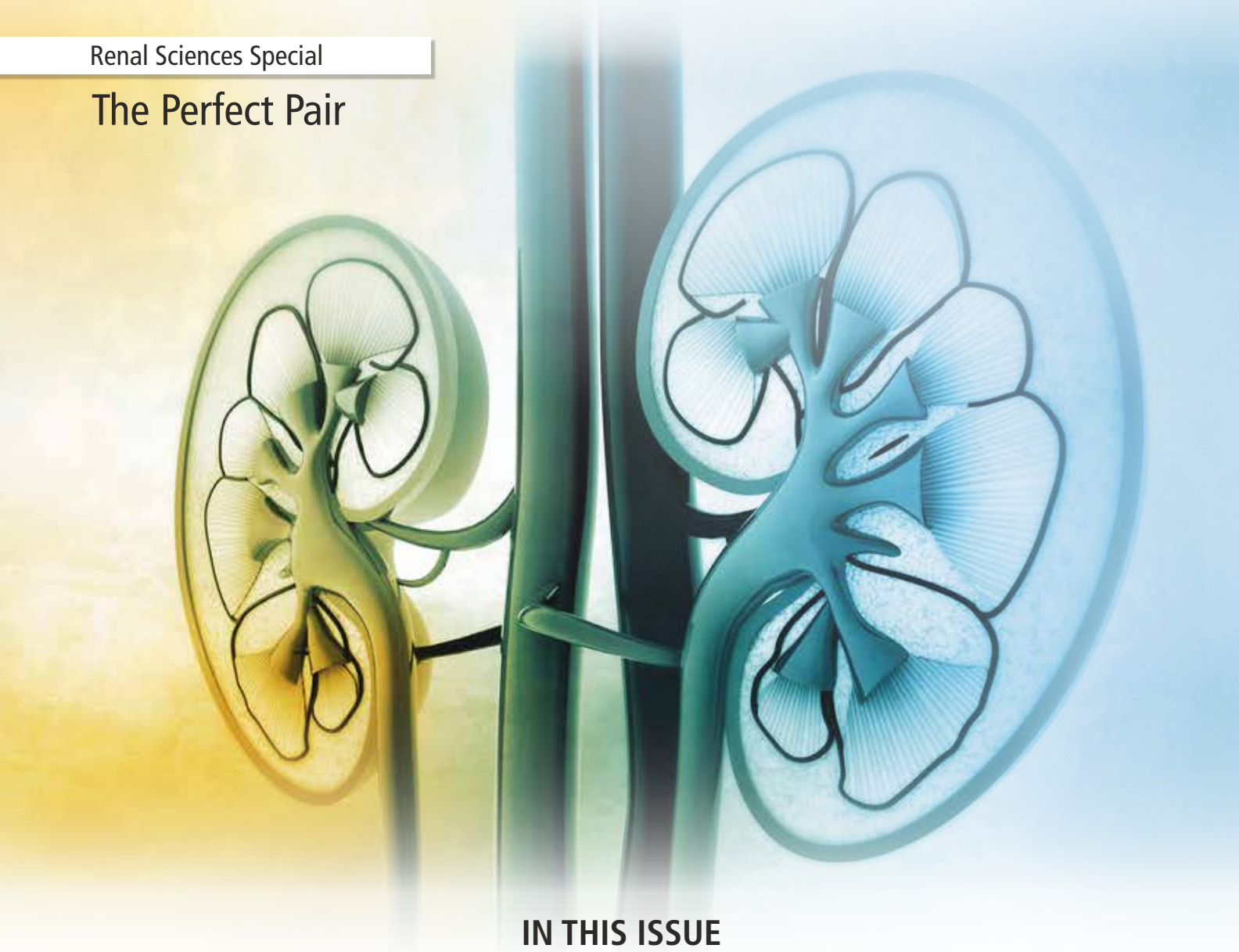
Renal Sciences Special

The Perfect Pair



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INSPIRATION

Message

Mr. Vivek Goyal
Chief Finance Officer

As healthcare professionals, our clinicians & healthcare workers are tasked with the responsibility of improving the health and well-being of our patients and the community at large. To achieve this, it is important that we create effective platforms to showcase our clinical capabilities, learn from each other's experience, & inspire the upcoming young clinicians towards clinical excellence - Clinical Connect is one such platform which has gained popularity amongst the clinical fraternity since its launch more than a year ago.

Leadership in the clinical field involves much more than just managing people and resources. It requires a deep understanding of the challenges facing the healthcare industry, a commitment to evidence-based practice, and a willingness to collaborate with other professionals and stakeholders; and most importantly to provide care with empathy.

At Fortis our endeavour is to create a culture of innovation, safety and continuous improvement. This means empowering our teams to think creatively and challenge the status quo, and providing them with the best possible equipment and environment to work comfortably and confidently. Like in previous years, this year too we have made ample budgetary allocation towards new technologies, better infrastructure, and capacity expansion to help provide quality care to our patients.

March being, "Kidney Awareness Month", this issue of Clinical Connect team is dedicated to the Renal Sciences. The importance of Renal Sciences in India cannot be outstated. The disease burden and economic cost of Chronic Kidney Disease and related problems are humungous, and our hospitals are at the forefront of delivering kidney care covering the entire spectrum from preventive to curative.

Happy Reading!

Please send your comments, feedback and suggestions to
clinical.connect@fortishealthcare.com

Message

Dr Mohan Keshavamurthy
Senior Director - Uro Oncology,
Uro Gynaecology, Transplant and Robotic Surgery,
Fortis Hospital, Bannerghatta Road, Bangalore

Renal Sciences has evolved over the last three decades with technology and innovations revolutionising practice. Robotic surgery has transformed Urology, Uro-oncology and Kidney Transplant with short length of stay, pain free recovery and outstanding outcomes. It is a matter of great pride that Fortis has the largest volume of robotic surgery done in the country on the Da Vinci platform on an annual basis.

Dialysis machines and techniques have evolved to provide cost effective treatment with individualised prescriptions. Preventive nephrology has come to the forefront with the burgeoning diabetic population.

Kidney transplant, especially deceased donor volumes, are low as compared to the need. However, Fortis is at the forefront in providing kidney transplantation across it centres encompassing the whole country. Fortis Hospitals, Bengaluru, is a regional leader in Robot-enabled kidney transplant recipient surgery both in the adult and paediatric patients.

Cheaper robots, collaborative practice across the various verticals of Renal Sciences, Telemedicine and Dialysis hubs should enable us to provide pristine care even in secondary cities and remote areas on the Fortis platform in the years ahead!

Would take this opportunity to wish my colleagues and their families a healthy and fulfilling year ahead.

Message

Dr Sanjeev Gulati
Principal Director - Nephrology and Kidney Transplant,
Fortis Escorts, Okhla and Vasant Kunj, New Delhi

As President of Indian Society of Nephrology, I extend my warm greetings to all my senior colleagues as well as my students in different teams across Fortis Healthcare.

I am proud to say that this organization has always been committed to excellence in patient care and research. It also boasts of some of the best nephrologists and urologists in the country who have expertise in managing patients with all kinds of complex kidney problems underlying kidney transplant. Over the last decade there have been tremendous improvements in field of kidney diseases with new agents being made available in our therapeutic armentaruim.

The Clinical Connect is a unique initiative by Fortis Healthcare that allows us to share our research work as well as expertise. It also sows the seeds for Pan Fortis research and collaboration.

I request each one of us to optimize the use of this platform so that we can continue to make significant contributions in care of kidney patients of our country.

RENAL SCIENCES SPECIALTY COUNCIL

Renal Sciences Specialty Council

Dr Mohan Keshavamurthy - Chair
Senior Director – Uro Oncology, Uro Gynaecology, Transplant and Robotic Surgery, Fortis Hospital, Bannerghatta Road, Bangalore

Dr Ajit Singh Narula
Principal Director - Nephrology and Kidney Transplant, Fortis Escorts, Okhla Road, New Delhi

Dr Sanjeev Gulati
Principal Director - Nephrology and Kidney Transplant, Fortis Escorts, Okhla and Vasant Kunj, New Delhi

Dr Arup Ratan Dutta
Director - Nephrology, Fortis Hospital & Kidney Institute, Kolkata

Dr Shivaji Basu
Director - Urology, Fortis Hospital & Kidney Institute, Kolkata

Dr Mukut Minz
Director - Renal Transplant, Fortis Hospital, Mohali

Dr Rajanna Sreedhara
Senior Consultant - Nephrology, Fortis Hospital, Bannerghatta Road, Bangalore

Dr Haresh Dodeja
Director - Nephrology and Transplant Services, Fortis Hospital, Mulund

THE WAY FORWARD

Simultaneous Bilateral Endoscopic Surgery for Bilateral Renal Stones

Dr Mohan Keshavamurthy
Senior Director - Uro Oncology,Uro Gynaecology, Transplant and Robotic Surgery, Fortis Hospital, Bannerghatta Road, Bangalore

Dr Shakir Tabrez
Additional Director - Uro Oncology, Uro Gynaecology, Transplant and Robotic Surgery, Fortis Hospitals, Bangalore

Dr Mohan Balaiah Aswathaiya
Consultant - Uro Oncology and Renal Transplant Surgery, Fortis Hospital, Cunningham Road, Bangalore

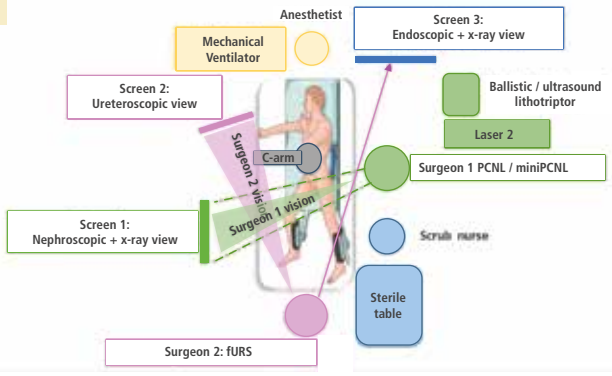
Dr Shreyas Nagaraj
Consultant - Uro Oncology, Transplant and Robotic Surgery, Fortis Hospital, Cunningham Road, Bangalore

Dr Vishal
Consultant - Urology, Andrology and Transplant Surgery, Fortis Hospital, Cunningham Road, Bangalore

Bilateral renal stones requiring flexible ureteroscopy (FURS) on one side and percutaneous nephrolithotomy (PCNL) on the other side have been a clinical challenge for operating urologists. Traditionally, the urologist would prefer to operate one side at a time and plan surgery on the other side after a duration of few weeks due to different positions required for each procedure - lithotomy position for FURS and prone position for PCNL. Recently, PCNL has been done in supine or modified supine position. This has made it possible to perform FURS and PCNL in the same position. Adapting this to treat a patient with bilateral renal stones requiring FURS on one kidney and PCNL on another kidney in the same sitting by two urologists operating simultaneously is possible. This innovation in treating bilateral renal stones has been called Simultaneous Bilateral Endoscopic Surgery. We report one such successful procedure done at Fortis Hospital, Cunningham Road, Bengaluru.

Case Report

A 56-years-old lady with hypertension presented with bilateral flank pain for a duration of two weeks. She was evaluated with a non-contrast CT scan of abdomen and pelvis which showed a right renal pelvic calculus measuring 14mm with mild hydronephrosis and a left renal calculus 25mm. Renal function was normal. Urine was sterile. She required right flexible ureteroscopy (FURS) and left percutaneous nephrolithotomy (PCNL). The patient was counselled for simultaneous FURS and PCNL. Informed consent was taken. Under general anesthesia, the patient was positioned in a modified supine position. (Fig. 1) The equipment including two sets of cameras, monitors, endoscopes, laser, lithotripter and other accessories were set up. One urologist standing in between the legs of the patient performed FURS on the right kidney stone by passing flexible ureteroscope through the urethra. Simultaneously, another urologist performed left PCNL by standing on the left side of the patient using a separate set of camera, monitor, nephroscope and lithotripsy equipment. Both the procedures were done under



Published in European Urology 2018
Simultaneous Bilateral Endoscopic Surgery (SBES) For Patients With Bilateral Upper Tract Urolithiasis: Technique And Outcomes

Figure 1: Simultaneous Bilateral Endoscopic Surgery (SBES): OR Setup fURS- Flexible Ureteroscopy; OR- Operating Room; PCNL Percutaneous Nephrolithotomy

Figure 2: Simultaneous Bilateral Endoscopic Surgery being done on a patient by two urologists operating simultaneously with separate set of equipment

guidance of C-arm placed on the right side of the patient helping to image both the kidneys during the respective used for PCNL. After successful fragmentation of stones, bilateral ureteric stenting was done. No drain was placed. Total operative time was 60 minutes. Patient had an uneventful post-op period. She was discharged after 24 hours. After 2 weeks, ultrasound abdomen and pelvis showed complete clearance of stones. Bilateral ureteric stents were removed.

Conclusion

Simultaneous Bilateral Endoscopic Surgery is an innovative and safe procedure to treat patients with bilateral kidney stones.

You Are a Man and Have Turned 55; Should You Get Your PSA Done?

Scan QR Code for more

Dr Anil Mandhani
Executive Director and Head - Urology,
Fortis Memorial Research Institute, Gurugram

According to the population-based national cancer registry in India, prostate cancer is the second most common male cancer in Kolkata, third in Delhi, Mumbai, Pune, Patiala, and Bengaluru, and fifth in Chennai and Bhopal. Although this may not represent the true incidence in the population, it gives a better understanding of the disease spectrum of prostate cancer in India. Population-based screening with prostate-specific antigen (PSA) for detecting prostate cancer in its early stages is standard practice. This has resulted in stage migration from metastatic to localized disease at presentation. Despite this stage of migration, the impact of screening on improving survival has been controversial. Due to the lack of population-based screening in India, most urologists resort to opportunistic screening, i.e., obtaining a PSA test in men with lower urinary tract symptoms (LUTS). Further, many asymptomatic men are also screened for prostate cancer within the purview of an executive health check-up.

The question asked here is whether screening really helps! The answer would not be simple till we have data on population-based screening. Two data sets on symptomatic and executive health check screening published in the Indian journal of urology could be a useful guide to drawing some logical conclusions for recommending screening.

A total of 9906 patients with a mean age of 64.6 ± 7.6 as Group A and 24919 healthy men with a mean age of 58.4 ± 8.1 years as Group B were analyzed. PSA positivity rate was higher in symptomatic men 28.4% vs. 3%. ($P < 0.0001$) and so was the cancer detection rate i.e. The cancer detection rate for men with PSA between 410 ng/mL was significantly higher in Group B compared with Group A ($P = 0.0001$). Opportunistic screening detected most of the cancers in metastatic (61.5%) and high and very high-risk stage (29.2%) but none of the men in executive health check had presented in metastatic stage. Nearly half of the cancer (47.34%) on presentation had Gleason grade group 4/5 in Group A vis a vis 14.8% (7/47) in Group B ($P = 0.001$). Although the biopsy yield was higher in men having executive health checks, the incidence of metastatic disease at the time of screening was significantly lower than that in symptomatic men.

Though population-based screening may not be justified due to over-diagnosis and over-treatment, opportunistic screening has brought down the proportion of men detected in the metastatic stage in comparison to the pre-PSA era (before 1990).

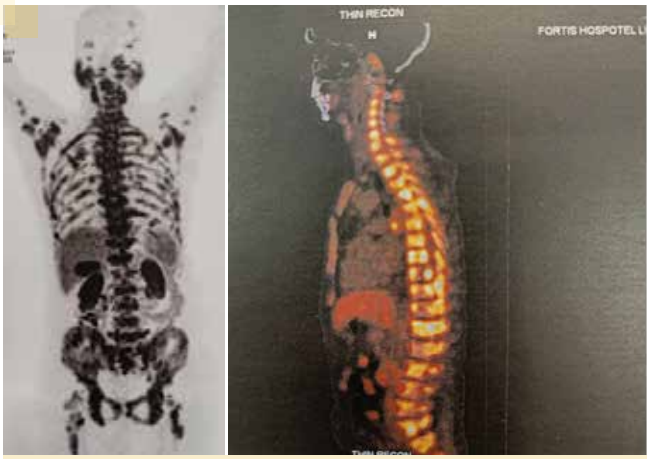


Figure 1 and 2: 71-year-old male presented with back ache and found to have PSA of 8000 and super scan with multiple metastasis.

Interestingly, none of the healthy men screened was found to have metastatic prostate cancer. This is a very large supportive data set to say yes to having a PSA test done and with the improving quality of MRI and PSMA, one may not need to jump to biopsy even if PSA is raised.

Reference

Mandhani A, Mittal V, Bhaskar V, Srivastava A. Prostate-specific antigen screening of men with lower urinary tract symptoms (opportunistic screening) and of asymptomatic men undergoing executive health check: an audit from two institutions. Indian J Urol. 2021 Apr-Jun; 37(2): 159–162

Prevalence and Outcome of Systemic Fungal Infections in Renal Transplant Recipients - A Tertiary Care Experience

Scan QR Code for more

Dr Renuka Prasad Yelahanka
Consultant - Nephrology,
Fortis Hospital, Cunningham Road, Bangalore

Co-Authors
Manikantan Shekar[1], Ramprasad Elumalai[2], Indhumathi Elayaperumal[2], Deepashree G. Anandkumar[4], Varun Kumar Bandi[5], Jayakumar Matcha[2]

[1]Department of Nephrology, Sri Ramachandra Medical College,
[2]Department of Nephrology, Sri Ramachandra University, Chennai, Tamil Nadu,
[4]Department of Nephrology, Apollo Hospitals, Bengaluru, Karnataka,
[5]Department of Nephrology, Dr. Pinnamaneni Siddhartha Institute of Medical Sciences, Gannavaram, Andhra Pradesh, India

Abstract

Fungal infections are an important cause of morbidity and mortality in renal transplant recipients. These infections account for 5% of all infections in renal transplant recipients. The symptoms of systemic fungal infections are nonspecific, particularly in their early stages, and this can lead to delay in diagnosis. Retrospective analysis was conducted on all renal transplants that were performed at our center over a 20-year period from 1996–2016. Cases of invasive fungal infections (IFIs) that occurred among renal transplant recipients were identified to describe the epidemiology of these infections. A total of 67 (9.2%) IFI cases were identified among 725 renal transplant recipients. Of the 67 patients (9.24%) with IFI, 31 (46.2%) cases were seen in deceased donor transplant recipients. Of 67 cases with IFI, 42 (62.7%) had received induction therapy, with 14.3% receiving basiliximab, 12.3% each receiving daclizumab and rabbit antithymocyte globulin, and 6.3% were not given any induction. Invasive candidiasis was the most common IFI overall, followed by mucormycosis, invasive aspergillosis, and cryptococcosis. Median time to onset of IFI was 117.9 days. Majority of infections occurred within 180 days after transplantation. Late posttransplant (>180 days after transplantation) IFI's were predominantly caused by Candida, followed by Cryptococcus. The longest time to infection was a case of histoplasma, occurring seven years posttransplant. The overall 12-month cumulative incidence (CI) for any IFI was 9.1%. The 12-month CI of the first IFI increased from 7.3% between 1996 and 2001 to 10.5% between 2010 and 2016. The overall mortality rate was 38.8%. The use of newer and more-effective immunosuppressive agents in recent years are associated with increased rates of fungal infections in renal transplant recipients. Therefore, early detection of fungal infections and proper therapy are important in

improving survival and reducing mortality.

Conclusion

The advancement in the field of transplant has led to increasing number of organ trans-plant recipients, with better survival rates. This has also led to increased prevalence of infections, including IFIs. High index of suspicion, with early detection and appropriate therapy are imperative for improving the outcomes of such patients.

As the diagnostic procedures are not very sensitive, there is a need for development of quantitative tests which can identify the nucleic acids or their proteins and enhance the diagnostic accuracy. Investigations which are not dependent on invasive procedures for sampling, and which are based on detection of the antigens, or the molecular techniques are needed. Such tests would help the physician to guide and individualize anti-fungal therapy, thereby reducing the toxicity of these agents.

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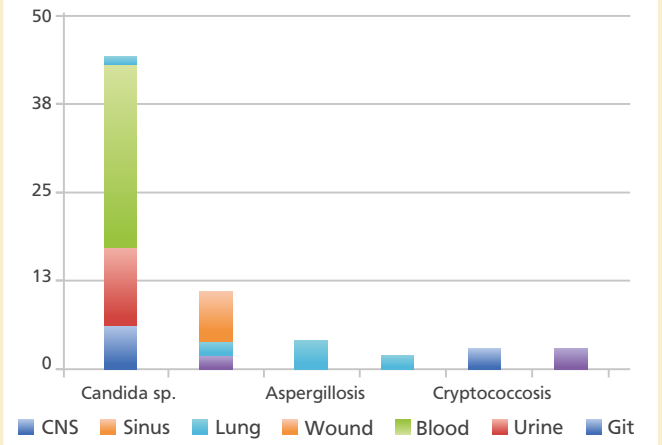

Figure 1: Site of infection

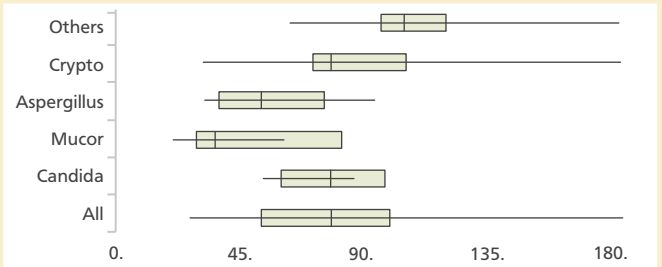

Figure 2: Time to diagnosis

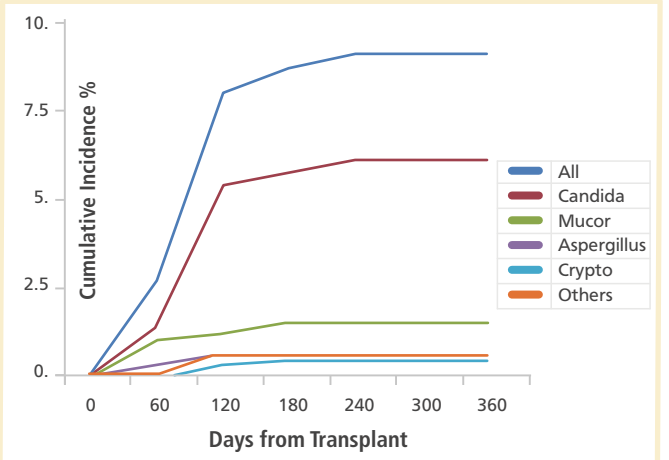

Figure 3: Cumulative incidence

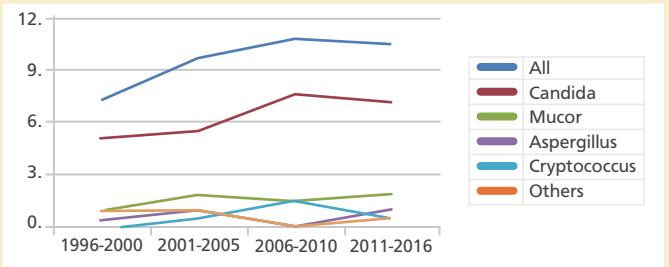

Figure 4: Invasive fungal infections incidence across cohorts

Table 1. Incidence of IFIs based on type of transplant and Induction agent used.

Infection	Total, n (%)	Live	Spousal	DDRT	Dac	Bax	rATG
All	67 (100)	51	26	16	24	10	8
Candida	44 (66)	71%	69%	50%	75%	30%	63%
Mucor	11 (16)	16%	19%	19%	13%	30%	25%
Aspergillus	4 (6)	6%	4%	6%	0%	10%	13%
Histoplasma	2 (3)	2%	4%	6%	4%	10%	0%
Cryptococcus	3 (4)	4%	4%	6%	4%	10%	0%
Others	3 (4)	2%	0%	13%	4%	10%	0%
Total	67	100%	100%	100%	100%	100%	100%

DDRT : Deceased donor renal transplant, Dec: Daclizumab, Bax: Basiliximab, rATG: rabbit antithymocyte globulin.

