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Dear Doctor,

Greetings from Micro Labs limited. We are happy to bring you "NU Rounds" which contains latest and interesting news in the field of Nephrology and Urology.

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Looking forward to your valuable feedback

Best Regards,

Medical Team, Micro Labs Ltd

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1. ASSOCIATION BETWEEN ULTRASOUND QUADRICEPS MUSCLE THICKNESS AND FRAILTY IN HAEMODIALYSIS PATIENTS

Introduction:

Frailty is typically characterised as a state of diminished physiological reserve and higher susceptibility to failure to restore homeostasis following a stressor. Frailty is closely linked to a variety of poor health outcomes, such as mortality, hospital admission, and disability.[1] Although quadriceps muscle mass quantification by ultrasound is becoming more popular for sarcopenia assessment, its association to frailty in haemodialysis patients is unknown.[2] This study investigates the link between sarcopenia, bilateral anterior thigh thickness (BATT) obtained from ultrasonography, and frailty as measured by widely used frailty measures (Frailty Phenotype [FP], Frailty Index [FI], Edmonton Frailty [EFS], and Clinical Frailty Scale [CFS]).

Ultrasound measures of quadriceps thickness are associated with frailty in haemodialysis patients.

Methods:

This study examined a cohort of adult prevalent (3 months) haemodialysis patients who were significantly phenotyped as frail. According to a predetermined protocol, participants were positioned at an angle of 45° with their legs stretched and their knees resting at 10° to 20°. For BATT, Low Muscle Mass (LMM), and sarcopenia, correlations with frailty were investigated using both linear and logistic regressions with stepwise a priori covariable adjustment.

Results:

Ultrasound examinations were performed on 223 study subjects in total. For FP, the level of frailty ranged from 34% to 58%. All frailty tools found that BATT was related to increased frailty in simple linear regression, but the association was removed when covariables were included. When frailty tools were divided into Frail/Not Frail categories, BATT was linked to frailty by every tool on univariable analysis, but only the association for EFS remained after full adjustment (OR 0.97, 95% C.I. 0.94-1.00, P = 0.05).

Discussion:

It has been demonstrated that ultrasonography can accurately measure muscle size in frail older adults, as well as in haemodialysis patients. However, it is unknown how frailty in haemodialysis relates to ultrasonography.[3,4] Here, researchers demonstrate that BATT is associated with decreased grip strength and walking speed in a significant prevalent haemodialysis population. In haemodialysis patients, frailty is linked to ultrasound-derived BATT, muscle groups, and sarcopenia with BATT criteria, although the

consistency of these correlations in multivariable analysis depends on the frailty measure used. The CFS showed minimal connections, while the most persistent correlations were identified with the FP, a frailty score that is predominantly physically focused.[2]

Frailty Tool	Frailty Status	Low Muscle Mass?		Sarcopenia?		Row Total (n
		No	Yes	No	Yes	
FP	Not Frail	83	64	119	28	147
		56.5%	43.5%	81.0%	19.1%	
	Frail	21	55	33	43	76
		27.6%	72.4%	43.4%	56.6%	
FI	Not Frail	48	46	77	17	94
		51.1%	48.9%	81.9%	18.1%	
	Frail	56	73	75	54	129
		43.4%	56.6%	58.1%	41.9%	
EFS	Not Frail	61	51	90	22	112
		54.5%	45.5%	80.4%	19.6%	
	Frail	43	68	62	49	111
		38.7%	61.3%	55.9%	44.1%	
CFS	Not Frail	60	54	91	23	114
		52.6%	47.4%	79.8%	20.2%	
	Frail	44	65	61	48	109
		40.4%	59.6%	56.0%	44.0%	

Concordance between frailty status with low muscle mass and sarcopenia

Conclusion:

In haemodialysis patients, a thigh ultrasound-derived sarcopenia is associated with frailty, while the relationship between muscle size and frailty is significantly less consistent. According to the findings of this study, quadriceps ultrasound is not currently useful in the clinical setting for risk assessment of haemodialysis patients and needs further research.