TECHNOLOGY & INNOVATIONS

Equipment: BK Fusion Ultrasound Machine (BK 5000)

Mr Tarun Deep Katyal
DGM - Medical Strategy and Operations (MSOG),
Fortis Corporate Office, Gurugram

Mr Vipin Kumar Singh
Manager - Bio Medical Engineering,
Fortis Corporate Office, Gurugram

Make: BK Medical

Location: Fortis Hospital, Bannerghatta Road, Bangalore

Key Features:

1. State-of-the-art machine with latest technology patented technology for measuring and guiding biopsy/surgical procedures.
2. Automatic measurement and short testing time.
3. Advanced modes such as elastography, contrast imaging, 3D, Vector Flow Imaging.
4. The BK 5000 also features a remote control for convenient and effective operation in the sterile field.
5. TrueColor dynamic colour flow allows visualization of high resistance blood flow patterns in the blood vessels.
6. Immediate, auto-optimized imaging using the No-touch Autogain and Auto Focus features.
7. Compatible with BK Fusion: Fully integrated MRI-US fusion technology for prostate biopsies.
8. Unique Vector Flow Imaging (VFI) mode that enables angle-independent visualization of blood flow.
9. Contrast imaging that facilitates visualization of difficult lesions.
10. Elastography, an advanced imaging technique that allows you to see differences in tissue stiffness.
11. All type of Intraoperative advanced laparoscopic, intraoperative, end cavity and percutaneous transducers.

Equipment: Urodynamic Machine (Solar Blue)

Mr Tarun Deep Katyal
DGM - Medical Strategy and Operations (MSOG),
Fortis Corporate Office, Gurugram

Mr Vipin Kumar Singh
Manager - Bio Medical Engineering,
Fortis Corporate Office, Gurugram

Make: Equipment: Urodynamic Machine (Solar Blue)

Location: Fortis Memorial Research Institute, Gurugram; Fortis Hospital, Vadapalani, Chennai; Fortis Hospital, Anandapur, Kolkata

Key Features:

1. State-of-the-art machine with latest technology with wireless connectivity for measuring Uroflowmetry.
2. Compact system with wireless connectivity.
3. Urethral Pressure Profilometry (UPP) with Anorectal Manometry.
4. Solar Blue is designed to become part of a network. This makes it possible to enter patient data, perform investigations and analyze results on different PCs in different locations.
5. EMR Connectivity.
6. Biofeedback Compatibletransducers.

A New Indwelling Catheter: A Way Forward in Urethral Catheterization

Dr Anil Mandhani
Executive Director and Head - Urology,
Fortis Memorial Research Institute, Gurugram

Urethral catheterization is a procedure performed by health professionals across specialties to drain urine from the bladder. About 15-25% of hospitalized patients may need urethral catheterization during their hospital stay for several reasons like retention of urine, monitoring of urine output, or as an adjunct to the surgical procedure under anesthesia.

Iatrogenic urethral injury during catheterization is not uncommon. It usually happens in males due to their anatomical variations i.e., longer urethra and presence of prostate en-route. The reported incidence is about 6.7 to 13.4 per one thousand catheterization1-3 In real-life practice, the incidence of urethral injury is much more than what is reported in literature.

Urethral injury once it occurs may give a new disease to the patient for life in the form of an urethral stricture. There has been no design change in Foley catheter for the last 80 years and there is no definite way to know that balloon is in the bladder while inflating it; this invariablely results in inadvertent inflation of the balloon in the prostatic or bulbar urethra and resultant urethral injury. (Fig. 1)

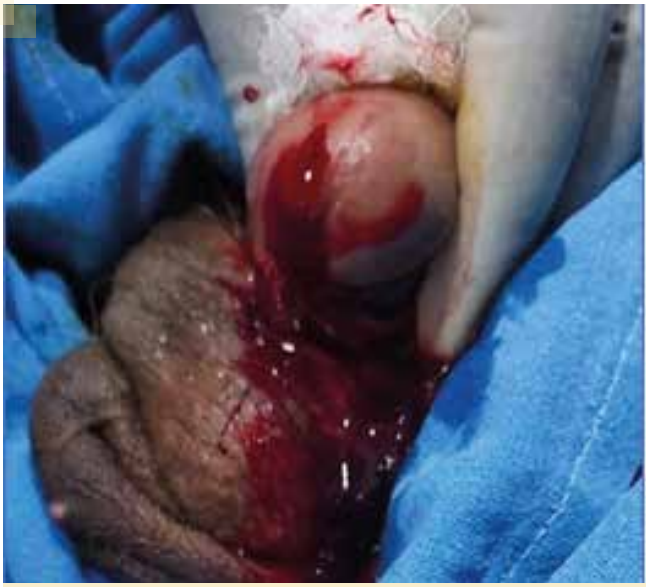

Figure 1: Patient who had inadvertent inflation of the balloon in the urethra leading to urethral injury

We have developed an innovative design of an indwelling urethral catheter to make sure that the balloon is inside the bladder while inflating it. (Fig 2) This would eliminate the related urethral injury.

Figure 2: AmSafex indwelling urethral catheter

AmSafeX Indwelling Urethral Catheter

The usual location of the drainage eye in a Foley catheter is at the distal end of the catheter which is about 3 cm away from the balloon. In AmSafeX urethral catheter (Fig 3), this distal drainage eye (1 in Fig. 2) is closed with an obturator (3 in Fig. 3) attached to the string (5 in Fig. 3) coming out through the drainage port. (7 in Fig.3) The additional eye (4 in Fig. 3) is present proximal to the balloon (2 in Fig. 3), which would drain urine and would always ensure that the balloon is inside the bladder eliminating the chance of urethral injury.

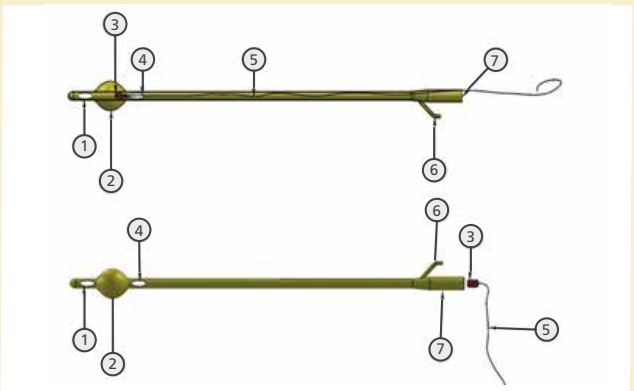

Figure 3: Am-SafeX catheter has an additional eye (4) proximal to the balloon (2) apart from a distal one (1). There is an obturator (3), distal to the proximal eye (4) and is attached by a string (5). Obturator (3) blocks the drainage from the distal eye and urine drains from only the proximal eye (4) ensuring the bulb to remain inside the bladder

Urethral Catheter Insertion Protocol

Standard instructions were given to follow iSIP protocol of urethral catheterization with this new Am Safe-X catheter. i: Insert the catheter, S: see urine at the catheter outlet I: inflate the balloon with 10 cc of water and P: pull out the obturator. Fig. 3

In-House Study

We have used this catheter in more than 100 male patients after IRB and ethical committee approval and

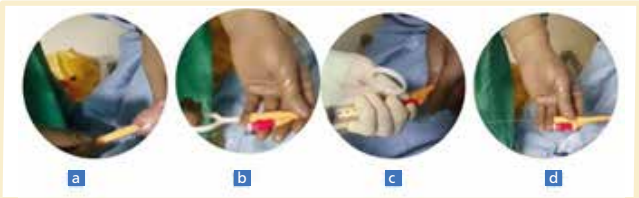

Figure 4: iSIP protocol of catheterization with an indwelling amSafeX urethral catheter insertion: a: insert the catheter, b: see urine at the drainage port, c: inflate the balloon, and then d: pull out the obturator.

established the safety and efficacy of the catheter. Presence of an additional eye is of no consequence.

Inflation of the balloon of the Foley catheter can generate pressures up to 700kPa, which is far more than the pressure required to cause urethral rupture. There is no way to know that the Foley balloon is in the bladder, while inflating it. The AmSafeX catheter has an innovative design with two eyes, one distal and another proximal to the balloon. Wherein, the distal drainage eye is temporarily blocked by an obturator with a bulbus end attached to a string coming out of the catheter.

Am SafeX-am follows the same steps of catheterization but takes away the risk of inflating the balloon in the urethra and resultant urethral injury.

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Suction Spatula: A New Device to Help Do Minimally Invasive Partial Nephrectomy

Source: https://doi.org/10.1093/mmy/myac072.P204

Dr Anil Mandhani
Executive Director and Head - Urology,
Fortis Memorial Research Institute, Gurugram

Active retraction and suction irrigation, while cutting around the tumor are the two important steps of partial nephrectomy for small renal tumors either laparoscopic or with robot assistance. Often retraction and suction irrigation require two different instruments i.e., an additional hand. Retraction at times violates the tissue planes. Herein, we describe a new modification in suction irrigation device to help achieve better retraction and a clean surgical field.

We have designed a new tool to serve these two purposes. It is called suction spatula. It is a detachable tube of 8 cm length with a curved and flat tip with multiple holes in it. (Fig 1)

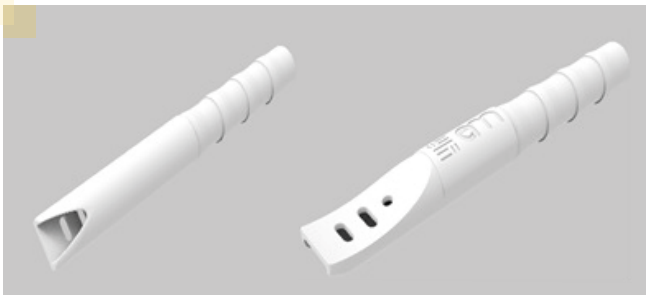

Figure 1: Sanction spatula

This could be fixed to a 10mm suction cannula. This device could be used in laparoscopic and robot-assisted partial nephrectomy. For laparoscopy, this could be used in non-dominant hand of the operating surgeon for simultaneous retraction and suction irrigation, while in robot assisted surgery, a bed side assistant helps with this.

Though the ease of doing surgery could not be quantified, this device helps in getting a clean surgical field for better visualization of segmental vessels for clipping and haemostasis. This helps in finding correct surgical planes to get negative surgical margin.

So, in nutshell, suction spatula has the dual function of suction and retraction, which helped in getting simultaneous retraction and suction irrigation to get a clean surgical field to have margin-free resection of the tumor. (Fig. 2)

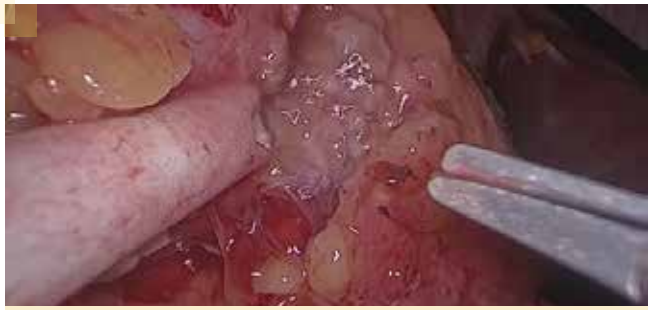

Figure 2: Sanction spatula being used in surgical field while doing partial nephrectomy

THE WAY WE DO IT AT FORTIS

Supine Versus Prone Percutaneous Nephrolithotomy -A Randomized Comparative Study

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Dr Sreeharsha Harinatha
Additional Director - Uro Oncology, Uro Gynaecology, Transplant and Robotic Surgery, Fortis Hospital, Bannerghatta Road, Bangalore

Dr Premkumar Krishnappa
Senior Consultant - Uro Oncology, Transplant and Robotic Surgery, Fortis Hospitals, Bangalore

Dr Karthik Rao
Consultant - Uro Oncology, Transplant and Robotic Surgery, Fortis Hospital, Bannerghatta Road, Bangalore

Dr Basavaraja Neelagar
Senior Consultant - Uro Oncology, Transplant and Robotic Surgery, Fortis Hospital, Bannerghatta Road, Bangalore

Dr Santosh Kumar Subuddhi
Consultant - Uro Oncology, Transplant and Robotic Surgery, Fortis Hospital, Bannerghatta Road, Bangalore

Dr Mohan Keshavamurthy
Senior Director - Uro Oncology, Renal Transplant and Robotic Surgery, Fortis Hospital, Bannerghatta Road, Bangalore

Dr Shakir Tabrez
Additional Director - Uro Oncology, Uro Gynaecology, Transplant and Robotic Surgery, Fortis Hospitals, Bangalore

Abstract

Percutaneous Nephrolithotomy (PCNL) is the standard procedure for large renal stones. This study was conducted to compare the conventional Prone position PCNL with the newer concept of Supine PCNL. A prospective, randomised controlled, double blind study was conducted in 100 patients planned for PCNL. They were randomised into 2 groups with 50 patients each and PCNL was performed either in the prone or supine position.

The patient groups were compared for the length of hospital stay, duration of surgery, postoperative and intra operative complications, postoperative stone free status, and requirement of adjunctive procedures.

Stone free rates were significantly better for the supine PCNL group. Post-operative complications such as fever

Patient Characteristics	Supine	Prone	P Value
SAMPLE SIZE (n)	n=50	n=50	
Gender (%Male /%Female)	56%/44%	64%/36%	0.2538
Age in Years (Means/SD)	45.72(15.3)	47.72 (14.28)	0.5024
BMI (Mean/SD)	24.6 (5)	24 (3.55)	0.4923
Duration of stay	2.84 (1.45)	2.98 (1.96)	0.6865
INVESTIGATION - CT SCAN			
Mean stone diameter (SD)	2.85 (1.22)	3.65 (1.78)	0.0116
Min / Max Stone Diameter	1 / 3.4	1.1 / 7.02	
Number of Stones			
Single (Number with percentage)	39 (78%)	35 (70%)	0.2032
Multiple (Number with Percentage)	11 (22%)	15 (30%)	0.2032
Guys stone score (Mean/SD)	1.9 / 1.3	2.1 / 1.23	0.4332
Anatomic abnormality	2 (4%)	1 (2%)	0.4111
Simultaneous ureteral stone	6(12%)	6 (12%)	1.0000
Intraoperative parameters			
a. Tube requirement			
I. Tube (Number with Percentage)	27 (54%)	40 (80%)	0.0003
ii. Tubeless (Number with Percentage)	23 (46%)	10 (20%)	0.0003
b. Duration of surgery (Mean/SD)	101.74 (54.38)	102 (35.10)	0.9775
c. Number of punctures (Mean/SD)	1 (0)	1.24 (0.52)	0.0020
d. Radiation exposure duration (Mean/SD)	5.09 (1.89)	4.78 (2.02)	0.4319
e. Fall in hematocrit (Mean/SD)	5.566 (3.74)	5.254 (3.84)	0.6831
f. Requirement of blood transfusion	7 (14%)	6 (12%)	0.6759
g. Intraoperative complications	1 (2%)	1 (2%)	1.0000
h. Approach			
i. Sacricostal - number and percentage	1(2%)	0 (0%)	0.1616
ii. Subcostal - number and percentage	49 (98%)	50 (100%)	0.1616
Post-operative parameters			
a. Stone clearance (Percentage)	38 (76%)	30 (60%)	0.0190
b. Requirement of second stage pcn1/ancillary procedures	4 (8%)	4 (8%)	1.0000
c. Complications			
I. Clavien Dindo grade (Mean/SD)	1.28 (0.73)	1.28 (0.67)	1.0000
CDG 1	42 (84%)	41 (82%)	
CDG 2	4 (8%)	5 (10%)	

Figure 1a: Supine vs Prone PCNL

Patient Characteristics	Supine	Prone	P Value
CDG 3	2 (4%)	3 (6%)	
CDG 4	2 (4%)	1 (2%)	
CDG 5	0 (0%)	0 (0%)	
ii. Fever	0 (0%)	4 (8%)	0.0058
iii. Blood transfusion requirement	7 (14%)	6 (12%)	0.6759
iv. Pain score (Mean / SD)	4.04 (1.6)	4.72 (1.64)	0.0413
d. Catheter removal day (Mean / SD)	2.04 (0.92)	2.16 (1.15)	0.5678
e. Tube removal day (Mean / SD)	2.2758 (1.22)	2. 3414 (1.216)	0.7890
f. Stent removal day (Mean / SD	16.76 (5.16)	17.96 (4.38)	0.2164

Clavien Score and Patient Position

Clavien Score	Supine		Prone		Total
	No of Patients	% age	No of Patients	% age	No of Patients
NONE	22	44 %	24	48 %	46
I	25	50 %	22	44 %	47
II	3	6 %	4	8 %	7
Total	50	100 %	50	100 %	100

Figure 1b: Supine vs Prone PCNL

was more for Prone PCNL group. The other parameters that were not statistically significant were mean operating time which was less for the supine group and duration of hospital stay which was less for the supine group. There was no difference in the other complication rates between the two procedures. The requirement of additional procedures for stone clearance were also same between both the groups.

To conclude, our study demonstrates that supine PCNL is a better technique than prone PCNL in terms of stone free rates, post-operative complications such as fever, lesser number of punctures required for stone clearance and more tubeless procedures.

Keywords: Supine PCNL, Prone PCNL, Post-Operative Complications

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Comparison of Dialysis and Conservative Care in Chronic Kidney Disease Stage 5 Geriatric Patients Requiring Renal Replacement Therapy

Dr Sanket Patil
Consultant - Nephrology,
Fortis Hospital, Greater Noida

Introduction

There was paucity of data on survival outcome and preferred method between conservative and haemodialysis care in the elderly Chronic Kidney Disease stage 5 (CKD 5) patients requiring renal replacement therapy (RRT). The present longitudinal study demonstrates whether dialysis confers any survival advantage over conservative care in these patients.

Method

This six-month prospective, observational study was conducted in CKD5 geriatric patients requiring RRT. Study participants were screened and included after counselling regarding the RRT options of dialysis and conservative care. Demographic details, biochemical and radiological tests were recorded. They were also assessed for the presence of frailty by Fried criteria. Record of patients who expired during the study period was obtained by telephonic calls. The predictive risk factors for mortality were assessed by multivariable logistic regression analysis.

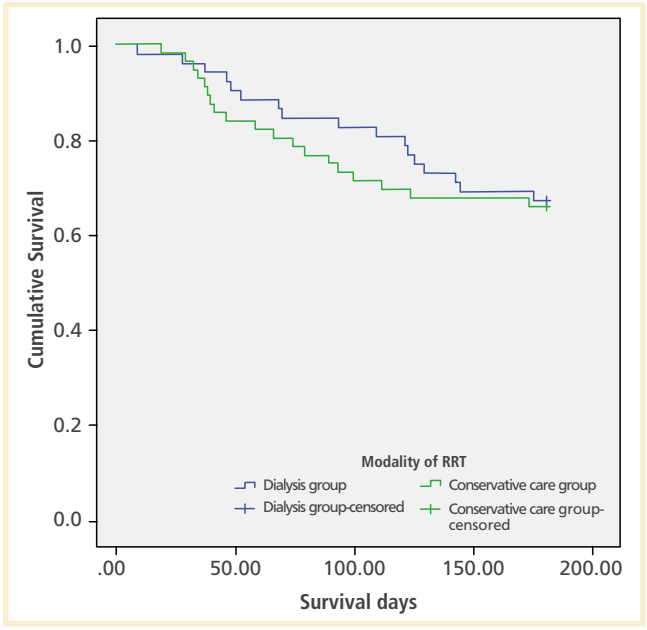
Results

A total of 118 patients were included in this study. Fifty-four (54) selected patients gave dialysis as a RRT option while sixty-four (64) patients preferred conservative care (CC). Among the baseline characteristics, more female patients, lower phosphorus and high serum albumin were seen in the CC group and other factors were comparable between the groups. Excluding the 10 patients who were lost to follow-up, 108 patients have completed the study. Overall survival in dialysis and CC group at the end of 6 months was 67.3% and 66.1% respectively. Kaplan Meier analysis showed no significant difference in survival between the dialysis and conservative group with a mean survival time of 150.3 days in the dialysis group and 141.7 days in the conservative care group. On performing multivariate logistic regression, low serum albumin level and frailty at the start of the study were independent risk factors of mortality.

Conclusion

The mortality of CKD5 RRT requiring geriatric population is high. Selection of the modality of care had no significant impact on survival. Hence conservative care can also be considered as an alternative modality of care.

Keywords: Geriatric, Chronic kidney disease stage 5, Renal replacement therapy, Conservative care, Frailty



Laparoscopic Bilateral Renal Denervation for Refractory Hypertension

Dr Premkumar Krishnappa
Senior Consultant - Uro Oncology,
Transplant and Robotic Surgery,
Fortis Hospitals, Bangalore

Dr Mohan Keshavamurthy
Senior Director - Uro Oncology,
Uro Gynaecology, Transplant and Robotic Surgery,
Fortis Hospital, Bannerghatta Road, Bangalore

Dr Shakir Tabrez
Additional Director - Uro Oncology, Uro Gynaecology,
Transplant and Robotic Surgery,
Fortis Hospitals, Bangalore

Dr Mohan Balaiah Aswathaiya
Consultant - Uro Oncology,
Transplant and Robotic Surgery,
Fortis Hospital, Bannerghatta Road, Bangalore

Introduction and Objectives

Refractory or resistant hypertension is conventionally defined as systolic or diastolic blood pressure that remains uncontrolled despite sustained therapy with at least three different classes of antihypertensive agents. There is an increased risk of cardiovascular and cerebrovascular events in such patients. A novel yet effective approach to manage such patients is laparoscopic bilateral renal sympathectomy.

Methods

Between February 2012 and May 2013, we had six patients referred to us who were diagnosed with refractory hypertension. All secondary causes of hypertension were ruled out by relevant investigative modalities. The mean systolic blood pressure in these patients was 181.5 mm Hg and the mean diastolic pressure was 105 mm Hg. One of the six patients had undergone a percutaneous catheter-based radiofrequency ablation of the renal sympathetic system, following which the hypertension relapsed. After ruling out all causes of secondary hypertension, through relevant investigations and an endocrinologist opinion, these patients were counselled regarding the surgical procedure. All patients underwent a Laparoscopic Bilateral Renal Denervation, under general anaesthesia. With the patients on corresponding flank positions - both kidneys, renal arteries and veins and both renal pelvises were denuded of all sympathetic tissue. Mean age of the patients was 47.75 (range 37 e 56) and female to male ratio was 1:1.

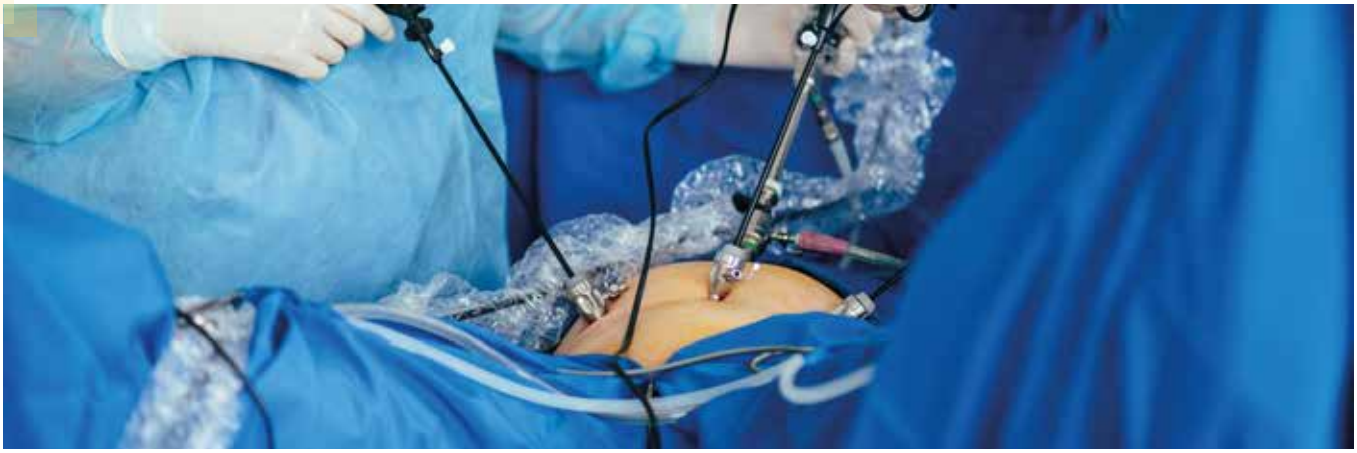
Results

The mean operative time was 153.25 minutes (range 135 e 180 minutes). And blood loss was insignificant. Mean hospital stay was 3.25 days. No post-operative complications were encountered. No case required a conversion to open surgery. Blood pressure normalized in all 6 patients with one patient not requiring any antihypertensive medication at all afterward. Five of the six patients have been maintaining normal blood pressures on one antihypertensive medication and have not shown a relapse on follow up.

Conclusions

Refractory hypertension which is treatment resistant has an increased risk of cardiovascular and cerebrovascular events, which may prove potentially life threatening. Laparoscopic bilateral renal denervation could prove to be a very efficient procedure in effectively treating these patients with minimal side effects and no complications.

Keywords: Geriatric, Chronic kidney disease stage 5, Renal replacement therapy, Conservative care, Frailty



Radical Cystectomy with Ileal Neobladder in a Patient with Hemophilia: A Case Report

Dr Niti Raizada
Senior Director - Medical & Hemato Oncology,
Fortis Hospitals, Bangalore

Dr Mohan Keshavamurthy
Senior Director - Uro Oncology,
Uro Gynaecology, Transplant and Robotic Surgery,
Fortis Hospital, Bannerghatta Road, Bangalore

Dr Shakir Tabrez
Additional Director - Uro Oncology, Uro Gynaecology,
Transplant and Robotic Surgery,
Fortis Hospitals, Bangalore

Dr Sreeharsha Harinatha
Additional Director - Uro Oncology,
Uro Gynaecology, Transplant and Robotic Surgery,
Fortis Hospital, Bannerghatta Road, Bangalore

Abstract

A 38-year-old hepatitis C and Haemophilia Type A patient presented with recurrent haematuria since 6 months. Investigations revealed a 5 cm lesion in the lateral wall of the bladder with peri vesical fat stranding. PET CT showed a FDG avid lesion measuring 4 cms in the bladder with non FDG avid Iliac nodes. Bladder preserving protocols were not considered in this patient in view of the need for further adjuvant treatment. Patient underwent a Radical cystectomy with bilateral pelvic lymph node Dissection and Ileal Neo-bladder after optimisation with Factor VIII transfusion and correction of bleeding parameters.

Case Report

38-year-old gentleman presented with complaints of recurrent haematuria since 6 months.

Conservative treatment failed and hence he was further investigated.

Ultrasound revealed multiple growths in the bladder largest measuring 5 cms.

A contrast CT abdomen and pelvis confirmed the findings along with peri vesical fat stranding. FDG PET CT showed a metabolically active lesion in the bladder with a few non FDG avid Iliac Nodes (Fig. 1.)

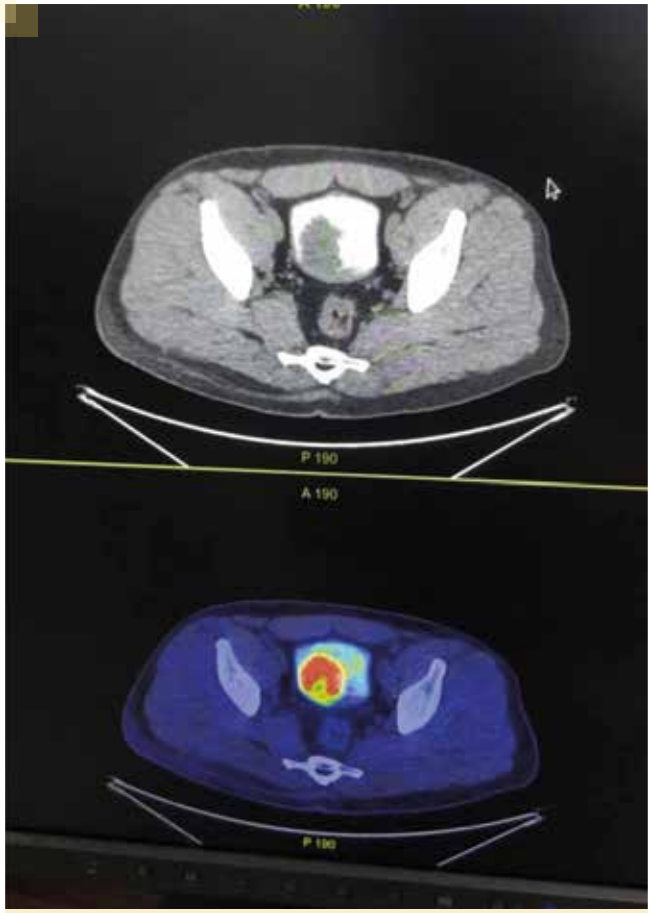


Figure 1: PET CT revealing the FDG avid Growth on the bladder

Coagulation parameters revealed a normal Pro-Thrombin time and an elevated Activated Partial Thromboplastin time. Further Haemato- logical work up revealed a severe Factor VIII deficiency. (Fig. 2).

Test Name	Result	Unit	Reference Range
VON WILLEBRAND WORK UP			
PT-Prothrombine Time Test	14.0	sec	11-14
PT Control	12.0	sec	
APTT clot based	58.0	sec	26-36
APTT CONTROL	30.0	sec	
FIBERINOGEN LEVEL clause	220.0	mg/dl	200-400
THROMBIN TIME clot based	21.0	sec	18-22
FACTOR VII ASSAY clot Based	3.9	%	50-150
FACTOR IX ASSAY clot based	70.0	%	50-150
FACTOR VII Chromo chromogenic	5.0	%	50-150
VWF ANTIGEN ELFA	115.0	%	60-150
VWF - RICOF ASSAY LTA	66.21	%	50-150

Figure 2: Hematological investigation revealing severe Factor VIII deficiency

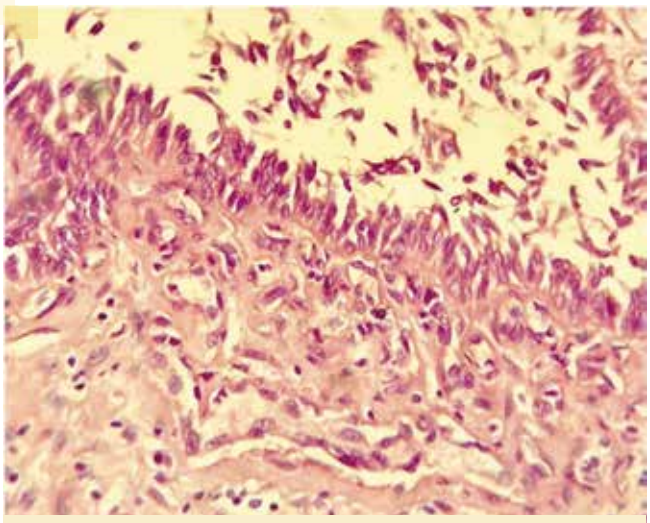


Figure 3: Microscopic Picture of Histopathological Slide

All options were discussed with the patient and his relatives. Haematoncology were involved to optimise the patient for surgery. 100% correction with Factor VIII (4500 IU) was done on the day of surgery. Factor VIII increment assay done half an hour after Factor VIII infusion showed good increment of 104%. Patient then underwent Radical Cystectomy with Bilateral Pelvic Lymph Nodal Dissection with Ileal Neo-Bladder reconstruction on 11th December 2019. Intra-operatively Factor VIII assay done revealed decrease in Factor VIII to 76% 4 hours after the first injection. Patient was given 15 units/kg of Factor VIII (1350 IU). Intra operative blood loss was around 1.5 L. Patient was transfused 4 PRBCs and Factor VIII transfusions.

Day 0: 4500 IU stat, 1350 IU intra operative, 2000 IU at night.

Day 1: 2500 IU in the morning and 2000 IU at night.

Day 2: 2000 IU BD.

Day 3–7: 2000 IU BD.

Patient was discharged from the hospital on the eight-post operative day.

Discussion

Haemophilia is a rare X linked recessive genetic disease affecting the production of Factors VIII and IX ranging from mild (>5%), moderate (1–5%) and severe disease (<1%).[1] maturia frequently. Haematuria is mostly due to benign causes but those not responding to conservative treatment require further investigations to rule out a malignancy.[2,3,4] guidelines (AUA/EAU) suggest.

Radical Cystectomy as one of the treatment modalities for intermediate and high-risk bladder tumours.

Radical cystectomy particularly in this patient was mandatory in view of the Haemophilia wherein adjuvant therapies would have resulted in severe haematuria.

Radical Cystectomy in a haemophiliac involves a high risk of bleeding complications. A team effort requiring Haemato-oncologists, Anaesthetists and Surgeons with adequate Factor VIII replacement can ensure good outcomes in such patients. A quick in and quick out approach was followed, hence the decision to conduct an open procedure.

Regular monitoring of the Factor VIII levels ensured a smooth post-operative recovery in our patient. Patient is continent, potent and voiding per urethra using the creeds manoeuvre and clean intermittent catheterisation at 3 months follow up. No recurrent episodes of haematuria or Malena has been reported by the patient till date. This is the first reported case of Radical cystectomy with Ileal Neo bladder in a Haemophiliac patient. Although radical cystectomy with ileal conduit has been reported earlier for severe haematuria.[5]

Conclusion

Hemophilia with hematuria is a nightmare to any practising urologist. The need for frequent clot evacuations and failed conservative therapies mandates a cystectomy even for a benign cause. In carcinoma bladder Radical Cystectomy probably is the only option to achieve favourable cancer free survival rates and improving the quality of life. Neo bladder diversion using the ileum though a complex procedure provides a continent diversion especially in young patients. Team approach can ensure good outcomes even in such patients with Haemophilia who can have significant bleeding complications in the perioperative period if not managed properly.

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Robotic Simple Prostatectomy in a Hugely Enlarged Prostate: An Effective Resort When Endoscopic Approach Fails

Dr Saurabh R Patil
Consultant - Urology and Robotic Surgery,
Fortis Hospital, Mulund

Co-Authors
Dr Pushkar Shrivastava
DNB Urology

Dr Aditya Goyal
DNB Urology

Dr Rahul Pathrikar
Associate Consultant - Urology

Introduction

Bladder outlet obstruction secondary to benign enlargement of prostate (BEP) is the most common cause of urinary symptoms in the aging male population.

The most common surgical intervention for such issues is transurethral endoscopic resection of prostate using electrocautery or laser.

However, surgery for prostate glands weighing 100 grams or more poses a major challenge for surgeons. In such cases with very large prostate volume, open simple prostatectomy can be a useful single stage option. Though considered as a feasible approach, open simple prostatectomy is associated with a few morbid complications like bleeding, requirement for blood transfusion, prolonged hospital stay and need for revision surgery. With the advent of minimally invasive surgery, Holmium or Thulium laser enucleation and laparoscopic simple prostatectomy surgery are being more commonly used in the practice. However, laser enucleation may demand two stage procedures, it may cause transient urinary incontinence while laparoscopic simple prostatectomy has a long learning curve. Robot assisted simple prostatectomy came as a good alternative overcoming the long learning curve and having potential benefits in post-operative recovery.

In this report, we describe our initial experience and evaluate the feasibility of robotic simple prostatectomy when endoscopic resection was technically difficult. We publish this case report due to rarity of a situation where such a large prostate has been resected using robotic simple prostatectomy in India.

Case

An 83 year old male presented with complaints of severe dysuria, dribbling micturition for a last few years with a recent episode of retention of urine. This was associated with recurrent hematuria requiring multiple cystoscopies and clot evacuation procedures. He was a known diabetic and hypertensive. Attempt of TURP was done outside but surgery could not be performed as the scope could not reach the tip of the median lobe. The patient was then referred to our hospital for further treatment.

The patient had a good general condition. General examination was unremarkable. On regional examination patient had a catheter in situ. The anal tone was normal. The prostate was Grade 3 firm, non-nodular, nontender.

On further evaluation his serum PSA was 23.3 ng/dl, however on digital rectal examination there were no hardness or nodularity.

MRI prostate was done which showed 330 grams of prostate with benign changes, hugely enlarged median lobe and thickened bladder wall.

We tried for Endoscopic enucleation of prostate (HoLEP) but could not proceed in view of difficulty in reaching upto the tip of median lobe. Hence we proceeded with Robotic simple prostatectomy (transvesical approach) using da Vinci Xi robot (Intuitive surgicalsTM). Port placement was exactly similar to radical prostatectomy. Bladder was opened at dome without dropping it. Keith needles were used to keep the cystostomy open. After confirming the position of both ureteric orifices, surgical resection started with median lobe dissection at 6 o'clock position. After complete resection of median lobe till apex, one by one lateral lobe dissection was completed. Prostate at the roof was not resected in view of risk of injury to dorsal venous complex and urinary rhabdosphincter plus it was not needed as the fossa after median and lateral lobe resection was good. Hemostasis was confirmed and cystostomy closed using 3-0 vicryl in two layers. 20 French three-way Foley's cathter was inserted. Intra-operative blood loss was 200 ml. Immediate postoperative recovery was smooth. Patient was

discharged on the fifth postoperative day. Histopathology showed benign hyperplasia of prostate. Catheter was removed after one week, patient had a significant improvement in symptoms with no urinary incontinence.

Review of Literature

For large prostate volume, open simple prostatectomy (OSP) had been considered the gold standard surgical treatment. In the recent past more emphasis was given on minimally invasive procedures with the European Association of Urology (EAU) guidelines which state that anything >80 ml is 'large' and is an indication for open simple prostatectomy (OSP), but only 'in the absence of endo-urological armamentarium and a holmium laser' [1].

Robot assisted simple prostatectomy has been proposed as an alternative to OSP and endoscopic techniques. Role and safety profile of these minimally invasive procedures were established by landmark study done by Autorino et al where they analyzed 1330 cases including 487(36.6%) robotic and 843(63.4%) laparoscopic procedures. It was the largest case series determining the role of minimally invasive simple prostatectomy (MISP). The study outcomes suggested that median blood loss was 200 ml, intraoperative transfusion was required in 3.5% of cases, an intraoperative complication was recorded in 2.2% of cases, and the conversion rate was 3%. Median length of stay was 4 d (range: 3-5). They hence concluded that MISP(lap/robotic) can be considered a viable surgical treatment for large prostatic adenomas.[2] However median volume of prostate in this study was 100ml (89-128 ml) and the prostates of still larger size was not included in the study.

Another study was done by Benarroche D et al where he compared 47 RASP and 56 OSP patients with median volume of prostate130 ml (100-180) and 126 ml(100-160) respectively. RASP was associated with a significant reduction in blood loss (median 200 vs. 400 mL), shorter hospital stay (5 vs. 10 days) and median catheterisation time (4 vs. 9 days) . In the RASP group, there were fewer grade ≥ 2 complications (2 (4.3%) vs. 13 (23.2%)) and less need for transfusions (0 vs. 6 (11%). Preoperative prostate volume was a risk factor for complications (OR = 1.2, p = 0.01) while robot-assisted surgery was a protective factor against complications (OR 0.3 [95% CI 0.05-0.9]; p = 0.05).[3] In our experience, estimated blood loss was 200ml, patient did not require transfusion and there were no major complications in peri-operative period.

Superiority of RASP over OSP has been established in multiple studies. As of now HoLEP is considered the approach of choice for larger prostates the EAU guidelines corroborate this, stating "Available RCTs indicated that in large prostates HoLEP was as effective as open prostatectomy for improving micturition, with equally low reoperation rates after 5 years (5% vs 6.7% respectively)" . Thus any comparison for these emerging MISP (robotic/lap) has to be established with modern laser prostatectomy techniques.

Karl Friedrich Kowalewski et. al published a systemic review and meta-analysis of 4 studies including 901 patients with 24 moth follow up .He concluded that both EEP (Endoscopic enucleation of prostate)and RASP offer excellent improvement of symptoms for prostatic hyperplasia. EEP has lower blood loss, short catheterization time, length of stay and should be the first choice available. RASP is a feasible option in extremely large glands, concomitant disease or EEP is not possible[4]

Comparing RASP with LSP Michele et. al concluded that RASP was a safe technique encompassing the advantage of shorter hospitalization. Considering cost and limited availability LSP is safe technique in experienced hands.[5]

Conclusion

Robotic simple prostatectomy offers a feasible and good alternative to endoscopic resection especially when endoscopic resection is technically difficulty. It could be a safe and effective approach in large gland resection with an advantage of earlier recovery and lesser peri-op morbidity even in old patients with co-morbidity

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CLINICAL CONVERSATIONS: CASE REPORTS

Robotic Assisted Ureteric Mitrofanoff Conduit with Malone Antegrade Continence Enema Procedure

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Dr Mohan Keshavamurthy
Senior Director - Uro Oncology,
Uro Gynaecology, Transplant and Robotic Surgery,
Fortis Hospital, Bannerghatta Road, Bangalore

Dr Shakir Tabrez
Additional Director - Uro Oncology, Uro Gynaecology,
Transplant and Robotic Surgery,
Fortis Hospitals, Bangalore

Dr Sreeharsha Harinatha
Additional Director - Uro Oncology,
Uro Gynaecology, Transplant and Robotic Surgery,
Fortis Hospital, Bannerghatta Road, Bangalore

Dr Premkumar Krishnappa
Senior Consultant - Uro Oncology,
Transplant and Robotic Surgery,
Fortis Hospitals, Bangalore

Dr Basavaraja Neelagar
Senior Consultant - Uro Oncology,
Transplant and Robotic Surgery,
Fortis Hospital, Bannerghatta Road, Bangalore

Dr Karthik Rao
Consultant - Uro Oncology,
Transplant and Robotic Surgery,
Fortis Hospital, Bannerghatta Road, Bangalore

Dr Santosh Kumar Subuddhi
Consultant - Uro Oncology,
Transplant and Robotic Surgery,
Fortis Hospital, Bannerghatta Road, Bangalore

Introduction and Objective

Neurogenic bladders requiring self-catheterizations have primarily been treated using appendix as the preferred Mitrofanoff channel. But in some cases, the appendix may be absent or maybe required for other procedures as in MACE (Malone Antegrade Continence Enema) for chronic constipation. Here we demonstrate the feasibility of ureter as the Mitrofanoff channel combined with bladder augmentation and MACE procedure done robotically.

Materials and Methods

The patient is a 14 year old male with neurogenic bladder due to spinal dysraphism with inability to do per urethral self-intermittent catheterization due to sensitivity and recurrent urinary tract infection. He also had chronic constipation requiring digital evacuation frequently.

Evaluation with urodynamics and cystogram showed poor compliance with small capacity bladder with no reflux. He was planned for Robotic Augmentation Cystoplasty and Ureteric Mitrofanoff conduit with MACE procedure.

The patient was placed in Trendelenburg position and standard four port docking of Da Vinci XI robot was done with additional assistant port. An ileal segment of 20cm was marked with sutures and delivered out of the abdomen through a small suprapubic incision which was partially detubularised and refashioned into an U shaped patch with chimney and returned to the abdominal cavity. Augmentation of the bladder was done with single layer barbed sutures. The right ureter was divided at the lower one third level. The proximal ureter was anastomosed to the ileal chimney and the distal ureter was brought out at the right iliac fossa as a cutaneous stoma. The appendix was brought out at a separate site for cutaneous stoma for antegrade continence enema.

Results

Total operative time was approximately four hours. Estimated blood loss was about 200 ml. Patient was discharged on the 4th postoperative day four weeks after the procedure, the DJ stent was removed and patient initiated on self-catheterization and antegrade enemas which he was able to do comfortably

Conclusion

Robotic assisted ureteric Mitrofanoff procedure with augmentation Cystoplasty and MACE procedure is technically feasible with good out- come in selected patients with combined neurogenic bladder and bowel dysfunction.

The Eclipse Syndrome of Nephrology: Conundrum in The Diagnostic Workflow: A Case Report

Dr Upal Sengupta
Senior Consultant - Nephrology
Fortis Hospital, Kolkata

The diagnostic approach to a kidney problem is traditionally syndrome based. Once the treating nephrologist identifies the syndrome correctly, differential diagnostics are thought of, and the case is investigated further along that line.

Table 1: Syndromes in Nephrology

1	AKI: Acute Kidney Injury: Renal dysfunction evolving in hours to days
2.	RPRF: Rapidly Progressing Renal Failure: Evolution over days to weeks
3.	CKD: Chronic Kidney Disease: Evolution over weeks to months
4.	Acute Pyelonephritis: Fever, flank pain, renal dysfunction
5.	Obstructive Uropathy/Nephropathy
6.	Nephrotic syndrome
7.	Nephritic syndrome

Among all these, the syndrome of RPRF is the most dangerous and considered an emergency by the nephrologist because of the devastating nature of the underlying diseases. If these are not diagnosed and treated in time, they will invariably lead to chronic kidney disease if not entirely fatal within few weeks.

Table2: Renal Diseases Presenting as RPRF Syndrome

1.	ANCA associated vasculitisAnti GBM antibody disease
2.	Immune complex crescentic glomerulonephritis
3.	Crescentic IgA nephropathy
4.	HUS, TTP
5.	Severe acute interstitial Nephritis

Here, we describe a case where one diagnostic syndrome completely eclipsed the other more sinister etiology, thus using the term 'The Eclipse Syndrome'.

Clinical Presentation

A 56-year-old gentleman, software consultant by profession presented to our outpatient department with complaints of fever, decrease in urine output, shortness of breath and poor blood pressure control. He was a known hypertensive for the last 7 to 8 years using a single anti-hypertensive medication to control his blood pressure. He also gave history of occasional burning sensation while passing urine.

On clinical evaluation, he was found to be febrile and hypertensive with a BP of 170/100 mm of Hg and had significant pedal edema. On further questioning he revealed that he had gained almost 5 kgs of weight over the last one week. There was no skin rash. His external genitalia were normal.

Initial Laboratory Investigations

At admission his serum creatinine was 2.3 mg/dL, CRP was above 90 mg/dL and USG of the kidneys showed bilateral enlarged, edematous kidneys without any stone or hydronephrosis. Based on his clinical and laboratory investigations, a diagnosis of acute pyelonephritis syndrome was considered. The urine and blood cultures were sent, and antibiotics were started.

Initial Course in the Hospital: The Eclipse Phase

After initial treatment with antibiotics (Meropenem) and diuretics, his urine output showed rapid improvement. His fever did not recur, and the edema decreased noticeably. Initially the creatinine also showed an improving trend. Urine culture showed growth of multi drug resistant Klebsiella pneumonae sensitive only to Fosfomycin. The antibiotic was changed to intravenous Fosfomycin from Meropenem as CRP went up to a value of 160 mg/dL.

Second Phase of Illness: The Unmasking of the Eclipse

Although he was being treated along the line of acute pyelonephritis, other differential diagnosis of RPRF syndrome as mentioned in the initial discussion was also considered, and ANA, ANCA, Anti GBM antibody, along with blood for complement level C3 and C4 were sent. After an initial decrease in creatinine to a value of 1.8

with Fosfomycin, it started showing an upward trend. At this point, a diagnosis of ATN after extensive diuresis and acute interstitial nephritis as a result of acute pyelonephritis was considered.

In view of his rising creatinine and an albumin creatinine ratio close to 1200, an underlying glomerular disease, which may have been going undetected because of the presence of urine infection was considered. His ANA, C-ANCA, P-ANCA, Anti GBM antibody reports however came back as negative.

Decision for a Kidney Biopsy

At this point of his illness because of the clinical uncertainty regarding the diagnosis, a kidney biopsy was considered and was contemplated. Pending the biopsy report oral steroid was also initiated. The kidney biopsy provisionally was communicated as of crescentic glomerulonephritis. Pulse steroid injection was immediately started and with this therapy the creatinine started showing an improving trend.

Proving our clinical hunch correct, the final biopsy report came as a membranoproliferative crescentic glomerulonephritis without any chronicity. The immunofluorescence revealed presence of all the classes of antibodies without IgM.