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2. A DESCRIPTIVE STUDY OF URODYNAMIC FINDINGS IN NEUROGENIC LOWER URINARY TRACT DYSFUNCTION IN THE FIRST YEAR FOLLOWING SPINAL CORD INJURY

Introduction:

Neurogenic lower urinary tract dysfunction (NLUTD) is a common and disabling disorder. Lack of bladder control caused by abnormal neural pathways is the characteristic of the challenging illness known as neurogenic lower urinary tract dysfunction (NLUTD). it is classified b ased on where the lesions are located within the neurological system. [1] The majority of spinal cord injury (SCI) patients gradually develop neurogenic lower urinary tract dysfunction, which not only lowers quality of life in terms of health. Due to the possibility of neurological alterations, the first year following SCI is of particular interest. This suggests that lower urinary tract function is not stable throughout this time.[2] This study focused on unfavourable urodynamic parameters that are linked to urological morbidity with the purpose of providing a real-world description of neurogenic lower urinary tract dysfunction within the first year following spinal cord injury.

Within the first year following acute spinal cord injury, almost all the patients had at least one negative urodynamic parameter.

Methods:

At one university-based spinal cord injury centre, urodynamic examinations from 97 patients with acute traumatic or ischemic spinal cord injuries who were treated in accordance with the European Association of Urology Guidelines on Neuro-Urology at 1 month, 3 months, 6 months, and 12 months after the injury were analysed. Unfavorable urodynamic characteristics were described as vesicoureteral reflux of any grade, maximum storage detrusor pressure of 40 cm H2O or more, detrusor overactivity in association with detrusor sphincter dyssynergia, and detrusor overactivity alone.

Results:

Within the first year following spinal cord injury, 87 out of 97 patients (90%) showed one or more unfavourable urodynamic parameters. In 39% of the patients, the maximal storage detrusor pressure was 40 cm H2O or higher, and in 8% of the patients, there was vesicoureteral reflux. Eighty-eight percent of the patients also exhibited detrusor over activity with detrusor sphincter dyssynergia. No patient experienced low bladder compliance.

Discussion:

In contrast to the assumption of an acontractile detrusor, over 70% of patients had poor urodynamic measures during the first month following acute SCI.[2]These results are consistent with the study by Bywater et al., which found similar overall percentages for unfavourable urodynamic parameters during this early period, but with a marginally greater percentage of patients having a high-pressure system during urine storage (pDetmax 40 cm H2O), 31% compared to 23% in the present study.[3] This disparity could be explained by the larger number of patients in this research cohort who had less serious injuries, such as American Spinal Injury Association Impairment Scale grade D.

Parameter	Within the first year of SCI	1-Mo follow-up	3-Mo follow-up	6-Mo follow-up	12-Mo follow-up
Urodynamics performed, No. (%)	97 (100)	90 (93)	85 (88)	75 (77)	73 (75)
DO and DSD, No. (%)	85 (88)	61 (68)	63 (74)	55 (73)	52 (71)
Maximum storage detrusor pressure ≥40 cm H_2O, No. (%)	38 (39)	21 (23)	18 (21)	24 (32)	11 (15)
Filling volume when pDet = 40 mL, median (Q1-Q3)	-	505 (215-610)	525 (278-753)	398 (258-663)	300 (195-500)
Bladder compliance <20 mL/cm H_2O, No. (%)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Videourodynamics performed, No. (%)	96 (99)	88 (98)	76 (89)	67 (89)	68 (93)
Vesicoureteral reflux, No. (%)[a]	7 (7)	4 (5)	5 (7)	2 (3)	2 (3)
At least 1 unfavorable parameter, No. (%)	87 (90)	65 (72)	67 (79)	61 (81)	55 (75)

Abbreviations: DO, detrusor overactivity; DSD, detrusor sphincter dyssynergia; pDET, detrusor pressure; Q, quartile; SCI, spinal cord injury.
[a] Vesicoureteral reflux grade: 1 month, 4 grade I; 3 months, 1 grade I, 3 grade II, 1 grade III; 6 months, 1 grade II, 1 grade III; 12 months: 2 grade I.

Unfavourable Urodynamic Parameters

Conclusion:

Researchers discovered that the majority of the population had poor urodynamic characteristics within the first year following spinal cord injury using a standardised urodynamic follow-up programme. There is a need for additional research regarding recommendations for a urodynamic follow-up schedule during the first year following spinal cord injury because early treatment based on urodynamic findings may reduce the likelihood of deterioration of upper and lower urinary tract function, improving long-term outcomes.