It finally became transparent that the presence of an associated urinary tract infection had completely eclipsed the diagnosis of an immune complex crescentic glomerulonephritis presenting as a RPRF syndrome.The

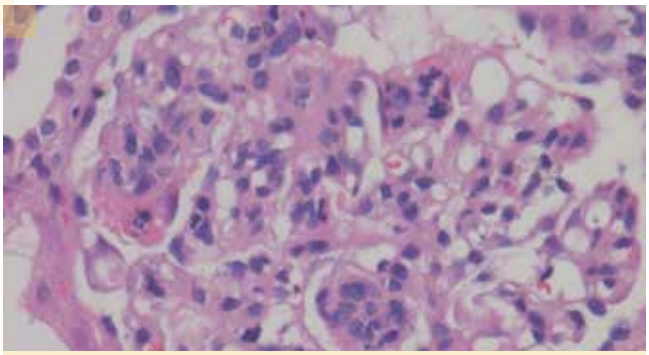

Figure 1: MPGN pattern in kidney biopsy

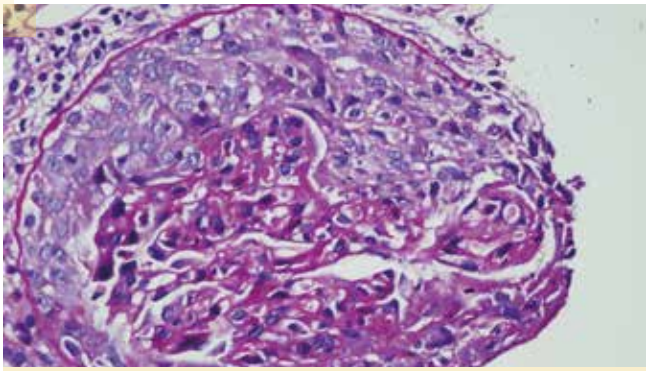

Figure 1.1: Crescent in the glomerular tuft

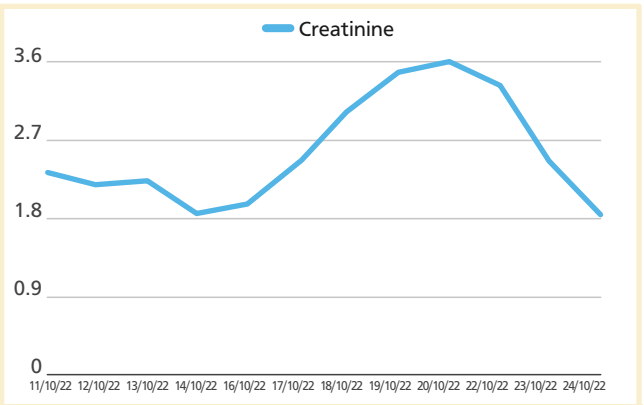

Figure 2: Creatine trend and timing of therapies

patient was given the first pulse of injection cyclophosphamide and was discharged at a creatinine of 1.8 mg/dL. His maximum creatinine was 3.68 mg/dL in hospital.

Clinical Course Following Discharge

The patient was followed up and was administered four more pulses of Inj. Cyclophosphamide; following which his creatine was 1.02 and his albumin creatinine ratio in spot urine was 98.

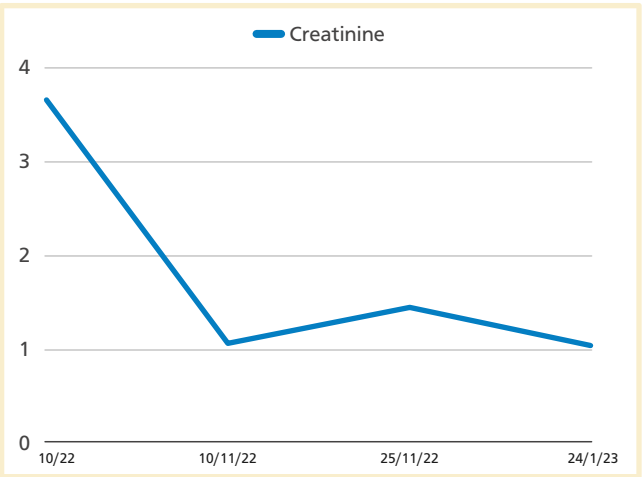

Figure 2A: creatine trend with Cyclophophamide pulses

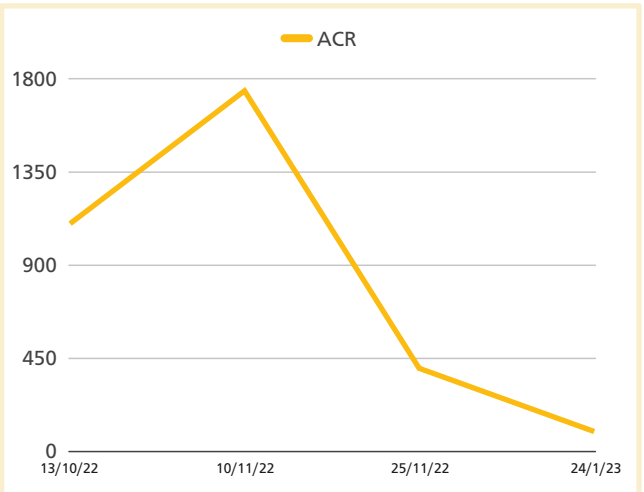

Figure 2B: ACR trend with Cyclophophamide pulses

Discussion

From the clinical and laboratory point of view this patient recovered completely from the potentially devastating kidney disease. There are two noteworthy points of discussion in this case.

The diagnosis was the first and foremost challenge. The initial suspicion was of a glomerular disease underlying the more visible diagnosis of acute pyelonephritis very early in the course of the disease. In case of acute pyelonephritis with poor clinical response to treatment underlying obstructive component like stone or acute papillary necrosis which were ruled out by imaging studies is the first consideration. Settlement of fever and initial decrease followed by rise in creatinine and presence of significant proteinuria in this non- diabetic individual gave us subtle clues towards an underlying diagnosis that was being eclipsed by urinary infection.

The second point is the use of renal biopsy. While the use of renal biopsy in established glomerular syndromes is known, there is still a lot of reservation in using a renal biopsy in an undiagnosed acute kidney disease. In our opinion, renal biopsy should be used more frequently in case of a Clinico-pathological miscorrelation or the nature if the kidney disease cannot be satisfactorily explained with the existing level of evidence.

Finally, although the prognosis of immune complex MPGN in adults is not good and our patient had two bad prognostic markers like hypertension and renal dysfunction at presentation, quick diagnosis and per-protocol treatment resulted in excellent prognosis for this patient.

The clinician should be alert to the eclipse syndrome and not allow the presence of a single pathology to prevent one from finding a more sinister disease hiding under the light of a more evident diagnosis. Early diagnosis of a more sinister pathology will ultimately lead to the best outcome for the patient.

Tacrolimus-Induced Acute Pancreatitis and Diabetic Ketoacidosis (DKA) in Pediatric Kidney Transplant

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Dr Ajit Singh Narula
Principal Director - Nephrology and Kidney Transplant, Fortis Escorts, Okhla Road, New Delhi

Dr Sanjeev Gulati
Principal Director - Nephrology and Kidney Transplant, Fortis Escorts, Okhla and Vasant Kunj, New Delhi

Co-Authors
Durre Shehwar[1]
[1]Department of Pathology, Jawaharlal Nehru Medical College and Hospital, Aligarh, India

Abstract

Background: Calcineurin inhibitors (CNIs) are often associated with abnormalities in glucose and lipid metabolism. Tacrolimus is the most potent CNI which is nowadays used almost universally as a part of triple-drug immunosuppression after kidney transplantation. Tacrolimus can cause islet cell damage and decrease in insulin secretion which can lead to post-transplant diabetes mellitus and rarely diabetic ketoacidosis. Although rare, acute pancreatitis has also been implicated by a few case reports to be associated with tacrolimus. However, tacrolimus-induced acute pancreatitis has not been reported in pediatric kidney transplant recipient till date.

Case Description

We report the first case of tacrolimus-induced acute pancreatitis in association with hypertriglyceridemia and DKA in a child early after kidney transplant. The patient was managed with supportive treatment, and tacrolimus was stopped for three days and then switched to cyclosporine-based regimen. The patient became euglycemic within 8 weeks of switching to cyclosporine and did not have any recurrence of pancreatitis.

Conclusion

Tacrolimus-induced pancreatitis is rare in the setting of kidney trans- plants and prompt diagnosis and management can lead to a successful outcome.

Keywords: Diabetic ketoacidosis, drug-induced pancreatitis, hypertriglyceridemia, kidney transplant, tacrolimus.

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Primary Renal Synovial Sarcoma - A Rare Histology

Dr Mohan Keshavamurthy
Senior Director - Uro Oncology,
Uro Gynaecology, Transplant and Robotic Surgery,
Fortis Hospital, Bannerghatta Road, Bangalore

Dr Shakir Tabrez
Additional Director - Uro Oncology, Uro Gynaecology,
Transplant and Robotic Surgery,
Fortis Hospitals, Bangalore

Dr Sreeharsha Harinatha
Additional Director - Uro Oncology,
Uro Gynaecology, Transplant and Robotic Surgery,
Fortis Hospital, Bannerghatta Road, Bangalore

Dr Premkumar Krishnappa
Senior Consultant - Uro Oncology,
Transplant and Robotic Surgery,
Fortis Hospitals, Bangalore

Dr Mohan Balaiah Aswathaiya
Consultant - Uro Oncology,
Transplant and Robotic Surgery,
Fortis Hospital, Bannerghatta Road, Bangalore

Abstract

Renal tumours vary from a benign to highly malignant histology. Here we present the case of a 54-yrs-male with a heterogeneous large encapsulated cystic lesion in the right kidney upper pole showing areas of solid component and necrosis with no evidence of metastasis or paraneoplastic features.

Post right radical nephrectomy IHC, showed positive reaction for BCL-2, CD99 and vimentin, suggesting primary renal synovial sarcoma. The patient was treated with ifosfamide based chemotherapy in view of an unpredictable prognosis. We present this case for its rarity and good response to treatment and as a suggestion for differential diagnosis of Renal Cell Carcinoma.

Introduction

Renal masses until proven otherwise are considered to be malignant, more so if they are more than 4 cm in size. Malignant tumours other than RCC are rare, accounting for 6–10% cases. Renal sarcomas are much rarer (1–2%) and a majority of them are leiomyosarcoma and liposarcoma. Synovial sarcomas form about 5–10% of all the soft tissue tumours and are mostly seen in the extremities. Renal synovial sarcoma was first reported in 1999 by Faria et al. (1). Only countable number of case reports are available with this histological subtype as of today. Present day confirmatory diagnosis is RT-PCR demonstration of SYT-SSX fusion gene transcript. The present case is an incidentally detected primary renal synovial sarcoma presented like a well-defined RCC.

Case Presentation

A 54-year-old male was incidentally detected with a right renal mass on routine health check-up with features suggestive of RCC. A contrast-enhanced CT revealed a large mildly enhancing cystic lesion arising from the superoposterolateral aspect of the right kidney

measuring about 20 cm by 15 cm, abutting the segment 6,7 of the liver with doubtful infiltration (Fig. 1). There was no evidence of lymph node enlargement. A provisional diagnosis of RCC was made and a metastatic workup initiated. The workup showed no evidence of metastasis or paraneoplastic features. Biochemical investigations were normal. A radical nephrectomy was planned with possible hepatic resection if found infiltrating. A thoracoabdominal surgical approach was used to reach the mass. The mass was found to be confined to the kidney within the Gerota's fascia and mere indentation of the right lobe of the liver. An open right radical nephrectomy with regional lymphadenectomy was performed.

The histology showed areas of necrosis and haemorrhage with rich vascularity. It showed sheets of round cells with high nucleocytoplasmic ratio with prominent nucleoli. There was no metastasis in the regional lymph nodes, no perineural invasion and the margins of the specimen were free from malignancy (Fig. 2). Differential diagnoses of Blastemal Wilms and Sarcoma were made on histology. A final histological diagnosis was challenging, and immunohistochemistry (IHC) was used for further clarity. The IHC evaluation tests showed a positive re- action for BCL-2, CD99, and vimentin (Fig. 3), which suggested the diagnosis of synovial sarcoma.

In view of rare histology and no clear guidelines in the management of this histological subtype,2 the patient was subjected to adjuvant chemotherapy with ifosfamide and adriamycin for 6 weeks. Though chemotherapy did not add anything clinically or biochemically measurable, the patient was doing well at 3 months and later was lost to follow up.

Discussion

Primary synovial sarcoma of the kidney is the rarest type of renal sarcoma, accounting to less than 1% of renal malignancies. leiomyosarcoma represents 40–60% of the described renal sarcomas, followed by rhabdomyosarcoma, histiosarcoma, chondrosarcoma and osteosarcoma, liposarcoma, angiosarcoma and hemangiopericytoma. The usual presentations in synovial sarcomas of the kidney that have been reported are well defined large masses with morphology varying from irregular outline to smooth cystic lesions (3). Generally, it affects young individuals, of both genders, between 20 and 50 years, presenting with a clinical picture that is similar to any renal tumour. Presently, there are no clinical or imaging characteristic to indicate a confirmatory diagnosis of synovial sarcoma (4). Furthermore, there is no standard treatment protocol for synovial sarcoma to date. In many cases, surgery followed by ifosfamide-and/or adriamycin-based chemotherapy have been used (5). Despite its rarity and non-specific presentation, clinicians should consider synovial cell sarcoma in the differential diagnosis of renal masses, especially when histopathology is non-diagnostic. In this case, an adjuvant chemotherapy

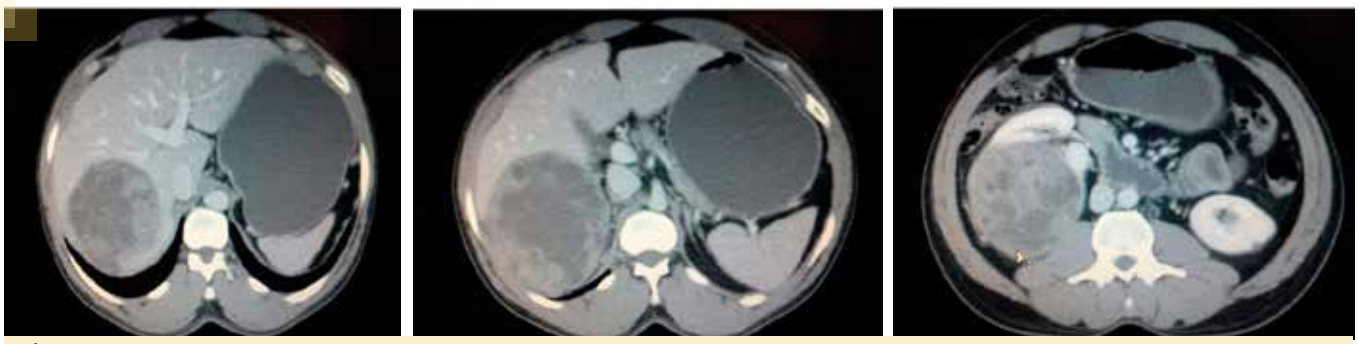

Figure 1: Contrast-enhanced CT scan of the abdomen, showing a large heterogeneously enhancing mass involving the upper pole and inter-polar region of the right kidney, which appears to infiltrate the right lobe of the liver.

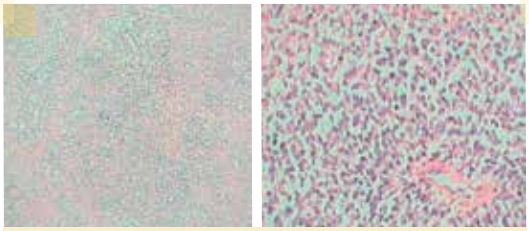

Figure 2: The low power and high-power images respectively, of the tumour showing sheets of round cells with high nucleocytoplasmic ratio and prominent nucleoli

Figure 3: Three images of the immunohistochemistry of the tumour tissue. The first image on the left-hand side shows the positive reaction to BCL-2, the next image showing a positive reaction to CD 99 and the third image shows a positive reaction to Vimentin.

regimen with ifosfamide and adriamycin have been used in view of an unpredictable clinical course.

Conclusion

Primary renal synovial sarcoma is rare among renal tumours amounting to less than 1% of all the renal tumours. Since a histological diagnosis based on the clinical data and imaging studies is impossible, keeping an open mind is essential for surprising histology as this case.

Keywords: Primary renal synovial sarcoma, Rare renal tumours, Sarcoma in kidney Unusual, Renal tumour histology.

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Dialysis - A Bridge Which Ultimately Leads to Kidney Transplant for The Pediatric Population

Dr Sharadha Lohia
Consultant - Paediatrics, Urology, Robotics and Kidney Transplant, Fortis Memorial Research Institute, Gurugram

Dr Ashwini
Consultant - Nephrology, Fortis Memorial Research Institute, Gurugram

Dr Varun Gossain
Associate Consultant - Nephrology, Fortis Memorial Research Institute, Gurugram

Dr Yogeshwar Anand
Associate Consultant - Nephrology, Fortis Memorial Research Institute, Gurugram

Dr Salil Jain
Director and Head - Nephrology and Renal Transplant, Fortis Memorial Research Institute, Gurugram

Introduction

End-stage renal disease (ESRD) in children is considered a rare but serious condition, which is a major cause of morbidity and mortality.[1,2] There is increased attention and demand for pediatric renal replacement therapy (RRT) worldwide which includes either dialysis (hemodialysis or peritoneal dialysis) or kidney transplantation (KT). KT is the RRT of choice for children with end-stage kidney disease (ESKD) as it offers better quality of life and survival compared to dialysis.[3,4] Even the adult studies have proven that 9-13% of patients on hemodialysis in India die under a year[5] and the dialysis vintage is associated with an enhanced risk of death.[6]

Case 1

Baby O, a 5-year-old female child with CKD STAGE-5d on maintenance hemodialysis (MHD), (basic disease: chronic glomerular nephritis) with hypertension and anemia was on CAPD for 27 months and shifted to MHD for 3 months before being transplanted on 31.12.21. At three years of age she had had multiple admissions to PICU for CKD complications such as of carpopedal spasms and fluid overload. Issues on RRT were multiple episodes of peritonitis and HD catheter displaced and she was unable to join school.

Case 2

Baby M, a 10-year-old female child with CKD STAGE-5d

with anemia and hypertension was on MHD for 6 months before being transplanted on 20.10.22. Her issues faced during MHD; severe anemia requiring two transfusions, two catheter related-associated bloodstream infections (CRBSIs) and she had missed school for over four months of the 6 months while she was on MHD.

Discussion

Baby O and Baby M both at 6 months post-transplant had good kidney function and had joined and returned back to school respectively. There are other issues about inequalities in access and availability for CKD care in children in India. We would also like to draw your attention to inequalities for dialysis as follows; availability of 1) dialyzers, 2) pediatric tubing and 3) even hemodialysis catheters and permacath we use for children are in short supply. Additionally, vast majority of centers of currently existing in countries are not geared to provide pediatric hemodialysis nor do we have centers dedicated for pediatric patients. Historically, it was believed that children with chronic kidney disease had to progress to ESKD requiring RRT and were offered dialysis before being offered KT. They believed that the dialysis experience would give children a sense of improved quality of life and thus better adherence post-transplant.[7] United States Renal Data System shows preemptive transplantation is associated with substantial benefits in allograft and patient survival among children with ESRD, particularly when compared with children who receive dialysis for over one year. Thus, their policies promote early access to transplantation and avoidance of dialysis for children with ESRD whenever feasible.[8] Sadly, we have no comparable data from India.

Pre-emptive kidney transplantation (PKT) is performed before the initiation of dialysis to avoid the morbidity and mortality associated with dialysis.[9,10] United States Renal Data System shows preemptive transplantation is associated with substantial benefits in allograft and patient survival among children with ESRD, particularly when compared with children who receive dialysis for >1 year.8 That PKT also leads to improved clinical outcomes has been addressed by several studies A USA registry analysis showed significantly better 5-year patient and graft survival rates in children transplanted preemptively vs. non-preemptively (nPKT)[8]. Another study from Japan found no difference in patient survival or 5-year graft survival between PKT and KT groups.[11] Similar studies from different single centres show inconsistent results.[12.13,14,15]

CAKUT leads to 47–62% of pediatric CKD16 and thus bladder assessment pretransplant is imperative. Paediatric ESKD patients differ from adult patients in terms of causes of ESKD, donor-recipient size mismatch, post-transplant complications, medication non-adherence especially in teenagers, growth and development complications, and co-morbidities associated with the lower urinary tract.[17] In patients on dialysis the growth velocity is decreased as compared to PKT which shows significant gain.[18,19] Based on the age at which PKT is performed final height may be optimized finally, especially for children under 3 years while catch-up is not seen in older kids.[19] Therefore, it is important to evaluate the availability and feasibility of available RRT in your region, feasibility and patients comfort with dialysis or KT or PKT specifically for your patient to reap the benefits. Dialysis is considered a bridge which ultimately leads to KT for the pediatric population.

Acknowledgements

We would like to acknowledge Department of Pediatrics and Department of Urology, Robotics, & Kidney Transplant at Fortis Memorial Research Institute, Gurugram, India.

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Extending the Horizon of Robotic Approach for Complex Reconstruction: A Case of the Large Vaginal Stone Causing Urethrovaginal Fistula

Dr Shrey Jain
Associate Consultant - Urology and Renal Transplant,
Fortis Memorial Research Institute, Gurugram

Dr Anil Mandhani
Executive Director and Head - Urology,
Fortis Memorial Research Institute, Gurugram

Introduction

Urethrovaginal fistula (UVF) is an abnormal connection between the urethra and vagina. It is a rare complication in the developed world and is most often due to iatrogenic injury from pelvic surgery. In developing countries like India, it is one of the common, dreadful complications of obstetric trauma due to prolonged labor or obstetric intervention. Less common etiologies include urethral instrumentation, trauma, radiation, and complications from labor. UVF has also been reported as a rare complication of anti-incontinence sling procedures, including tension-free transvaginal tape (TVT) and trans obturator tape placement, likely secondary to tension necrosis of the urethra. Herein, we present management of a rare case of large urethrovaginal fistula due to erosion caused by a large stone, made possible only by a robotic approach.

Case Summary

A 31-year-old female presented to FMRI with foul-smelling vaginal discharge, lower abdomen pain, and continuous urine incontinence for one year. She had a history of two home deliveries (last, one year back), with some vaginal surgery for stress incontinence. She was referred to Gynecology for a large vaginal mass with a malignant vesicovaginal fistula. On per speculum vaginal examination, a large hard mass was felt involving the whole vagina, and the cervix was not identified. She underwent MRI pelvis which showed a large 10 x 7.3 x 7.8 cm well-defined calcified mass involving the cervix and upper two third of the vagina. Mass was causing erosion of the posterior wall of the urinary bladder with a large intravesical component and resultant urethrovaginal fistula. (Fig. 1) Planes with the ureter, pelvic wall, and rectum were maintained. There was no significant lymphadenopathy. She then underwent a PETCT and on which, it was diagnosed to be a case of a large stone in the vagina protruding into the bladder.

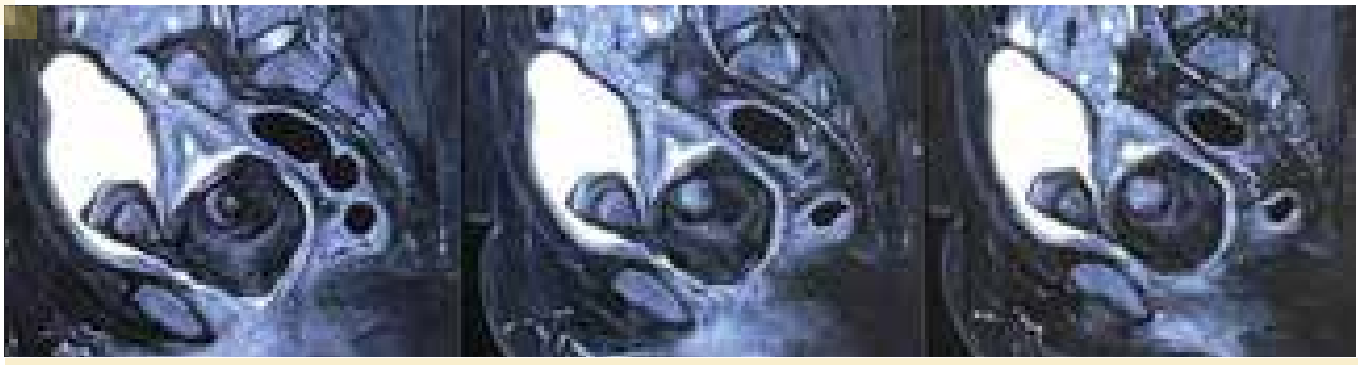


Figure 1: MRI pelvis showing large, calcified mass involving vagina and bladder

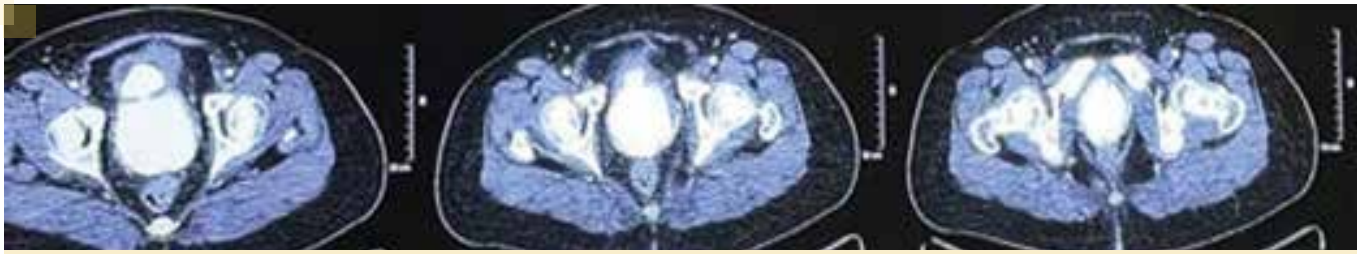


Figure 2: Plain CT (part of PET CT) showing a large vaginal stone with a dumbbell-shaped component inside the bladder

The patient was managed by endoscopic removal of the vaginal stone and robot-assisted removal of the bladder stone as it was not possible from the vaginal approach. Later it was found that her fistula was very big and present at the bladder neck. Urethrovesical reconstruction was made possible by a robotic approach only. The patient voided well with no incontinence 3 weeks after surgery.