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3. THE LONG-TERM OUTCOMES AND SAFETY OF LAPAROSCOPIC SIMPLE PROSTATECTOMY.

Introduction:

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Benign prostatic hyperplasia (BPH), which is a major cause of lower urinary tract symptoms in males, is the nonmalignant proliferation or hyperplasia of prostate tissue. It has been demonstrated that disease prevalence rises with age. [1]With a prevalence of 70% in aged males, benign prostate hyperplasia is the most frequent aetiologic component of lower urinary tract symptoms (LUTS). The EAU recommendations specify that men with prostate sizes ≥ 80 mL should have the option of an open simple prostatectomy (OSP), laser, or bipolar enucleation. The most traditional surgical procedure for treating big prostate glands is OSP. Laparoscopic simple prostatectomy (LSP) is an effective substitute for OSP with equivalent results and considerable benefits in terms of blood loss, duration of hospital stay, and duration of catheterization period.[2] This retrospective study's objective is to assess the laparoscopic simple prostatectomy's long-term effects and safety.

Laparoscopic simple prostatectomy is a successful and safe treatment that results in considerable and sustained long-term symptomatic relief.

Methods:

Retrospective analysis was performed on a total of 80 patients who underwent LSP. Moderate to severe LUTS with a prostate greater than 80 mL as determined by transrectal ultrasonography was the indication for LSP. Patients either did not react to medical treatments or refused it but wanted surgical intervention rather. The study comprised patients who had previously had urine retention and an indwelling catheter. Prior to and after surgery, uroflowmetry, post-void residual volume, and standard questionnaires were evaluated. The Clavien-Dindo classification was used to categorize perioperative complications.

Results:

The mean specimen weighted 83 grammes, and the mean procedure took 156 minutes. Patients had a substantial improvement in Qmax (P =.002), IPSS (P <.001), and QoL (P <.001) after a mean follow-up period of 40 months. Post-void residual volumes considerably reduced.11 participants (13.8%) had complications; two experienced severe (grade 3b–4a) complications and nine experienced mild (grade 1–2) complications. One patient required a blood transfusion during surgery due to significant prostatic adherence from a prior abscess development, and one conversion to open surgery was noted.

Complications	Number (%)	Clavien-Dindo
Extravasat	4 (5)	1
Prevesical hematoma	2 (3)	1
Epididymitis	2 (3)	2
Atrial fibrillation	1 (1)	2
Rebleeding	1 (1)	3b
Ventricular tachycardia	1 (1)	4a

Postoperative complications of laparoscopic simple prostatectomy

Discussion:

This research demonstrates that LSP is a successful and secure surgical procedure for big prostate glands. Recently, LSP and Holmium-laser enucleation of the prostate (HoLEP) were compared in an investigation. The first prospective randomised controlled research comparing HoLEP with LSP and Roboter-assisted simple prostatectomy (RASP) was carried out by Fuschi et al. which showed no noticeable difference between the functional and perioperative outcomes.[3] An in-depth comparison of LSP with thulium laser prostate enucleation was reported in a recent study. Both surgical approaches are equally efficient in relieving from benign prostate obstruction, according to Bertolo et al.[4]

Conclusion:

In a trained laparoscopic facility, LSP is a safe and efficient surgical procedure for large prostate glands that appears to be comparable to presently advised treatment options with a low complication rate.

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4. A CASE REPORT OF ENDOSCOPIC COMBINED INTRARENAL SURGERY FOR RENAL ALLOGRAFT LITHIASIS UTILISING THE "SHEATH-CONNECTION TECHNIQUE."

Introduction:

Renal transplant lithiasis is a rare condition, and its recurrence creates a challenging scenario. Despite having a 0.2-1.7% incidence, renal transplant lithiasis is a very rare consequence. After receiving an allograft, patients of renal transplants often need to have routine follow-up to ensure that the allograft is functioning well. Therefore, renal transplant lithiasis may sometimes be discovered during follow-up without symptoms. The function of an allograft is less affected by early-stage renal transplant lithiasis.[1] Due to the possibility of several

This is the first case of endoscopic combined intrarenal surgery for renal allograft lithiasis that uses the new "sheath-connection technique."