A Rare Case of Thrombotic Thrombocytopenic Purpura - Hemolytic Uremic Syndrome with PRES

Dr Neetu Ramrakhiani
Director - Neurology,
Fortis Escorts Hospital, Jaipur

Thrombotic thrombocytopenic purpura (TTP) - Hemolytic-uremic syndrome (HUS) is a rare disorder, difficult to identify, fatal-which needs urgent diagnosis and early treatment with PLEX (plasmapheresis). Thrombotic microangiopathies (TMAs) are pathological conditions characterized by generalized microvascular occlusion by platelet thrombi, thrombocytopenia, and microangiopathic hemolytic anemia. Two typical phenotypes of TMAs are HUS and TTP. Other disorders occasionally present with similar manifestations. Depending on whether renal or brain lesions prevail, two pathologically indistinguishable but somehow clinically different disorders have been described: HUS and TTP (1). They may present with fever, thrombocytopenia, renal failure, MAHA, and neurological manifestations. Delay in diagnosis and management inevitably leads to a rapidly progressive and fatal course.

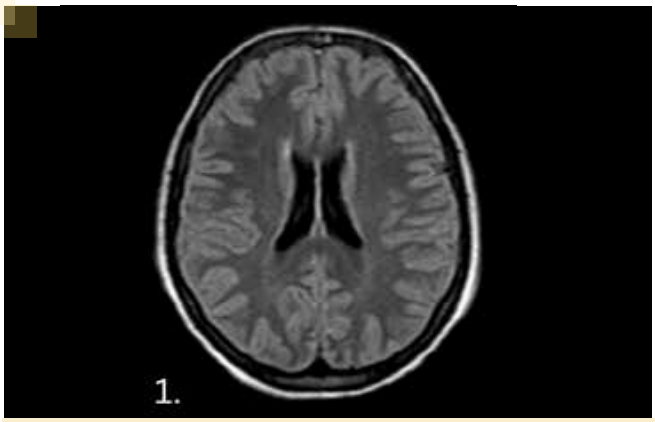
Case Presentation

Our patient, a 22-year-old female, was admitted with history of loose stools (8-10 episodes) for 5 days duration followed by bilious non-projectile vomiting and one episode of seizure with up rolling of eyeballs and loss of consciousness on the day of admission. No associated co-morbid illness was present. She had had an uneventful normal vaginal hospital delivery 40 days back. There was no past history of fever, joint pain, or skin rash. On examination, the patient had a blood pressure of 116/66 mmHg, respiratory rate of 16 per minute and tachycardia (105/minute regular pulse), was dehydrated and afebrile. She had spontaneous eye-opening, was not responding to verbal commands, the pupils were bilateral 3mm normal, with no meningeal signs, and localizing to pain. No lateralizing signs were present. The initial provisional diagnosis was thought to be cerebral venous thrombosis considering the postpartum state, and preceding loose motions which may have been responsible for dehydration and lack of fever historically. Routine investigation showed Hb 12.1 gm/dl, TLC 11.2*103 cells/cmm, Plt 75,000*103 cells/cmm with decreased renal functions and indirect hyperbilirubinemia. A urine routine examination revealed proteinuria. Magnetic resonance imaging and venography were done which were found to be normal. She had respiratory distress a few hours after admission which required urgent intubation and ventilation. A lumbar tap was planned but could not be done due to falling platelet counts. Workup for tropical fever like malaria, dengue and scrub typhus were normal (Fig 1 and 2). On Day 2 she started getting intermittent fever spikes of moderate grade and rapid rise in serum creatinine despite good urine output. She went into status epilepticus and was loaded with antiepileptic medication. Blood culture and urine culture were sterile. The Widal test was also negative. Ultrasonography of the abdomen revealed mild hepatomegaly with bilateral medical renal disease. Autoimmune markers Anti-nuclear antigen (ANA), Antineutrophil Cytoplasmic Autoantibody, Cytoplasmic (C ANCA) and Perinuclear anti-neutrophil cytoplasmic antibodies (P ANCA), C3, C4 and rheumatoid factor were negative. Procalcitonin levels were not significantly elevated. Peripheral blood film did not reveal any schistocytes. Markers for Hepatitis B and human immunodeficiency virus (HIV) were negative. In view of negative autoimmune markers, lack of evidence of infections (sterile cultures, absence of history of fever at onset and low procalcitonin levels) possibility of HUS-TTP syndrome was kept in view of thrombocytopenia, uremia, refractory seizures, indirect hyperbilirubinemia and raised LDH. The patient was started on plasma exchange (PLEX) in view of the rapidly deteriorating course. After initiation of PLEX, a gradual response was obtained in

the form of decreased seizure frequency and a decrease in the range of fever. Total 7 cycles of PLEX were done. Dialysis was done due to raised creatinine (Table I). EEG was done which showed bihemisphere slowing. MRI brain was repeated as the patient was not regaining sensorium despite decreased uremia, normal electrolytes and counts. Repeat MRI showed changes in form of bilateral symmetrical posterior dominant white matter changes suggestive of PRES (posterior reversible encephalopathy syndrome) (Fig. 3, 4, 5). The clinical course was complicated by sepsis (raised counts of procalcitonin 25.1) which was managed with antibiotics according to culture & sensitivity. Gradually the patient regained consciousness; the platelet count improved, gradually antiepileptic drugs were tapered and by the time of discharge she was able to walk with support and managed medically.

Discussion

The majority of cases with HUS occur in childhood and are preceded by bloody diarrhoea, usually caused by some strains of enterohemorrhagic Escherichia coli or Shigella dysenteriae. It is generally held that diarrhoea-associated HUS (D+HUS), activation of endothelial cells with subsequent release of von Willebrand factor (vWF) and increased endothelial secretion of plasminogen activator inhibitor I (PAI-1), are central to the clumping of platelets in the renal microcirculation. Shiga-toxin receptors are most abundant in the proximal tubular cells. Shiga-toxin appears to produce tubular epithelial cell damage and to induce tumour necrosis factor (TNF) in kidneys but not in other organs (2). Patients with TTP have usually large multimers of von Willebrand factor(vWF) in their plasma. Patients with TTP lack a plasma protease that is responsible for the breakdown of this ultra-large vWf multimers. In the congenital form of TTP, mutations in the gene encoding this protease have been described. In the more common sporadic form, an antibody inhibitor can be isolated in most patients. This protease has been isolated and cloned and is designated ADAMTS13 (A disintegrin-like and metalloprotease with thrombospondin type 1 motif13). The activity of this protease is normal in most patients with classic HUS suggesting differing pathogenesis of these closely related entities (3). PRES is a rare neurotoxic state that is coupled with a rapid onset of symptoms, most commonly mental state (4), & characteristic vasogenic oedema seen in imaging studies (5). In this case, we report the course of association of TTP-HUS with PRES. The diagnosis of TTP-HUS was based on clinical presentation, since we could not do ADAMTS13 activity level due to financial issues and C3 and C4 levels were normal & there were negative autoimmune markers & normal MRI & venogram, we empirically started PLEX, a total of 7 cycles were done, the patient was not regaining sensorium despite decreased uraemia, normal electrolytes and counts. Repeat MRI-Brain done, which showed signs of PRES. The relationship between the two diseases lie in the pathophysiology, autoregulation of blood flow to the brain caused by HTN (4) and endothelial dysfunction caused by inflammatory processes. These mechanisms explain the association of PRES with many autoimmune diseases such as HUS (6), scleroderma (7), and juvenile idiopathic arthritis (8). The diagnosis of PRES is based on clinical presentation & radiological findings on MRI. The findings on MRI include multifocal altered signal intensity area seen in bilateral cerebral and cerebellar hemisphere predominantly involving the deep cortical grey matter and white matter showing a hyperintense signal on T2WI FLAIR (fluid-attenuated inversion recovery) without diffusion restriction with increased signal on ADC (apparent diffusion coefficient). Though the studies demonstrated that the abnormalities found in imaging studies did not affect the clinical outcomes, irrespective of how extensive they were [9], nevertheless maintaining high index of suspicion is warranted and management of TTP-HUS with PLEX as early as possible can alter the prognosis.



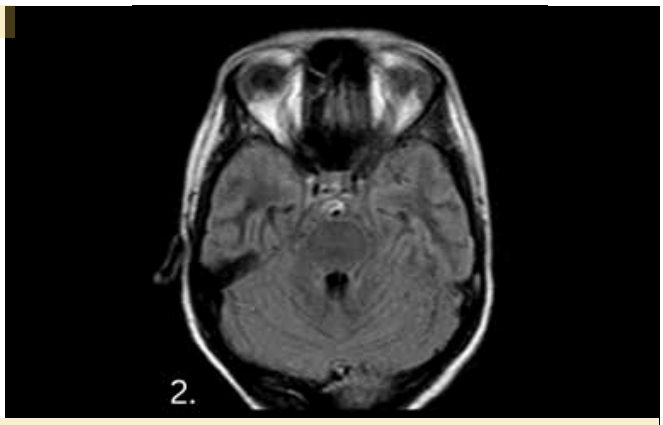


Figure 1 and 2: Normal Axial T2 flair imaging. (On admission)

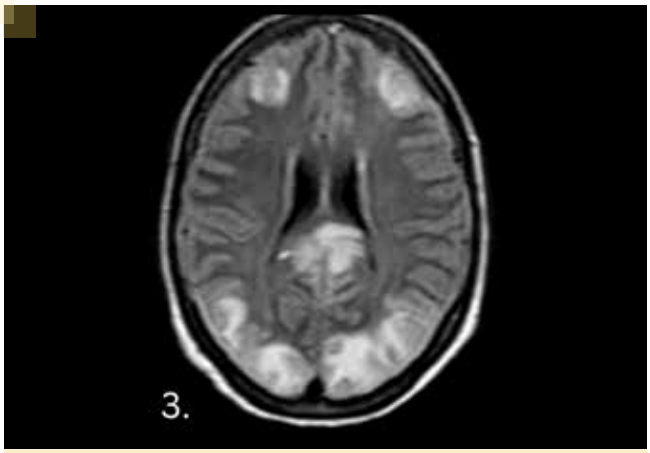


Figure 3: (7 days later) Axial T2W/ T2 flair hyperintensities involving cortical-subcortical regions of bilateral frontal, parieto-occipital, splenium of corpus collosum with sulcal effacement

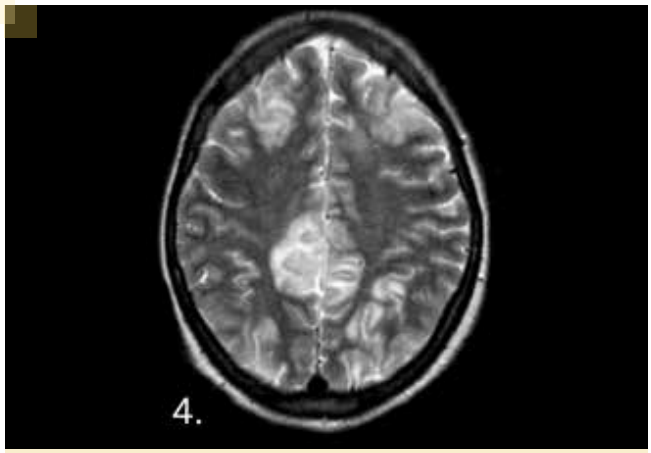


Figure 4: Axial T2W image showing bilateral frontal, parasagittal and posterior parietal hyperintensities

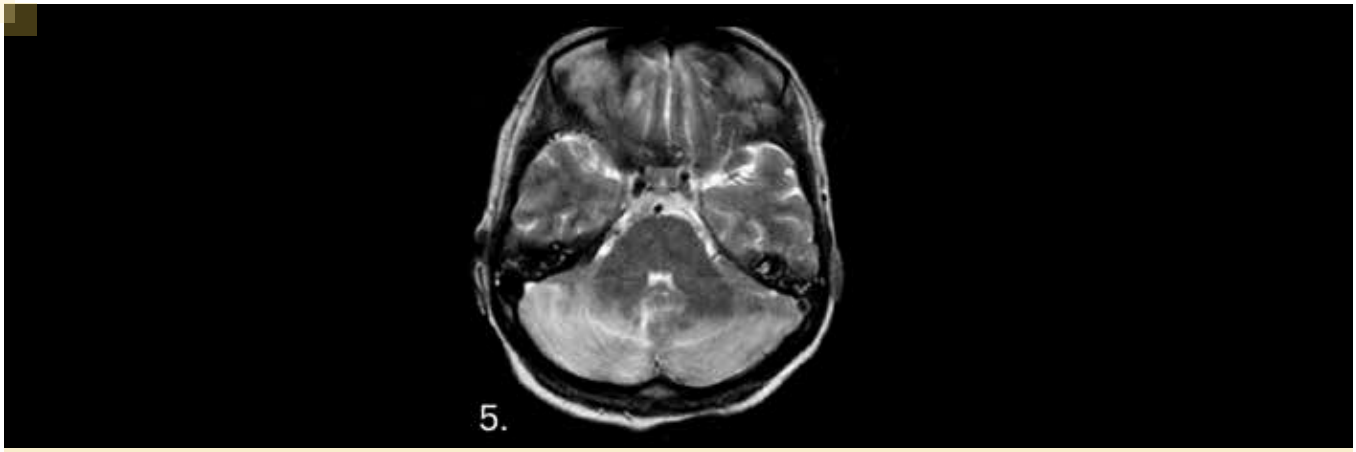


Figure 5: Axial T2W image showing bilateral cerebellar hyperintensities

Normal Range Date	Hb gm/dl (13-17)	TLCx 103 Cells/cmm (4-10)	HCT	Platelet	Sr. Creatinine	Sr. Na	Sr. K	LDH	Indirect bilirubinemia
04 Jan	12.1	11.2	33.0	75	3.42	138	4.18	1400	1.74
05 Jan	11.1	8.4	31.8	50	4.49	-	-	-	-
06 Jan	8.6	9.6	24.5	55	6.92	145	2.53	-	-
07 Jan	7.0	7.6	20.8	60	3.70	147	3.20	-	-
08 Jan	9.1	8.4	27.1	100	3.08	136	3.73	-	-
10 Jan	6.8	11.6	19.6	90	2.68	145	3.34	-	-
12 Jan	7.4	7.7	22.0	150	4.67	145	3.44	862	-
16 Jan	9.0	15.6	26.9	264	-	-	-	-	-

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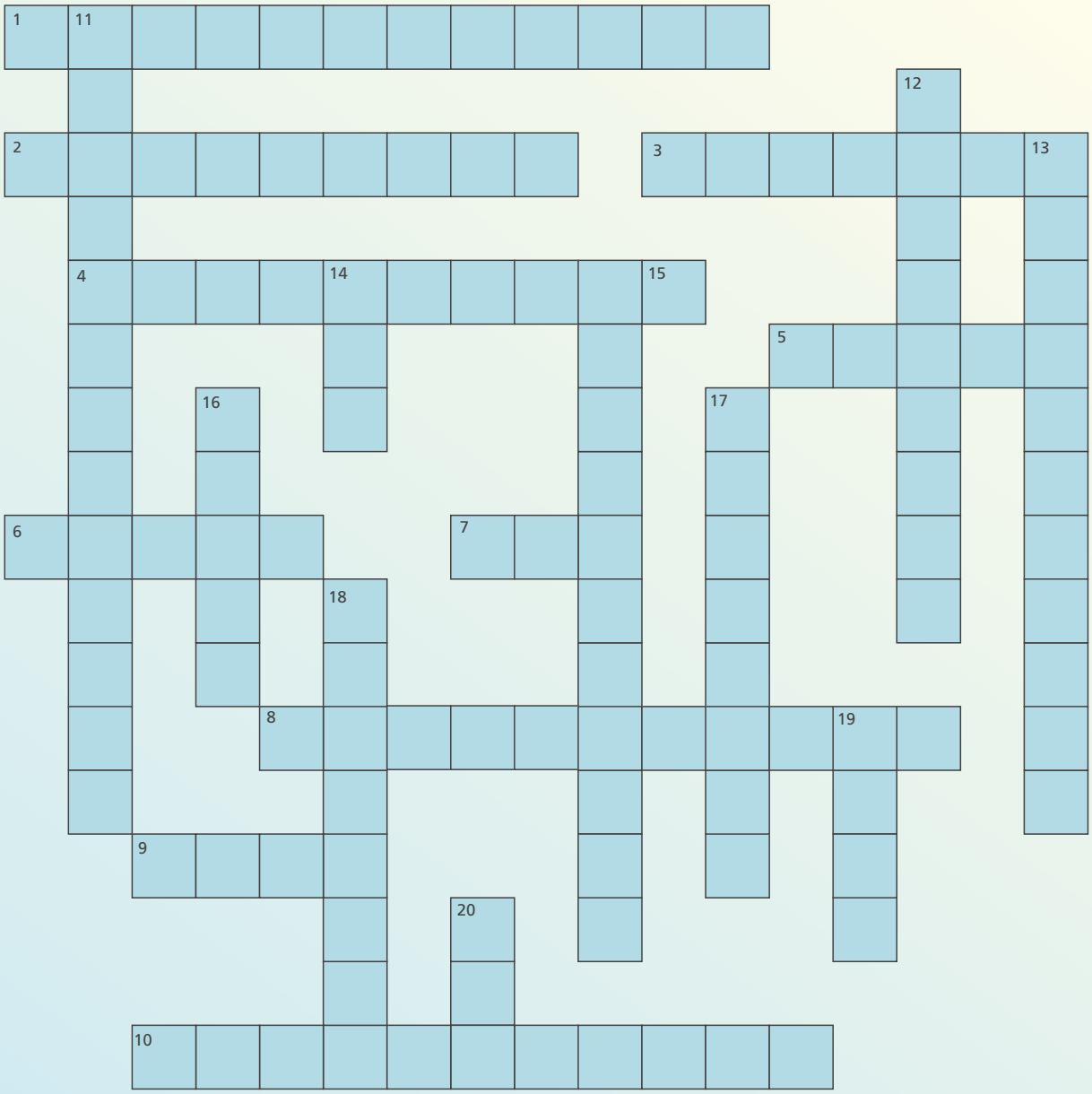
TRIVIA

Crossword



Across

1. Vasectomy reversal
2. A disease where scar tissue in the penis causes it to bend, curve or lose length or girth
3. Having a small amount of this in the urine can be a sign of kidney disease
4. Another name for renal water channels
5. Dr Kirpal ____ is considered to be the father of nephrology in India
6. An infection of the urinary tract caused due to a urinary catheter.
7. A test that measures how well your kidneys are functioning.
8. Treatment of kidney stones by sending using focused ultrasonic energy or shock waves directly to the stone first located with fluoroscopy or ultrasound.
9. Type of intercalated cells that secrete bicarbonate.
10. Diagnostic tests to examine bladder and urethral sphincter function.

Down

11. Inhibitor of carbonic anhydrase.
12. Of the four available dialyser membrane materials, which is the least compatible- cellulose, modified cellulose, cellulo-synthetic or synthetic?
13. A reproducible standardized classification system that quantitates the salient anatomy of renal masses is called —— Score.
14. It may be higher in men who have prostate cancer, benign prostatic hypertrophy (BPH), or infection or inflammation of the prostate.
15. An artificial opening created between the kidney and skin to allow urinary diversion directly from the upper part of the urinary system.
16. The thin ascending loop of Henle is impermeable to —.
17. Type of diuretic used in the distal convoluted tubule.
18. —— calculi are commonly considered to be radiolucent.
19. Eating less of this can control the blood pressure and reduce swelling.
20. Most common case of hospital-acquired AKI.

A Rare Case of Tubercular Recto-prostatic Urethral Fistula with Tuberculous Orchitis

To Cite: Pathak N, Keshavamurthy M, Rao K, Tabrez S, Ashwathaiya MB, Krishnappa P. A rare case of tubercular recto-prostatic urethral fistula with tuberculous orchitis. Urol Case Rep. 2020 Jul 27;33:101355. doi: 10.1016/j.eucr.2020.101355. PMID: 33102054; PMCID: PMC7573927.

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Dr Mohan Keshavamurthy
Senior Director - Uro Oncology,
Uro Gynaecology, Transplant and Robotic Surgery,
Fortis Hospital, Bannerghatta Road, Bangalore

Dr Shakir Tabrez
Additional Director - Uro Oncology, Uro Gynaecology,
Transplant and Robotic Surgery,
Fortis Hospitals, Bangalore

Dr Premkumar Krishnappa
Senior Consultant - Uro Oncology,
Transplant and Robotic Surgery,
Fortis Hospitals, Bangalore

Dr Karthik Rao
Consultant - Uro Oncology,
Transplant and Robotic Surgery,
Fortis Hospital, Bannerghatta Road, Bangalore

Dr Mohan Balaiah Aswathaiya
Consultant - Uro Oncology,
Transplant and Robotic Surgery,
Fortis Hospital, Bannerghatta Road, Bangalore

Abstract

Tubercular prostatitis and tuberculous orchitis are uncommon manifestations of genitourinary tuberculosis. Recto prostatic urethral fistula is also an extremely rare condition with less than 10 cases of tubercular recto-urethral fistula reported in literature. We present a case of post-tubercular recto-prostatic urethral fistula, which was diagnosed by history, clinical examination, micturating cystourethrogram, cystourethroscopy and MRI abdomen pelvis. The patient was treated by simple prostatectomy with rectal repair with omental interposition along with a diversion ileostomy, followed by a course of Anti tubercular drugs following histopathological confirmation.

Case Description

A 70-year-old diabetic and hypertensive presented with complaints of passage of urine per rectum since 1 year with recurrent right testicular pain and recent onset of pus discharge from right scrotum, urinary frequency, occasional dysuria and previous history of recurrent UTI. There was no history of pneumaturia, fecaluria, alteration in bowel habits or bleeding per rectum. He had a past history of left orchidectomy for recurrent epididymo-orchitis 3 years back. Clinical examination revealed right testicular tenderness with induration of the epididymis and a sinus discharging pus in the right scrotal wall. On digital rectal examination, grade 1 firm prostate with variegated surface was noted, and an indurated area in the anterior wall of rectum just adjacent to the prostate.

Retrograde urethrogram was suggestive of prostatic urethral diverticulum. Micturating cystourethrogram showed opacification of large bowel loops suggestive of vesico rectal fistula. MRI revealed a fistulous tract between the prostate and rectum (Fig. 1).

Discussion

Tubercular involvement of the prostate gland is known to present as granulomatous prostatitis. The exact incidence is unknown at present, but is reportedly low. It is less common than renal, urinary bladder, seminal vesicle and epididymal tuberculosis. Testicular tuberculosis is an uncommon form, seen in only 3% cases of genitourinary tuberculosis.[3]

Recto-urethral fistula is an uncommon but distressing condition for both the patient and the operating surgeon. Optimal strategies for management need to be devised in order to reduce the morbidity associated with the disease. Most studies for benign recto-urethral fistulas have advocated fecal and urinary diversion as the initial treatment. After diversion, spontaneous closure has been reported to be 14%–46.5%.4 Fecaluria is known to be a poor prognostic sign, indicating that the fistula may be large in size and difficult to heal. Different methods of treatment are described in literature, like diversion, surgical procedures like perineal approach with dartos pedicled flap, posterior sagittal approach, transanal approach, posterior trans-sphincteric approach or modified York-Mason method, use of rectal advancement flaps, gracilis flaps or omental transposition.[5]

In view of the large size of the recto urethral fistula in this patient he underwent simple prostatectomy with rectal repair and omental interposition. This case is being reported as Tuberculosis causing a recto-urethral fistula is extremely rare.

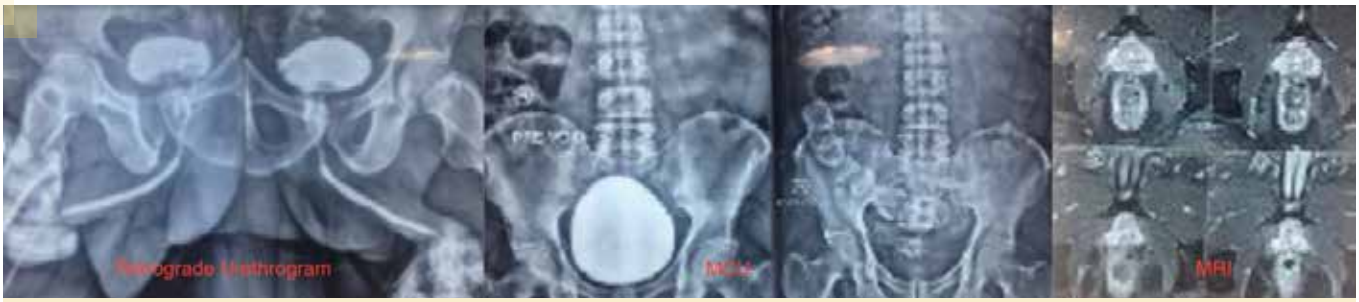

Figure 1: RGU, MCU and MRI films revealing the recto prostatic urethral fistula

Figure 2: Cystoscopy and sigmoidoscopy images revealing site of Fistula

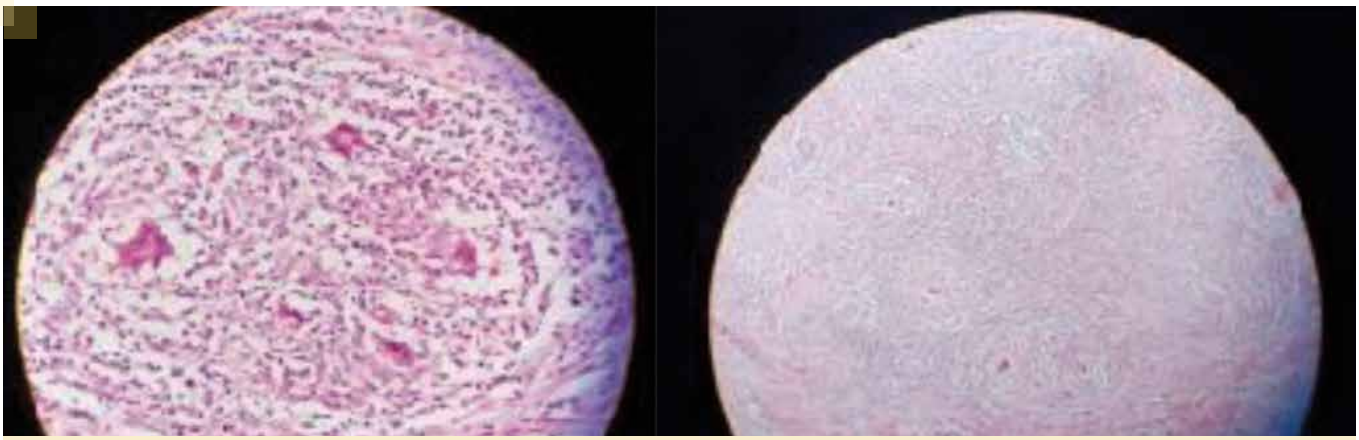

Figure 3: Microscopic examination revealing the granulomatous inflammation with Langhans Giant cells

Conclusion

Spontaneous tubercular recto-prostatic urethral fistulae are a rare complication of prostatic tuberculosis. There is no renal, ureteric or bladder involvement. The fistulae open adjacent to the verumontanum in the prostatic urethra. Tuberculous orchitis is also an uncommon manifestation of genitourinary tuberculosis. Urine for Acid Fast Bacilli may be negative and only prostatic and testicular biopsies may prove the diagnosis. Hence in recto-urethral fistulas there should be a high index of suspicion of Tuberculosis especially in countries where it is endemic.

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Coping Strategies for Dialysis Patients

Dr Samir Parikh
Director - Mental Health and Behavioral Sciences
Fortis National Mental Health Program
Fortis Healthcare

Experiencing a kidney disease and undergoing dialysis involves making a significant lifestyle shift – be it the time and effort required for the appointments alone, the monitoring of day-to-day food and diet, or the financial impact it may have on a patient and families. It is natural for patients to feel shock, sadness, anger or when first understanding the implications of the disease. However, as patients adjust to the treatment and with the right kind of support, patients undergoing dialysis can go on to live happy and meaningful lives.

Given the range of emotions dialysis the patients may experience, psychological support can be a key determinant to how the person copes with this condition. Counselling can help patients express their feelings, which they may otherwise be reluctant to share for fear of burdening family members. It can also help work through difficult emotions such as sadness, fear and guilt and build a greater sense of acceptance; which is the first step to bringing about change.

Even as dialysis brings about significant changes in everyday life, it is important for patients to continue making time for certain activities that bring them joy and a sense of purpose. Finding ways to stay engaged during the treatment and zooming out from an exclusive focus on physical health to embrace other aspects of life also eases adjustment.

Our support systems play perhaps the most important role during treatment journey. Staying connected with friends and family, sharing thoughts, feelings, and the lived experience can bring a sense of catharsis. At the same time, it is important to reach out and ask for help and support as required. Support groups can also be a great platform to connect with others who may be going through similar experiences.

While it's normal to feel distress when first adapting to dialysis, for most people this distress should gradually subside as they learn effective ways to cope. However, studies reported by the American Psychological Association suggest that 1 in every 5 people undergoing dialysis experience depression and 45% people on dialysis for end-stage renal disease experience an anxiety disorder. Mental health interventions at this stage play an important role in ensuring 360-degree care and support for patients to lead healthy, happy and rewarding lives.

IN THE NEWS

12-year-old Nigerian Boy's Genitals Surgically Reconstructed in Rare Surgery

Dr Mohan Keshavamurthy
Senior Director - Uro Oncology,
Uro Gynaecology, Transplant and Robotic Surgery,
Fortis Hospital, Bannerghatta Road, Bangalore

Rare and complex multiple surgeries were successfully performed on a 12-year-old Nigerian boy who lost his external genitalia in a road accident six years ago. He was a victim of multiple body injuries and had undergone amputation of his entire penis and right testes, owing to the major accident. Since then he has been unable to pass urine normally and has been living with a catheter. He was even going to school with the plastic bag hanging down all the time.

A multi-disciplinary team of doctors at Fortis Hospitals, Bangalore and Chairman - Renal Sciences Specialty Council at Fortis Hospitals, India successfully reconstructed his genital organs. The patient was discharged 10 days after the surgery.

Elaborating on the rare procedure, Dr Mohan Keshavamurthy, Director - Urology, Uro-Oncology, Uro-Gynaecology, Andrology, Transplant and Robotic Surgery at Fortis Hospitals, Bangalore and Chairman Renal Sciences Specialty Council at Fortis Hospitals, India said, "This was a very complex and rare surgery. We had to do a Cystoscopy (a procedure to look inside the bladder using a thin camera) followed by a Robot-Assisted Laparoscopic Ileal Augmentation of Bladder wherein the bladder is enlarged using a section of small intestine under general anaesthesia to protect the upper urinary tract and re-establish continence.

The patient was then moved to the Paediatric Intensive Care Unit for observation. Post successful completion of the first stage, hormonal replacement procedure was done. The second stage penile reconstruction was carried out using superficial circumflex iliac island skin flap wherein a thin skin flap was harvested from the groin and penile prosthesis with a cylinder in- side the flap to assist in sexual intercourse once the child becomes an adult." The boy's urethral catheter was removed after the re- constructive surgery. He is currently doing well and has returned to his country. He will be coming back after six months for the third stage of the surgery.

Fortis Malar, Chennai, Successfully Performs 'Inter-state Swap' Living Donor Kidney Transplant

Fortis Malar Hospital, Chennai, a leading hospital known for its 30-year legacy in organ transplantation, successfully performed living donor kidney "SWAP transplant," a procedure in which donor organs are exchanged and transplanted to compatible patient from different family. One family from Kerala and another family from Tamil Nadu. Fortis Malar is proud to have conducted this kind of a life enhancing procedure.

Fortis Malar hospital witnessed a very peculiar case. 56-year-old mother wanted to donate a kidney to her 30-year-old son (from Kerala). Additionally, a 58-year-old wanted to give one kidney to her 65 year old husband (from Tamil Nadu) but both the donors were not blood compatible to their respective family members. However, the expert team from Fortis Malar, found very compatible to other family recipient and hence suggested the “swap transplant procedure”. Both families from different state were willing to undergo this procedure and had agreed to make progress. Expert team from Fortis Malar including Dr Prabhu Kanchi – Clinical Lead, Department of Nephrology and Transplant, Dr Neelamekam Kapali – Head of GI Surgery and Organ Transplant, Dr Rajkumar - Consultant Urologist, Dr Vidhya, Senior Consultant and Head, Department of Anaeasthesia, and Mr Vaseekaran, Surgery Associate - Department of Nephrology and Organ Transplant successfully performed the Interstate swap transplant on these pair. Post the procedure, the patient have been discharged from the hospital.

Approach Towards Hypoglycaemia During Haemodialysis: Moving from Reactive Treatment to Proactive Prevention

Ms Sherin Aranha
Pain Management Nurse,
Fortis Hospital, Mulund

Ms Shiney Baby
Nurse Incharge-Dialysis Department,
Fortis Hospital, Mulund

Introduction

Chronic Kidney Disease (CKD) patients undergoing haemodialysis are at increased risk of haemodialysis-induced hypoglycaemia due to reasons which includes decreased gluconeogenesis in the remnant kidneys, deranged metabolic pathways, inadequate nutrition, decreased insulin clearance, glucose loss to the dialysate and diffusion of glucose into erythrocytes during haemodialysis. The incidence of hypoglycaemia is very common in every dialysis set-up which gets treated after the event and in some cases progresses to Code Blue Events.

Background

Events of hypoglycemia has been documented during regular hemodialysis (HD) in both diabetic and nondiabetic CKD patients. At Fortis Mulund, on an average 2000/monthly dialysis are performed. Number of hypoglycemia (blood glucose below 100mg/dl) events among dialysis patients ranged from 132 (6.63%) to 79 (4.14%) events (Sep21-May22).

Standard treatment to treat hypoglycemia is by administration of injection Dextrose. The monthly consumption of Inj.25% Dextrose-100ml and 10% Dextrose-500ml was on rise with no inventory control (Sep21-May22).

Two events of Code Blue were activated due to hypoglycemia which depicts unexpected patient outcome. This study focuses on the prevention of hypoglycemia in patients undergoing hemodialysis.

Objectives

- To identify and assess patients who have frequent episodes of hypoglycaemia during haemodialysis.
- To check the effectiveness of the use of glucose containing dialysate during haemodialysis.
- To compare the Hypoglycaemia events during pre-dialysis, intra-dialysis and post-dialysis between the control and experimental group.
- To reduce hypoglycaemia events/RRT/Code Blue activation due to hypoglycaemia during Haemodialysis.

Methodology

- Approach-Quantitative Quasi Experimental approach.
- Setting-Day care haemodialysis unit.
- Sample- Haemodialysis patients having hypoglycaemia events.
- Sample Size- 44 each in control and experimental group (n-88).
- Sampling Technique- Purposive sampling.
- Study Duration- June 2022 to July 2022.

Team Involved

The project team consisted of the Consultant Nephrologist, the nephrology registrar, Nurse-educators, nurse-in charges, technicians and the SCM team who implemented the project through various stages.

Intervention

Step 1: Identify patients who have frequent episodes of hypoglycaemia during haemodialysis. 150 haemodialysis patients were surveyed in the unit regarding hemodialysis induced hypoglycemia (May 2022). 89 haemodialysis patients had episodes of hypoglycaemia during dialysis. Out of the 89, 20 patients were educated

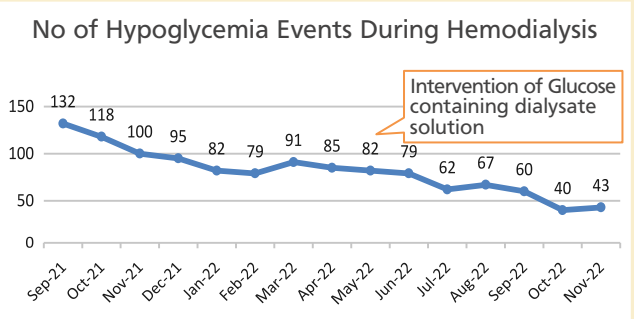

Figure 1: Shows the gradual reduction Number of hypoglycaemia events with constant teaching, monitoring and implementation of glucose containing dialysate.

by the unit nurses to eat a meal before coming for dialysis to ensure that the blood glucose level remains above 100mg/dl.

Step 2: Conduct a comparative study to check the effectiveness of glucose free dialysates versus glucose containing dialysate solution in haemodialysis patient with frequent hypoglycaemia. Between June 2022 to July 2022, 44 patients each were selected in the control and experimental group. The control group received glucose free dialysate and the experimental group received glucose containing dialysate.

Figure 2: Comparison between events of Hypoglycaemia in Control vs Experimental Group.

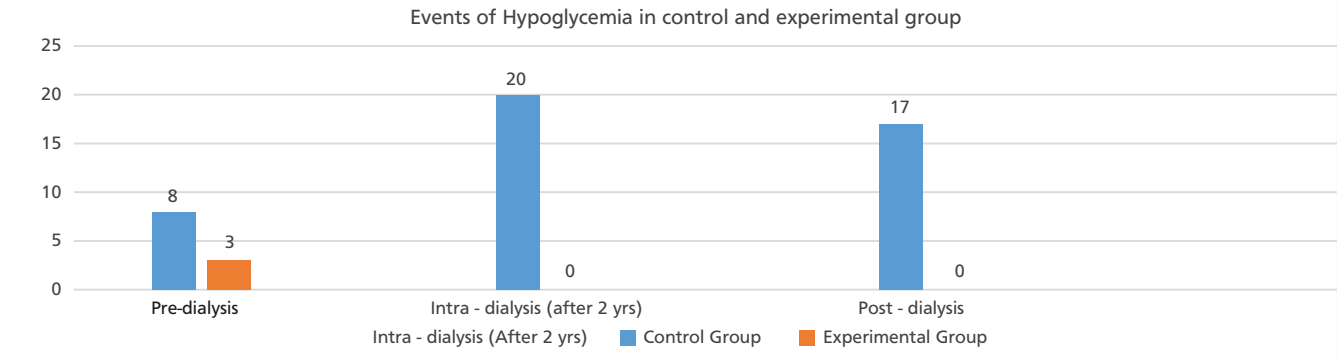

Figure 2: The calculated t-value of blood glucose level during intra-dialysis (after 2hrs.) was 4.05 and post-dialysis was 3.56 which win greater than the table value of 1.98. Comparative study between glucose free dialysate and glucose containing dialysate showed the use of glucose containing dialysate solution was effective in reducing the hypoglycaemic events.

Table 1: Consumption of Inj.25% Dextrose (100ml) & Inj. 10% Dextrose (500ml) from department stock

Consumption of Inj. Dextrose	PRE-INTERVENTION									INTERVENTION			POST-INTERVENTION		
	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22
Quantity of Inj. 25% Dextrose 100ml consumption	633	526	603	450	471	426	572	415	381	235	222	214	203	212	213
Quantity of Inj. 10% Dextrose 500ml consumption	226	226	200	222	201	178	72	87	103	0	0	4	0	4	4

*Table 1 shows the reduction of usage of department stock of Inj. 25% Dextrose (100ml) & Inj.10% Dextrose (500ml) from as high as 859 in the month of Sep'21 to 203 in the month of Sep'22.

Figure 3: Total cost reduction of department consumption of Inj. 25% Dextrose (100ml) & Inj.10% Dextrose (500ml)

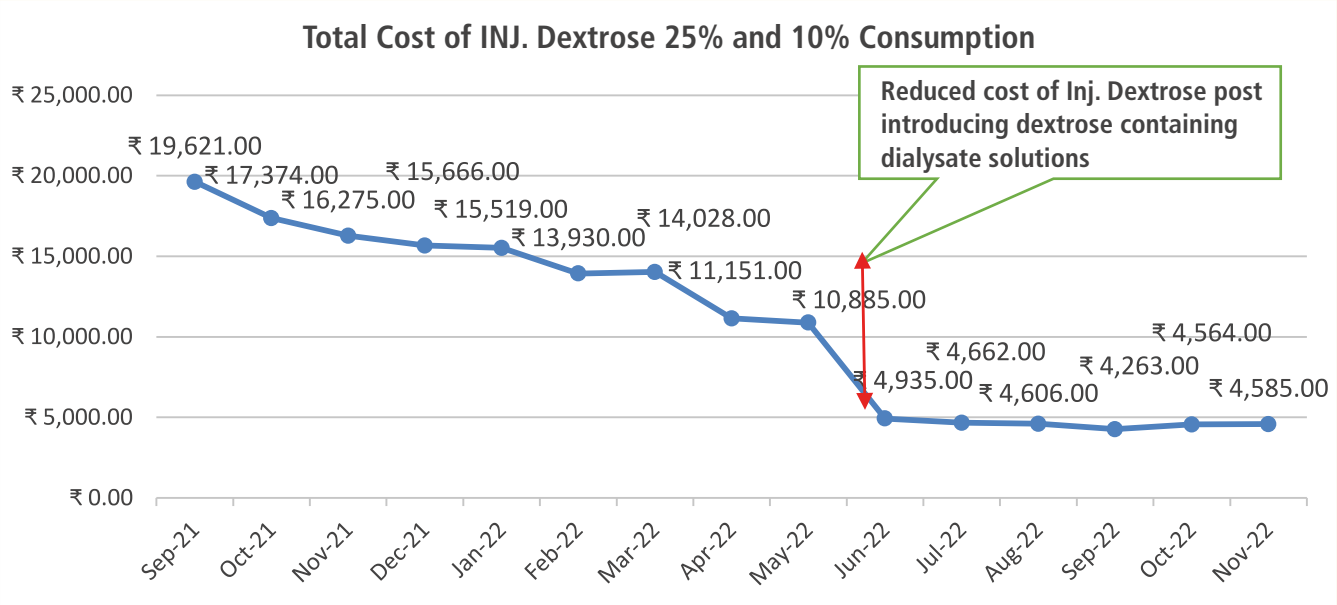

Figure 3: Shows the monthly reduction of department consumption of Inj. 25% Dextrose & Inj. 10% Dextrose as high as Rs. 19,621 in Sep'21 to as less as Rs. 4,606 in Aug'22.

Sustenance

- A list of patients who have frequent hypoglycaemia is prepared and revised on a monthly basis so that all nurses and technicians are aware.
- Patients are informed that during dialysis, glucose containing dialysate solutions will be used for them instead of the Inj. Dextrose 25% 100ml which is administered to them in case of hypoglycaemia. Also no additional charges would be charged to them as per package.
- The SCM team are informed to order monthly stock of glucose containing dialysate solution as per the usage.
- Patients are educated on regular basis by the nurses and reminded to consume a full meal at least one hour before coming for dialysis.
- Early detection of hypoglycaemia with RCA is captured vigilantly as a part of Nursing Practice outcome indicator, analysed and presented every month.

Conclusion

- Hypoglycaemic events can be exceptionally serious, even life-threatening, and can make glycaemic control of dialysis patients challenging. The approach to hypoglycaemia in this study reflects a paradigm shift from reactive treatment to proactive prevention of hypoglycaemia. Moving from reactive treatment to prevention represents a cultural change with an opportunity for improved patient care.
- Appropriate glycaemic control tailored for patients on haemodialysis is needed to prevent haemodialysis-induced hypoglycaemia. The study gives an insight that educating patients on eating meals before coming for dialysis and introducing glucose-containing dialysate for patients prone for hypoglycaemia can help to reduce hypoglycaemic events in the dialysis unit.

Congratulations to Dr Virendra Jain - Director and Head - Neuroanaesthesia, Fortis Memorial Research Institute, Gurugram, for taking over as the President of Indian society of Neuroanaesthesiology and Critical Care (ISNACC)

iThink - The Fortis Innovation Challenge

Event Details

With the purpose of creating a platform for the entire organisation to innovate across hospital functions and thus enhance patient experience, we launched **iThink – The Fortis Innovation Challenge** in October last year. We received a total of 186 entries in clinical outcomes, nursing processes and operations, patient experience and sustainability from across our facilities. Of these, 11 innovative ideas were selected for the Finale, held recently at flagship facility - Fortis Hospital, Gurugram. Teams flew in from across the country to present their ideas to an August jury, comprising the Fortis senior leadership team. The event was attended by several other Fortis dignitaries, including senior doctors and business heads, as well as the head of the innovation team at IHH. Each idea presented was innovative and brilliant, with several having been tested already and capable of being scaling up for implementation across Fortis. The winning ideas were from clinical advancements and nursing innovations in the ICU, with special awards for ideas in nursing operations and sustainability initiatives. A big round of applause for all the innovators who made it tough for the jury to pick a winner.

WINNERS

Winner
Mr. Sachin D Kadam
Fortis Mulund for project/idea - Endoscopic Intra-Procedural Aqua Expeller

1st Runner Up
Dr. Anil Mandhani
Fortis Memorial Research Institute - amSafeX Catheter

2nd Runner Up
Sister Vaishnavi, Sister Angela A.K & Team
Fortis S L Raheja for "Mothers Touch with Water Filled Gloves - Developmental Supportive Care for Neonates "

SPECIAL AWARD

Mr Rahul Durani
Corporate Office
for Go Green, Go Paperless

Mr Ajay Pandita
Fortis Memorial Research Institute
for Go Green, Go Paperless

Ms Sarabjeet
Corporate Office
for Go Green, Go Paperless

Dr Hitesh Sanghvi

Sister Minimole Varghese

Bincy S Thomas

Fortis Mulund for Creation of Tracheostomy Bay & Process Standardisation


Fortis
think
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ONCO CONNECT

Central Tumour Board: General Oncology

Dated - 2nd February, 2023

COORDINATOR	**Dr Sreekanth Reddy** Senior Consultant - Surgical Oncology, Fortis Hospital, Bannerghatta Road, Bangalore
PANELISTS	**SURGICAL ONCOLOGISTS** **Dr Sandeep Nayak** Senior Director - Surgical Oncology, Robotic and Laparoscopic Oncology, Fortis Hospitals, Bangalore **Dr Anil Heroor** Head and Senior Consultant - Surgical Oncology, Fortis Hospital, Mulund
	MEDICAL ONCOLOGISTS **Dr Ankur Bahl** Senior Director - Medical Oncology and Haemato-Oncology, Fortis Medical Research Centre, Gurugram **Dr Mohit Aggarwal** Director and Head - Medical Oncology, Fortis Hospital, Shalimar Bagh, New Delhi **Dr Vivek Belathur** Senior Consultant - Medical Oncology, Fortis Hospital, Bannerghatta Road, Bangalore
	RADIATION ONCOLOGISTS **Dr Amal Roy Chowdhury** Director - Radiation Oncology, Fortis Medical Research Institute, Gurugram **Dr Vineeta Goel** Director - Radiation Oncology, Fortis Hospital, Shalimar Bagh, New Delhi **Dr Nisha Thottam Vishnu** Consultant - Radiation Oncology, Fortis Hospital, Bannerghatta Road, Bangalore
	NUCLEAR MEDICINE SPECIALIST **Dr Gayana S.** Consultant and Head - Nuclear Medicine, Fortis Hospital, Bannerghatta Road, Bangalore
	ONCO PATHOLOGIST **Dr Kunal Sharma** Associate Director and Section Head, Centre of Excellence and Histopathology, Mumbai Reference Lab, Lead – Dp and AI Initiatives, SRL Diagnostics

Cases

Dr Sandeep Nayak
Senior Director - Surgical Oncology,
Robotic and Laparoscopic Oncology,
Fortis Hospitals, Bangalore

Presenter
Dr Chirag Bhirud
Senior Fellow - Surgical Oncology,
Fortis Hospital, Bannerghatta Road, Bangalore

Case 1

- 60 yrs Female
- Case of Carcinoma Left Breast
- Biopsy-IDC –NOS
- Hormonal Status- ER 3+/PR3+/Her2 Neu –Negative
- Patient was a locally advanced breast cancer with clinical stage cT3N3b
- Ipsilateral axillary and IMLN were positive in PET CT.
- Received 3 cycles of FEC.
- Patient had no response on the NACT and underwent modified radical mastectomy+ internal mammary lymph node dissection.
- Histopathology-
  - IDC-Grade 3
  - Lymph Node- Level I & II- 18/19 Level III- 3/5 Internal mammary nodes- 5/5
  - LVI-Present
  - No response to neoadjuvant therapy
- Received 4 cycles Docetaxel as adjuvant therapy.
- Was planned for adjuvant radiotherapy
- On radiotherapy planning PET CT. Theatient had right axillary node and left supraclavicular lymph node. No disease elsewhere.
- Biopsy from right axillary node- metastatic carcinoma
- Hormonal status-ER – Negative/PR-Negative/Her2neu-Negative

Discussion

The patient was planned to undergo testing for BRCA mutation. If not willing for the same, it was planned to consider for platinum-based chemotherapy in view of progressive disease and response assessment.