complications, aggressive treatment is required for RAL. Endoscopic combination intrarenal surgery (ECIRS) was carried out by the researchers. Because of the ectopic location of the kidney allograft or ureterovesical implantation, retrograde techniques employing a ureteral access sheath (UAS) are sometimes difficult or impossible for RAL therapy.As a result, researchers introduced the "sheath-connection technique" for a patient with calculi in the transplanted kidney when the insertion of UAS makes ECIRS for RAL challenging.[2]

Case Presentation:

A man aged 66, complained of right lower abdomen discomfort. He received cadaveric kidney transplantation at another facility ten years ago after receiving a diagnosis of end-stage renal disease brought on by diabetic nephropathy with arteriosclerosis obliterans (ASO). The ureteroneocystostomy procedure was used to carry out the Lich-Gregoir method. His blood creatinine levels were increased to 2.6 mg/dL, and computed tomography (CT) revealed a 7-mm stone in the transplanted ureter. A double-J ureteral stent was immediately placed. Clinical signs and serum creatinine levels thereafter got better. Despite two attempts at retrograde intrarenal surgery (RIRS), UAS could not be placed into the ureter of the donated kidney, and the patient still had residual stones. His ASO symptoms got worse after RIRS, and he was sent to another facility for ASO therapy. When he returned, a CT scan revealed many calculi surrounding the transplanted kidney's indwelling ureteral stent. As a result, physicians had intended to perform ECIRS because this RAL was challenging to treat. Doctors carried out the procedure with the patient in the standard lithotomy posture. Using grasping forceps and a rigid 22-Fr cystoscope, researchers first removed the Double-J ureteral stent that had been installed before retrogradely inserting a 0.035′′ hydrophilic guidewire into the ureter. Second, percutaneous renal access was created by puncturing the inferior renal calyx with an 18G needle while being guided by ultrasonography. The 18G puncture needle was used to insert a metallic guidewire into the renal pelvis. With an 8mm nephrostomy balloon catheter, the percutaneous tract was subsequently expanded. To use a 22Fr nephroscope, a 24Fr functioning transparent vinyl sheath was then positioned. Utilizing LithoClast® to break RAL and grasping forceps to extract it. All of the stones in the renal calyx could not be removed using the percutaneous method. As a result, experts decided that it was necessary to insert a new UAS into the ureter and use a ureteroscope to remove all of the remaining stones. Although an effort was made to introduce the implanted ureter intraoperatively utilising 11/13-Fr UAS, it was unable to do so due to the tortuous implanted ureter. As a result, researchers passed a 0.035′′ hydrophilic guidewire through the transparent vinyl sheath from the renal pelvis to the bladder. As a result, researchers introduced the UAS into the urethra using the sheath connection approach. Using grasping forcep and the 11/13-Fr UASs, the guidewire was brought to the external urethral meatus, was successfully placed via the ureterovesical junction. After removing its inner dilator, the second UAS was implanted from the urethral side to the renal pelvis. The junction of two UAS was retrogradely carried via the ureterovesical junction after attaching them to the bladde, and the UAS was successfully indwelled from the urethra to

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the renal pelvis (. A flexible ureteroscope was then used to perform ECIRS. No residual stone fragments were seen on the post-operative CT. The transplanted kidney function has been preserved without RAL three years following surgery.

Preoperative pelvic computed tomography (CT). Pelvic CT showed multiple calculi around the indwelling ureteral stent in the transplanted kidney (white arrowhead).

Discussion:

A very uncommon stone disease is RAL. ECIRS standardised the combined antegrade and retrograde approach to large and/or complicated urolithiasis. Reducing the number of required percutaneous tracts, minimising the risk of pre- and postoperative bleeding, and lowering intrarenal pressure can all help to reduce postoperative problems. [3] For RAL, creating a stable pathway for a percutaneous and transurethral access to the renal pelvis is essential for attaining effective ECIRS. Retrograde techniques utilising a UAS are, however, either challenging or impossible for RAL therapy due to the ectopic location of ureterovesical or kidney allograft implantation.[4] Despite the challenges of transurethral UAS placement, in this instance, two UAS were coaxially introduced with a guidewire in both an antegrade and retrograde approach and combined to form a single cylindrical structure. The two UASs' connection was smoothed out and successfully passed the ureterovesical junction.

Conclusion:

This is the first ECIRS report for RAL that employs the new "sheath-connection technique." The "sheath-connection approach" enables surgeons to use ECIRS on renal transplant patients who are unable to place a UAS.

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