Case 2

- 35yrs female
- Case of uterine mass
- Operated elsewhere – TAH + BSO – piece meal removal of the uterine mass
- Follow up PET CT : On follow up PET scan-few external iliac nodes FDG avid nodule 1x1cm in the vault
- HPR : Leiomyosarcoma

Discussion

It was planned to look for operability for the residual disease. Since it was not operable it was planned that the patient should undergo chemotherapy.

Case 3

- 58yrs female
- Case of carcinoma left buccal mucosa
- Operated for Wide Local Excision+Marginal mandibulectomy+ Robotic Neck Dissection
- Tumor Size-1.6*0.4cm
- Histological type-squamous cell carcinoma
- Grade-2
- Depth of invasion-4mm
- Margin status-all margins were clear
- LVI-absent
- PNI-present Lymph Node-0/42

Discussion

As PNI was the only relative poor prognostic factor, with all other post operative factors being favorable, radiotherapy can be avoided. The patient can be considered for observation after discussion with the patient about both the pros and cons of radiotherapy.

Case 4

- 60 F

- Family history of HCC
- CECT -Ca mid / low rectum T4b N1 uterus infiltrated
- Colonoscopy- scope could not be passed beyond the tumor
- Biopsy-Moderately differentiated adenocarcinoma

Discussion

The patient had no clinical features of obstruction. Due to the bulky tumor growth it was decided to consider the patient for long course chemoradiotherapy and then follow up with a scan for further plan.

Central Tumour Board: General Oncology

Dated - 7th February, 2023

COORDINATOR	**Dr Rashmi Rekha Bora** Consultant - Gynae Oncology, Fortis Memorial Research Institute, Gurugram
PANELISTS	GYNAE-ONCOLOGISTS **Dr Rama Joshi** Director and Head - Gynae Oncology, Fortis Memorial Research Institute, Gurugram **Dr Manash Biswas** Director - Gynaecologic Oncology, Fortis Memorial Research Institute, Gurugram
	MEDICAL ONCOLOGISTS **Dr Vinod Raina** Chairman - Oncosciences, Executive Director and Head - Medical Oncology, Haematology and Bone Marrow / Stem Cell Transplantation, Fortis Memorial Research Institute, Gurugram **Dr Amit Aggarwal** Principal Director and Head - Medical Oncology, Fortis Hospital, Shalimar Bagh, New Delhi **Dr Nitesh Rohatgi** Senior Director - Medical Oncology, Fortis Memorial Research Institute, Gurugram
	NUCLEAR MEDICINE SPECIALIST **Dr Ishita B. Sen** Senior Director and Head - Nuclear Medicine, Fortis Memorial Research Institute, Gurugram
	RADIATION ONCOLOGISTS **Dr A. K. Anand** Senior Director - Radiation Oncology, Fortis Memorial Research Institute, Gurugram **Dr Vineeta Goel** Consultant - Radiation Oncology Fortis Hospital, Shalimar Bagh, New Delhi **Dr Narendra Kumar Bhalla** Additional Director - Radiation Oncology, Fortis Memorial Research Institute, Gurugram
	ONCO PATHOLOGISTS **Dr Kunal Sharma** Associate Director and Section Head, Centre of Excellence and Histopathology, Mumbai Reference Lab, Lead – Dp and AI Initiatives, SRL Diagnostics **Dr Sunita Ahlawat** Principal Consultant - Histopathology. Fortis Memorial Research Institute, SRL Diagnostics

Endometrial Stromal Sarcoma After 30 Years of Hysterectomy: Dilemma in Management

Dr Rama Joshi
Director and Head - Gynecological Oncology,
Fortis Memorial Research Institute, Gurugram

Presenter
Dr Mala Sinha

A 64-year-old woman, para 2, presented in gynecologic oncology OPD with a palpable mass in abdomen and bloating for 3 months. Her past history was unremarkable, except that she had undergone abdominal hysterectomy for uterine myomas 30 years back. During evaluation, clinically a large abdominopelvic mass was felt above the vaginal vault, higher up in the pelvis with irregular borders and restricted mobility, her tumor markers (CEA- 0.8, CA19.9-3.8, HCG -12.4,AFP-3.31,Inhibin B- 23.73) were within normal limit except CA 125 which was increased to 217 U/ml. MRI showed large well defined solid cystic mass ~24x17x16cm size, extending to abdomen with necrosis, hemorrhage and diffusion restriction, right ovary small and pushed posteriorly, left ovary not visualized and minimal ascites . Same findings were confirmed on PET CT and there was no evidence of metastasis. Final clinical impression of suspicious abdominopelvic mass either stromal tumor/epithelial tumor ovary was made and after multidisciplinary tumor board decision patient underwent exploratory laparotomy, excision of abdominopelvic mass, frozen evaluation which was reported as round cell tumor, likely sarcoma, proceeded with bilateral salpingo oopherectomy , appendectomy and total omentectomy, with no gross residual disease at the end of surgery. Post operatively there was dilemma in diagnosis on histopathology as morphological features were suggestive of high grade endometrial stromal sarcoma (ESS), where as immunohistochemistry and molecular profile showed low grade ESS. After thorough evaluation and block reviewed at MSKCC, final diagnosis of Low grade ESS with early transition to high grade ESS was made. Patient had received 4 cycles of adjuvant chemotherapy (Gemcitabine+ Docetaxel) at 3 weekly interval and kept on hormonal maintenance with tablet Megace 160 mg once daily. She was doing fine in her follow up visits. After disease free interval of 7 months, there was pelvic recurrence on imaging. USG guided trucut biopsy attempted but not successful. She was continued on observation. On repeat scan after 3 months, size of the mass had increased and it was confirmed on clinical examination. She underwent laparoscopic evaluation-showed upper abdomen normal, proceeded with Excision of recurrent pelvic mass with attached sigmoid epiplocae, complete pelvic peritonectomy, excision of nodules with rectosigmoid mesenteric peritonectomy, bladder surface peritonectomy, excision of vaginal vault with POD peritoneum, revision of IP & round ligament, and excision of right parietal peritoneum, with no gross residual disease at the end of surgery. Final histopathology reported as recurrent endometrial stromal sarcoma with high grade transformation.

Point of interest: Endometrial stromal sarcoma (ESS) is a rare neoplasm that comprises approximately 0.2% of all uterine malignancies and approximately 10-15% of all uterine sarcomas. Extra uterine endometrial stromal sarcoma is very rare, occurs in ovary, pelvic cavity, retroperitoneum and mesentery. Ovary is the primary site in 76% of extrauterine ESS cases, and extraovarian sites account for the remaining 24%.

Question to the Board: What should be the next line of systemic therapy.

1. Next line adjuvant chemotherapy
2. Role of radiation therapy
3. Role of NGS and targeted therapy.

Board Opinion: Systemic therapy : Doxorubicin + Ifosfamide to consider NGS.

Central Tumour Board: Uro Oncology

Dated - 16th February, 2023

COORDINATOR	**Dr Karthik Rao** Consultant - Uro Oncology, Transplant and Robotic Surgery, Fortis Hospital, Bannerghatta Road, Bangalore
PANELISTS	**URO ONCOLOGISTS** **Dr Mohan Keshavamurthy** Senior Director - Uro Oncology, Uro Gynaecology, Transplant and Robotic Surgery, Fortis Hospital, Bannerghatta Road, Bangalore **Dr Basavaraj Neelagar** Senior Consultant - Uro Oncology, Transplant and Robotic Surgery, Fortis Hospital, Bannerghatta Road, Bangalore
	MEDICAL ONCOLOGISTS **Dr Niti Raizada** Senior Director - Medical and Hemato Oncology, Fortis Hospitals, Bangalore **Dr Nitesh Rohatgi** Senior Director - Medical Oncology, Fortis Memorial Research Centre, Gurugram
	RADIATION ONCOLOGISTS **Dr A. K. Anand** Director - Radiation Oncology, Fortis Memorial Research Centre, Gurugram **Dr Madhusudan** Consultant Radiation Oncology, Fortis Hospital, Bannerghatta Road, Bangalore
	ONCO PATHOLOGIST **Dr Kunal Sharma** Associate Director and Section Head, Centre of Excellence and Histopathology, Mumbai Reference Lab, Lead – Dp and AI Initiatives, SRL Diagnostics

Uro-Oncology Tumor Board Cases

Dr Mohan Keshavamurthy
Senior Director - Uro Oncology,
Uro Gynaecology, Transplant and Robotic Surgery,
Fortis Hospital, Bannerghatta Road, Bangalore

Presenter
Dr Karthik Rao
Consultant - Uro Oncology,
Transplant and Robotic Surgery,
Fortis Hospital, Bannerghatta Road, Bangalore

Case 1: A 65-year-old gentleman presented with obstructive LUTS for 6 months. Patient had dysuria at the end of micturition. There was no history of hematuria or other irritative LUTS. Patient also complained of mild left loin pain, dull aching in nature.

Patient was a known diabetic with no other co-morbidities.

Ultrasound revealed an upper and inter polar mass in the left kidney measuring 6.7 X 5.5 cms associated with internal vascularity. Mild pelvicalyceal system dilatation was noted. The right kidney was normal, the prostate measured 37 grams with significant post void residual urine of 137 ml.

FDG-PET CT done revealed a metabolically active lesion in the left kidney with a nodular thickening of the anterior wall of the bladder. Small metabolically active nodule in the lung suspicious for metastasis.

The patient was optimized and taken up for surgery. He underwent a cystoscopy that revealed a papillary growth in the anterior wall of the bladder with obstructive Grade 2 lateral lobes of the prostate. Left retrograde pyelography with left double J stenting was done. Patient underwent TURBT with TURP and the specimen was sent for frozen section. The TURBT specimen revealed a papillary neoplasm. Hence a decision was taken to perform a Robotic Radical Nephroureterectomy with bladder cuff on the left side. Patient was kept in the ICU for a day and discharged on the 4th postoperative day.

Histopathological Report

The radical nephrectomy specimen revealed clear cell RCC with sarcomatoid features. Nodes from the hilar region were negative. Final TNM stage pT2aN0M0.

The ureter and bladder cuff were free of tumor. The TURP specimen revealed benign adenomatous hyperplasia.

TURBT specimen: superficial mucosal growth revealed noninvasive papillary carcinoma pTa. The deeper muscle sent separately was free of tumor.

Discussion

It was decided that in view of the suspicious lung metastases further evaluation with a biopsy is mandatory. If the nodule shows metastasis from the kidney, then the plan is to start immunotherapy. The bladder tumor being superficial TCC close follow up with 3 monthly cystoscopy was planned.

Case 2: A 52-year-old male patient came with difficulty in passing urine with a thin stream. Patient had nocturia with mild dysuria throughout the stream of urine. There was no history of discharge per urethra or hematuria. Patient is a known diabetic and hypertensive.

There was past surgical history of TURP and VIU in June 2022buccal mucosal graft urethroplasty in November 2022. Unhealthy urethral tissue sent during the procedure for histopathological examination revealed high grade squamous cell carcinoma.

On Examination

- Genital Examination:Multiple palpable hard irregular nodules all along the urethra, corpora and glans. No visible lesion is seen apart from glans induration.
- Theer was an enlarged right groin lymph node in the horizontal group.

FDG PET-CT

Multiple FDG avid foci was seen along the length of bulbar and penile urethra. Sub centimetre size nodules were present in the bilateral groin region.

Patient underwent Radical Penectomy+ Bilateral inguinal lymphnode dissection + Robot assisted laparoscopic cystoprostatectomy + Ileal conduit diversion.

Further Plan

The discussion included a plan to provide radiation to the pelvis and groin in view of the high grade urethral carcinoma once the wound healed.

Case 3: A 65-year-old gentleman presented with history of right partial nephrectomy followed by completion nephrectomy for recurrence in 2018. Diagnosed with papillary urothelial carcinoma of the left ureter in 2021. The patient had undergone excision of the distal ureter

with ureteric reimplantation. He had also received adjuvant chemotherapy with Gemcitabine and Cisplatin.

Patient presented with a serum creatinine of 4 mg/dl for which he underwent cystoscopy with double J stenting in March 2022 following which his renal parameters became normal.

FDG PET-CT

Appearance of a heterogeneously enhancing FDG avid asymmetrical circumferential mural thickening in the left ureter at the level of L4-V5 vertebrae, extending for a length of 29 mm with maximum thickness of 15 mm with Max SUV 9.9; significant narrowing of the ureter is noted at this level with resultant moderate left hydroureteronephrosis; fat planes with left common iliac artery and left psoas muscle is preserved.

FDG avid hypodense lesion is noted in segment IV, measuring 22 x 20 mm with max SUV 3.8; the lesion is compressing the left hepatic duct with significant IHBR dilatation in the left lobe; the left branch of the portal vein is encased and narrowed; interval appearance of ill-defined FDG avid hypodense lesion is also seen in segment III, measuring 15 x 18 mm with max SUV 3.2

The patient was started on pemrolizumab.

With increasing renal parameters in January 2023 an ultrasound revealed a hypoechoic lesion measuring 3.7x1.5 cm in the mid ureter causing moderate hydroureteronephrosis.

The patient underwent cystoscopy with diagnostic left RGP and ureteroscopy that revealed a recurrent growth in the ureter. Left DJstenting was done.

After optimization, the patient underwent robotic left segmental ureterectomy with psoas hitch on 28/1/2023.

Histopathological Report

Invasive high grade papillary urothelial carcinoma involving the muscular propria. Margins were free of tumor. Lymph-vascular invasion not identified.

Further Plan

To continue the chemotherapy with Gemcitabine based regimen and add immunotherapy if required.

A Rare Case of Kabuki Syndrome

Dr Shraddha Lohia[1], Dr Salil Jain[1], Dr Pankaj Gupta[2]

1 Fortis Medical Research Institute, Gurugram 2 Libra Social Research Foundation

Fortis MEMORIAL RESEARCH INSTITUTE GURUGRAM

Introduction :

Kabuki syndrome(KS) is a rare syndrome, first identified in 1981 in 10 Japanese patients and the name was given due to the facial features that resembled the make-up used by actors in Kabuki.[1] It is characterized by distinct facial dysmorphism, growth retardation, psychomotor developmental delay and a wide spectrum of other manifestations affecting various body systems like autoimmune diseases, congenital heart defects, urinary tract infections(UTI) and horseshoe kidneys, autoimmune diseases and congenital heart defects patients.[2] Prevalence is 1 in 32,000.[3]

International consensus diagnostic criteria 2019.[4]

A definite diagnosis of KS can be made in patients of any age with a history of infantile hypotonia, developmental delay and at least one of the major criteria:

1. Pathogenic or a likely pathogenic variant in KMT2D or KDM6A.
2. Typical dysmorphic features including long palpebral features, eversion of the lower eyelid and two more of:

A) Arched and broad eyebrows, with notching or sparseness

B) Short columella and depressed nasal tip

C) Large, prominent or cupped ears

D) Persistent fingertip pads

A list of supportive clinical features was agreed upon, including short stature, microcephaly, cleft palate, lip pits, hearing loss, congenital heart defects, feeding difficulties and immunological disorders.

A probable diagnosis can be made in a patient with a history of infantile hypotonia, developmental delay and at least three of the supportive clinical features, and a possible diagnosis can be made in a patient with two of the supportive clinical features..

Case Description :

A 13 year old boy, admitted for E-coli pyelonephritis and pneumonia. As per history, he was conceived by IVF, delivered preterm with Atrial Septal Defect (ASD operated at 7 years of age) and pelvic kidneys. He had developmental delay and hypotonia. Initially he did have feeding difficulties and by 10 years had progressively gained weight to become obese. Immune thrombocytopenia (ITP) was diagnosed in 2013 and treated with prednisolone. He had COVID in April 2021 when he was diagnosed with diabetes, hypertension and LVEF of 35%. This was managed with metformin, amlodipine and enalapril.

On examination he had missing upper lateral incisors and has deep palate, dynamic flat feet, lax ligaments typical for KS. Present admission urine analysis additionally showed proteinuria and USG KUB revealed loss of CMD of pelvic kidney. He underwent genetic counselling during present admission and suspected to be Kabuki syndrome, but refused genetic analysis due to personal reasons.

Large, prominent ears
short columella, depressed nasal tip.
Wide, arched eyebrows
Long palpebral fissure, lower eyelid eversion.

Discussion :

To date just over 500 cases of genetically confirmed KS have been reported in literature. The 2019 international consensus criteria for definitive diagnosis of KS, require a history of infantile hypotonia, developmental delay and/or ID with pathogenic/likely pathogenic variant in KMT2D or KDM6A and/or typical dysmorphic features [4]. However, the diagnosis is often difficult to establish in neonates, where the typical features of KS may not yet be recognizable, thus need reviewed from time to time.[5]

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Contact Information :

Dr Shraddha Lohia

Paediatric Nephrologist

Department of Renal Sciences, Nephrology & Kidney Transplant Fortis Memorial Research Institute, Gurugram

drshrads10@gmail.com +91-8600888800

COVID-19

Experience with Telemedicine in Paediatric Nephrology During the COVID Pandemic

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Dr Sanjeev Gulati
Principal Director - Nephrology and Kidney Transplant, Fortis Escorts, Okhla and Vasant Kunj, New Delhi

Co-Author
Dr Amrita Sengar

To the Editor,

We read with great interest the article by Tse et al. about the problems faced by children and young adults with kidney disease during the lockdown [1]. In such a scenario, telemedicine is a useful tool in mitigating the issues as well as providing a modality for continued care. Telemedicine is the use of electronic methods to deliver health care and/or health education from a distance[2]. It has been used to deliver health care services in countries like the USA and Australia which have sparse populations spread over large geographically isolated areas [3]. The unprecedented lockdown created further logistical barriers for children with kidney diseases, as there are very few trained paediatric nephrologists in the country and the majority are based in cities. This single-centre prospective pilot study, the first of its kind during the pandemic, was conducted to evaluate the feasibility and applicability of telemedicine services in the management of children with kidney diseases. The objective was to provide consultation for younger as well as older children with kidney diseases because of restricted access in view of the lockdown imposed all over the country in the wake of the COVID pandemic. Another objective was to prioritize and select children who needed inpatient care. The study was conducted during the national lockdown in India between 23 March and 30 June 2020. The patients were informed about the availability of teleconsultation services through SMS (short message service) messages using our patient database. To ensure wider reach, we also used Facebook and WhatsApp to send these messages. The medical data received was entered in the Healthplix electronic medical records (EMR) system. On receiving the request for a telenephrology consult from the child's parents/care- givers, an SMS was sent requesting information about data including age, weight, height and vital signs including blood pressure (where required) as well as current and previous investigations. The information was entered into the EMR and a prescription was emailed or sent via WhatsApp as per family preference. At the end of the e-consult, the parents/caregivers were asked to rate the teleconsultation experience on a scale of 0 (not satisfied) to 10 (fully satisfied). The study was approved by the institutional ethics committee.

During the study period, a total of 178 e-consults were done. Of these, 174 consults were for domestic patients and 4 were for international patients. The study group comprised 90 patients—59 boys and 31 girls. All of the patients were provided teleconsultation using a combination of a WhatsApp text and a phone call. The distribution of the diagnoses was as follows: idiopathic nephrotic syndrome (53), chronic kidney disease (17), kidney transplant (7), UTI (5), acute glomerulonephritis (4), acute kidney injury (2) and other (2). The mean age of the children in this study was 9 years (range 0.17–18 years). Of the 178 e-consults that were advised, all opted for teleconsultation. Of the 90 children in the study, 10 were new patients who were evaluated for the first time via teleconsultation. The other 80 children were follow-up patients in our OPD clinics. Of the 90 children who were given e-consults, 87 were advised follow-up e-consults and three were advised admission. We found this to be an effective modality in triaging children with kidney diseases for follow-up or admission. Based on teleconsultation, 3/90 (3.4%) of the children were successfully triaged into admission. This avoided the need for OPD visits in the other 96.6% who were managed by teleconsultations, sparing them the logistical nightmare of travel to the hospital for specialized paediatric nephrology review. The patient/family satisfaction score for e-consults was 9.7. Telemedicine has been found to improve clinical outcomes due to better compliance as well as easy and better follow-up. This results in enhanced satisfaction due to a stronger doctor–patient relationship and improved clinical outcomes. Telemedicine can be used by paediatric nephrologists for new patients, follow-up patients, second opinions and cross referrals.

Based on our experience, we conclude that telenephrology offered an effective method for providing paediatric nephrology services during the period of pandemic lockdown, when access to paediatric nephrology care was limited. It is also an effective modality in providing individualized tailored advice to this vulnerable segment of the population.

A Single-Center Prospective Observational Study Evaluating Telemedicine for Kidney Transplant Patients in the Coronavirus Disease-19 Pandemic: Breaking the Access Barrier

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Source: DOI: 10.4103/ijot.ijot_96_21

Dr Sanjeev Gulati
Principal Director - Nephrology and Kidney Transplant, Fortis Escorts, Okhla and Vasant Kunj, New Delhi

Co-Author
Durre Shehwar[3]
Amrita Sengar[4]
[3]Department of Pathology, Jawaharlal Nehru Medical College, Aligarh
[4]Research Cell, Fortis Flt. Lt. Rajan Dhall Hospital, Vasant Kunj, New Delhi

Introduction

The coronavirus pandemic has restricted access to health-care services for kidney transplant patients because of concerns of COVID-19 infection. This single-center prospective study was done to assess the feasibility, acceptability, and effectiveness of telemedicine services for regular follow-up of kidney transplant patients as well as for triaging patients for admission.

Method

The study was undertaken during the lockdown period in India from March 23, 2020, to June 30, 2020. A formatted message seeking all relevant information was sent before teleconsultation. WhatsApp/Email using smartphones and Electronic Medical Records system were used to provide telemedicine services. At the end of the e-consult, the patient was asked to rate his experience on a scale of 0–10. Results: A total of 296 consults for 122 patients were given. Of these, 239 (80.7%) consults (96 patients) were for domestic patients and 57 (19.3%) consults (26 patients) were for international patients. The mean age of the patients was 43 ± 15 years. The mean patient satisfaction score for e-consults was 9.5 ± 0.7. Four (3.3%) patients were seen for the first time after transplant via teleconsultation. Nine (7.4%) patients were advised admission and the rest were advised follow-up teleconsultation. Among those admitted, 6 (4.9%) were COVID positive and 1 (0.8%) patient died of COVID-19 pneumonia.

Conclusion

Telemedicine offers a viable modality for health-care delivery when access to health care is restricted for transplant patients. Our model of telemedicine can be replicated easily without the burden of high cost for infrastructure.

Keywords: Coronavirus disease-19 pandemic, kidney transplant, telemedicine

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Post-COVID Multisystem Inflammatory Syndrome-Adult (MIS-A) Presenting with Rhabdomyolysis and AKI

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Dr Ajit Singh Narula
Principal Director - Nephrology and Kidney Transplant, Fortis Escorts, Okhla Road, New Delhi

Dr Sanjeev Gulati
Principal Director - Nephrology and Kidney Transplant, Fortis Escorts, Okhla and Vasant Kunj, New Delhi

Co-Authors
Durre Shehwar[3]
Ishrat Majid Mir
[3]Department of Pathology,
Jawaharlal Nehru Medical College, Aligarh

Introduction

The severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) responsible for the ongoing coronavirus disease 2019 (COVID-19) pandemic has been the focus of research for more than a year. Novel and complex manifestations of the disease are being documented. COVID-19-associated multisystem inflammatory syndrome in children (MIS-C) is a well-established entity.[1] Recently, a similar syndrome in adults has also been recognized, namely, multisystem inflammatory syndrome in adults (MIS-A).[2] Acute kidney injury (AKI) and rhabdomyolysis.

Case Report

A 61-year-old male presented to the emergency department with complaints of decreased urine output, nausea, and vomiting for one day. Twelve days prior, he had low-grade fever for 3 days, which subsided with paracetamol. A week after the fever subsided, he noticed a decreased sensation in both feet, weakness of both lower limbs, and clumsiness of both hands. He also complained of severe pain and swelling in both thighs. There was no history of cough, expectoration, or shortness of breath. He did not receive any medical attention during the episode of fever. There was history of hypertension.

Known complications of COVID-19 hypothyroidism, coronary artery disease, infection, with rhabdomyolysis occur in 7% to 20% of patients with evidence of COVID-19 AKI.[3,4] Rhabdomyolysis and AKI may present as a late complication of COVID-19 suggesting that the virus may have the potential to cause post viral myopathy.[5] AKI has been reported in 2% to 8% of MIS-C,[6] whereas its occurrence is not well-established in MIS-A.

We report a case with post-COVID MIS-A presenting with rhabdomyolysis and AKI and a percutaneous transluminal coronary angioplasty (PTCA) 5 months back. He was taking tablet amlodipine 5 mg once daily, levothyroxine 25 ug once daily, ticagrelor 90 mg twice daily, aspirin 75 mg once daily, and rosuvastatin 40 mg once a day. He was not yet vaccinated against COVID-19.

On examination, he was afebrile, his blood pressure was 112/72 mmHg, pulse rate was 92 per minute, and SpO2 was 95% on room air. There was tenderness of both thighs and calves. On auscultation, the lungs were clear. Examination of the heart and abdomen was normal. Neurological examination showed higher mental functions and cranial nerves to be normal. Power in the proximal and distal muscles of all four limbs was 3/5. Deep tendon jerks at the ankle and knees were sluggish, and plantar response was flexor. There was no sensory deficit.

Laboratory investigations revealed the following: Hemoglobin of 8 g/dL, white blood cell (WBC) count of 15,300/mm3, with 10% lymphocytes, platelet count 2.14L/cumm, blood urea nitrogen 67.23 mg/dL, serum creatinine 8.02 mg/dL, sodium 127 mmol/L, potassium 5.43 mmol/L, aspartate aminotransferase 862 U/L, alanine aminotransferase 490 U/L, troponin T 389 pg/mL, NT-proBNP (N-terminal pro-brain natriuretic peptide) 10,800 pg/mL, and procalcitonin 0.968 ng/mL. Blood cultures were negative, and urine cultures grew Escherichia coli, C-reactive protein was 55.8 mg/L, serum ferritin 1,100 ng/mL, lactate dehydrogenase 7,250 U/L, creatine kinase (CK) 55,920 U/L, CK-MB 34 U/L, and thyroid stimulating hormone 30.53 mIU/L. Arterial blood gas was suggestive of compensated metabolic acidosis. Urinalysis was notable for 2+ blood and 3+ protein. Catheterized urine sediment showed 6 to 8 red blood cells, 8 to 10 WBCs, and granular casts. Urine myoglobin was 1,100 ng/mL, chest X-ray revealed few ill-defined peripheral opacities bilaterally, and high-resolution computed tomography thorax was suggestive of bilateral subpleural opacities and bilateral mild pleural effusion. SARS-CoV-2 RT-PCR (reverse transcription polymerase chain reaction) on the initial nasopharyngeal swab was negative. SARS-CoV-2 immunoglobulin G (IgG) antibody was positive with a

titer of 10.0 (reference >1.1 positive). Autoimmune profiles, including ANA and ANCA serology, were negative, and complement levels were normal. Ultrasound of the kidneys, showed the right kidney was 11.3 cm × 4.2 cm, and the left kidney was10.8 cm × 4.3 cm. Echocardiography showed regional wall motion abnormalities in the apical and mid-anterior segments, with an ejection fraction of 45%.

A nerve conduction velocity (NCV) test of both median, both (right and left) ulnar, both tibial, and both peroneal nerves was done. NCV test showed delayed F-waves and markedly reduced H-amplitude in all tested nerves. Bilateral median and ulnar nerves had normal SNAP (sensory nerve action potential) amplitude with increased distal latency (DL) and decreased SNCV (sensory nerve conduction velocity). Sural nerve bilaterally showed normal SNAP amplitude with normal DL and normal SNCV. NCV was suggestive of acute inflammatory demyelinating polyneuropathy (AIDP).

On Day 4 of admission, he developed a lower gastrointestinal (GI) bleed. Upper GI endoscopy and colonoscopy were normal. A selective superior mesenteric arterial angiography showed bleeding from the two ileal branches. The coagulation profile showed a platelet count of 78,000/ L, a prothrombin time of 43s, INR (international normalized ratio) 4.14, aPTT (activated partial thromboplastin time) 49s, and D-dimer 5.57 ng/mL.

He was diagnosed to have post-COVID MIS-A: rhabdomyolysis with AKI, AIDP, myocarditis, and disseminated intravascular coagulation. He was managed with antibiotics, intermittent hemodialysis, blood and fresh frozen plasma, and intravenous immunoglobulin (2 g/kg over 5 days). For the ileal bleed, he underwent a super-selective arterial embolization of the bleeding vessels [Image 1]. Over the next three weeks, his renal functions improved, the power improved in all four limbs, the muscle tenderness subsided, creatine phosphokinase normalized, and the bleeding parameters were normal.

Discussion

The SARS-CoV-2 responsible for the ongoing pandemic of COVID-19 has been the focus of research for more than a year. Novel and complex manifestations of the disease are being documented. COVID-19-associated MIS-C is a well-established entity.[1] Recently, a similar syndrome in adults has also been recognized, that is, MIS-A. MIS-A symptoms have been reported about 2 to 5 weeks after the initial COVID-19 symptoms when the nucleic acid may be negative but the antibody test remains positive. The interval between infection and development of MIS-A is unclear, adding to uncertainty regarding whether MIS-A represents a manifestation of acute infection or an entirely post-COVID phenomenon. The Center for Disease Control and Prevention (CDC) proposed a case definition for MIS-A, which included individuals aged ≥21 years, positive SARS-CoV-2 testing (PCR, antigen, or antibody)

The absence of severe respiratory illness excludes the possibility of organ dysfunction as a result of tissue hypoxia. Although there is heterogeneity in the case reports with regard to organ systems involved, the common clinical features included fever (75%), chest pain or palpitations (38%) with cardiac abnormalities (100%), gastrointestinal symptoms (81%), and dermatologic manifestations (31%).[2] AKI where reported is usually due to profound GI symptoms leading to hypovolemia.[7]

The pathophysiology of MIS in both children and adults is currently unknown. An exaggerated immune response with persistent fevers, elevated inflammatory markers, and elevated proinflammatory cytokines has

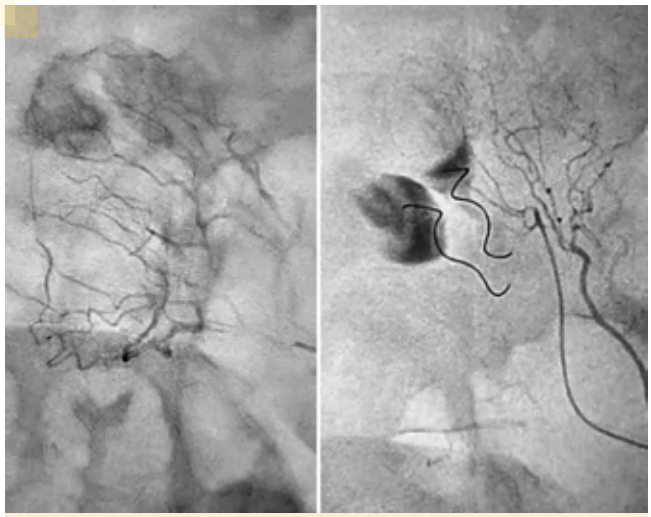

Figure 1: (a)Before arterial embolization of ileal bleed. (b) After arterial embolization of ileal bleed indicating recent infection, multiorgan dysfunction without severe respiratory illness, and markedly elevated acute inflammatory markers

been described in COVID-19.[8] The resulting immune dysregulation can lead to multiple immune-mediated sequelae. Although clear evidence of immune pathophysiology has not been established, an antibody-related immune response may be responsible for MIS-A. It is thought of as a postinfectious syndrome rather than an infection in the acute stage of development. [2,9] There is no standard treatment protocol available for MIS-A, but there are reports of beneficial outcomes with steroids, intravenous immunoglobulin (IVIG), and the interleukin (IL)-6 inhibitor tocilizumab.[2,10]

The unusual feature in our case was the late onset

of rhabdomyolysis as a cause of AKI. The etiology of rhabdomyolysis was not clear. Statin-induced rhabdomyolysis is rare in the absence of concomitant drugs such as fibrates or fusidic acid, and the onset of symptoms ranges from 1 to 60 days (mean 9 days).[11] Ticagrelor has also been reported to precipitate statin-induced rhabdomyolysis.[12] Hypothyroid state in patients on statin therapy can also increase the risk of rhabdomyolysis.[13] We considered statin-induced rhabdomyolysis to be precipitated by either uncontrolled hypothyroidism or ticagrelor. In addition to increasing the dose of levothyroxine, we stopped both rosuvastatin and ticagrelor therapies. However, several case reports have also described rhabdomyolysis as an initial manifestation of COVID-19, and few reports have suggested rhabdomyolysis to be a post-COVID phenomenon.[5,14] Our patient was a known hypothyroid on treatment and was asymptomatic for 5 months while on statin and ticagrelor therapy. Considering the other clinical features of multisystem involvement, there is a possibility that the rhabdomyolysis in our patient might be a sequela of COVID-19.

Our patient's presentation was with multiple-organ involvement with minimal respiratory findings. Although there was a history of fever, RT-PCR was negative and COVID antibodies were positive, indicating a postinfectious syndrome. Our patient responded well to IVIG and supportive care and had a good recovery of neurological and renal functions.

Conclusion

MIS-A can present as a serious post-COVID phenomenon, and early diagnosis and initiation of treatment can lead to a positive outcome. The etiology of rhabdomyolysis in this patient cannot be determined, but COVID-19 sequela is a possibility that needs further research. IVIG remains an effective treatment option.

Declaration of Patient Consent

The authors certify that they have obtained all appropriate patient consent form. In the form, the patient has given his consent for his images and other clinical information to be reported in the journal. The patient understands that his name and initials will not be published, and due efforts will be made to conceal his identity.

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CLINICAL TRIALS

Desidustat in Anemia due to Dialysis Dependent Chronic Kidney Disease: A Phase 3 Study (DREAM-D)

Dr Tejendra Singh Chauhan
Senior Consultant - Nephrology,
Fortis Escorts Hospital, Faridabad

Background

A Phase 3, Multicenter, Open-label, Randomized, Active-controlled Study to assess the efficacy and safety of the desidustat, an oral hypoxia-inducible factor prolyl hydroxylase inhibitor, against the epoetin alfa for the treatment of anemia in patients with chronic kidney disease (CKD) with dialysis dependency.

Total number of sites in India – 38 and total sample size from India – 392.

Dr Tejendra Singh Chauhan, Senior Consultant Nephrologist, Fortis Escorts Hospital, Faridabad, successfully enrolled 3 patients for the study

Investigator	Screened	Enrolled
Dr Tejendra Singh Chauhan	08	03

Methods

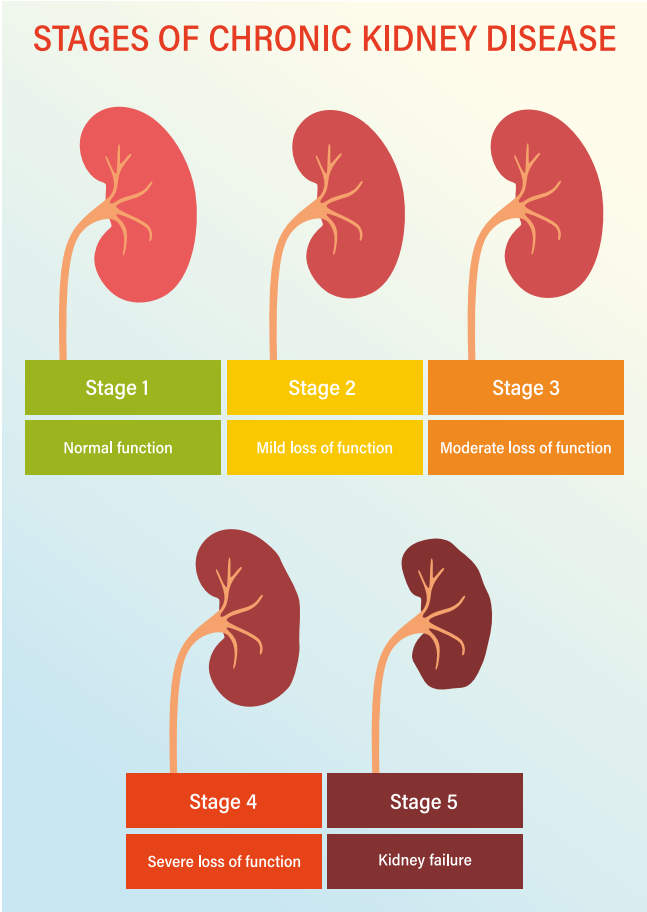
A total of 392 patients with clinical diagnosis of anaemia due to CKD with dialysis need (Erythrocyte Stimulating Agent [ESA] naïve or prior ESA users) and with baseline haemoglobin levels of 8.0–11.0 g/dL (inclusive) were randomized in a 1:1 ratio to receive either desidustat oral tablets (thrice a week) or epoetin alfa subcutaneous injection for 24 weeks to maintain a haemoglobin level of 10–12 g/dL. The primary endpoint was to assess the change in the haemoglobin level between the desidustat and the epoetin alfa groups from the baseline to evaluation period week 16–24. The key secondary efficacy endpoint was the number of patients with haemoglobin response.

Results

The least square mean (standard error) change in haemoglobin from the baseline to week 16–24 was 0.95 (0.09) g/dL in the desidustat group and 0.80 (0.09) g/dL in the epoetin alfa group (difference: 0.14 [0.14] g/dL; 95% confidence interval: −0.1304, 0.4202), which met the prespecified noninferiority margin. The number of haemoglobin responders was significantly higher in the desidustat group (106 [59.22%]) when compared to the epoetin alfa group (89 [48.37%]) ($p = 0.0382$). The safety profile of the desidustat oral tablet was comparable with the epoetin alfa injection. There were no new risks or no increased risks seen with the use of desidustat compared to epoetin alfa.

The safety profile of the desidustat oral tablet was comparable with the epoetin alfa injection. There were no new risks or no increased risks seen with the use of desidustat compared to epoetin alfa. The incidence of Serious adverse event (SAEs) was 16 (8.16%) in the desidustat group and 21 (10.71%) in the epoetin alfa group; however, none of the SAEs was considered to be related to the study treatments.

In this study, desidustat was found to be noninferior to epoetin in the treatment of anemia in CKD patients on dialysis and it was well-tolerated.



MEDICATION SAFETY UPDATE

MEDICATION SAFETY UPDATE

CHRONIC KIDNEY DISEASES and Medication Safety Principles

Kidney Disease: Improving Global Outcomes (KDIGO) guidelines for evaluating medication appropriateness for commonly used medications in CKD:

Table 1. - Cautionary notes for prescribing in people with CKD

Medication	Comments
Narrow therapeutic index drugs	
Aminoglycosides	Nephrotoxic (acute tubular necrosis, AKI). Ototoxic. Therapeutic drug monitoring is recommended.
Digoxin	Increased digoxin toxicity including arrhythmias. Therapeutic drug monitoring is recommended.
Lithium	Diabetes insipidus, interstitial disease. Avoid concomitant use of thiazide diuretics and NSAIDs, maintain hydration. Therapeutic drug monitoring is recommended.
Phenytoin	Low albumin will affect bound concentration. Monitor free phenytoin level.
Tacrolimus	Vasoconstriction, nephrotoxicity. Avoid concomitant use of CYP 3A4 inhibitors. Therapeutic drug monitoring is recommended.
Warfarin	Increased risk of bleeding. Close INR monitoring is recommended.
Analgesics	
NSAIDs	Hemodynamically mediated kidney injury, sodium and/or potassium retention, interstitial nephropathy. Avoid with concomitant use of diuretics or RAAS inhibitors, maintain hydration, and consider alternate analgesic.
Meperidine	Active metabolite, normeperidine, increases risk of seizure. Avoid.
Morphine	Active metabolites, increased drug effect.
Contrast agents	
Iodinated contrast media	Nephrotoxic. Use lowest dose, maintain hydration with saline, can consider N-acetylcysteine or sodium bicarbonate, avoid concomitant nephrotoxins, avoid use of high-osmolarity agents, avoid use of gadolinium-containing contrast media.
Bowel preparation	
Phosphate-containing bowel preparation	Increased risk for phosphate nephropathy and electrolyte disturbances. Avoid phosphate-based preparations.
Herbals	
Licorice	Increased risk of sodium and water retention, hypokalaemia,
Noni juice	hypertension. Avoid use.Increased risk of hyperkalaemia. Avoid use.
St. John's wort	CYP inducer. Increased risk of drug interactions. Avoid use.
Ginkgo biloba	Increased risk of bleeding. Avoid use.
Ephedra alkaloids (ma huang)	May potentiate hypertension. Avoid use.

Excerpted from - the 2022 Kidney Disease Improving Global Outcomes Guidelines on the management of CKD (77). NSAIDs, nonsteroidal anti-inflammatory drugs; CYP 3A4, cytochrome p450 3A4; INR, International Normalized Ratio; RAAS, renin-angiotensin-aldosterone system; CYP, cytochrome p450.

Table 2. - Approach to medication assessment and deprescribing in CKD

Step	Comments
1. Assess kidney function	Determine GFR to evaluate kidney function for drug dosing
	Direct measurement of GFR may be necessary for dosing narrow therapeutic or toxic range drugs
2. Medication history	Collect complete medication list:
	Include all prescription, over-the-counter and dietary supplements (including herbal, nonherbal, and vitamin supplements)
	Collect history of drug allergies/sensitivities; adjustment or discontinuation of medication due to impaired kidney function or toxicity
3. Medication review	Is the drug nephrotoxic or contraindicated in CKD or at a specific GFR level?
	Is the drug or drug metabolite's half-life prolonged in CKD?
	Is the risk of adverse effects or drug–drug interactions increased in CKD?
	Does this drug have a narrow therapeutic or toxic range?
4. Adjust regimen	Prescribing:
	Calculate/adjust dose on the basis of Food and Drug Administration-approved product labeling, drug pharmacokinetic characteristics, and the patient's GFR
	Refer to peer-reviewed literature recommendations if limited information in product labeling
	Patients should consult with pharmacist or health professional before initiating over-the-counter medications or dietary supplements
	Deprescribing:
	Discuss rationale and plan with patient and care team
	Deprescribe one medication at a time, consider agents with greatest harm and least benefit, consider patient preferences
5. Drug therapy monitoring	Document and monitor for signs efficacy, toxicity, and change in symptoms with initiation or discontinuation of agent Revise regimen on the basis of acute (e.g., intercurrent illness) or chronic changes/decline in patient's health status and/or kidney function

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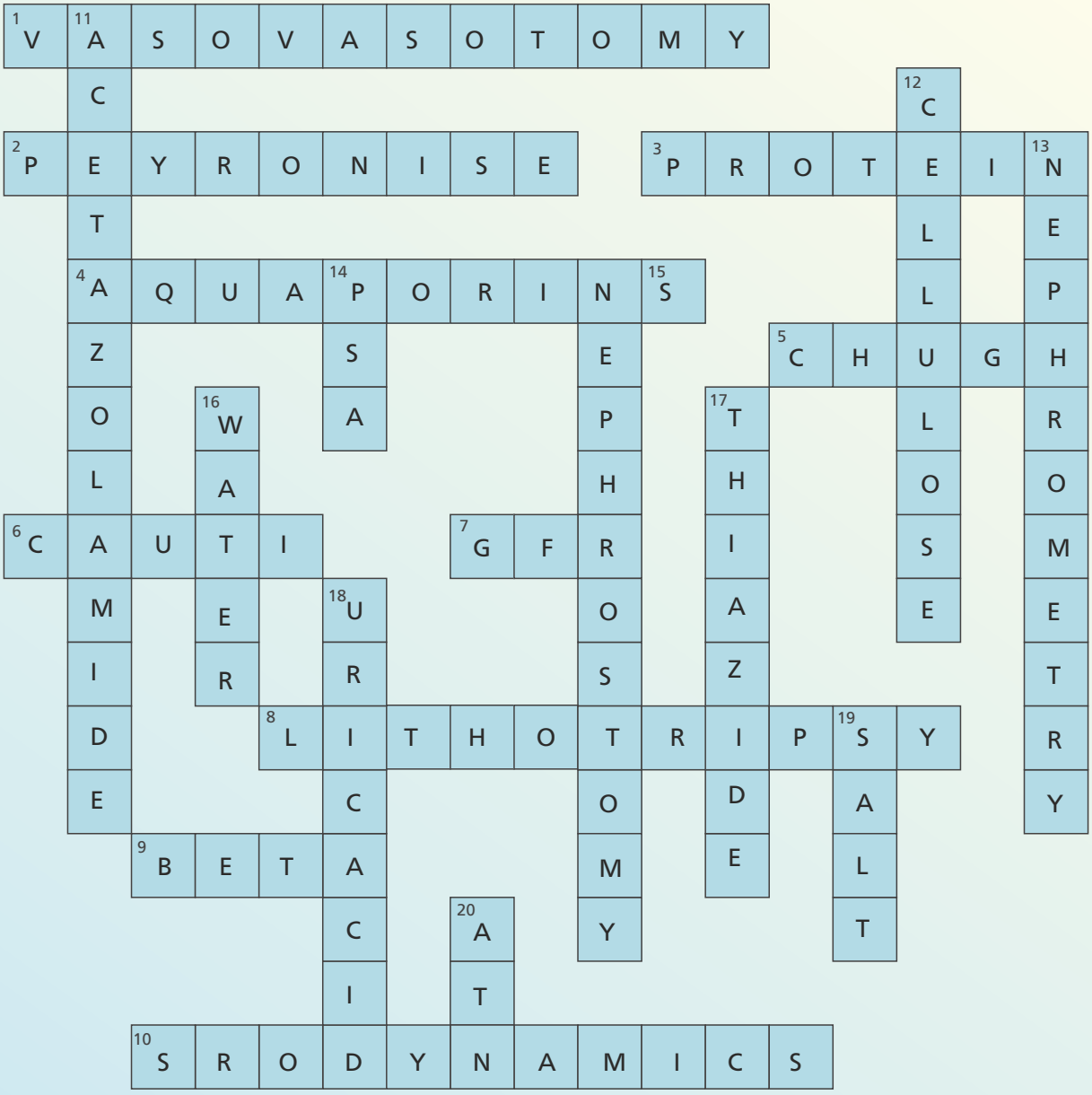
Answer To The Crossword



Across

1. Vasovasostomy
2. Peyronie's
3. Protein
4. Aquaporins
5. Chugh
6. CAUTI
7. GFR
8. Lithotripsy
9. Beta
10. Urodynamics

Down

1. Acetazolamide
2. Cellulose
3. Nephrometry
4. PSA
5. Nephrostomy
6. Water
7. Thiazide
8. Uric Acid
9. Salt
10. ATN

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clinical.connect@fortishealthcare.com