

Urethroplasty for Female Urethral Stricture during the COVID-19 Pandemic: A Challenging Clinical Experience

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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Case Study

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ABSTRACT

Amidst the COVID-19 pandemic, managing female urethral strictures posed distinct challenges. Scar tissue development within the urethral sub-epithelial tissue led to constriction, causing lower urinary tract symptoms. Traditionally, urethral dilation was employed, but high recurrence rates prompted a shift towards formal urethroplasty. We observed 36 patients during this pandemic, gathering data on stricture management. Those with Q max >10 ml/sec underwent conservative measures; Q max <10 ml/sec cases received urethroplasty with vaginal mucosal grafts. The pandemic's impact on healthcare necessitated cautious surgical planning, while strict protocols ensured patient and staff safety. Prompt intervention remains vital for improved outcomes in female urethral stricture cases.

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1. INTRODUCTION

Urethral stricture is characterized by the development of scar tissue in the sub-epithelial tissue of the urethra, leading to constriction of the urethral lumen. This condition can cause obstruction and result in lower urinary tract symptoms. Urethral stricture can arise as a consequence of various procedures, including catheterization, urinary tract endoscopy, urethral surgery, and radiation. Historically, female urethral stricture has been managed with urethral dilation, but this approach has shown high recurrence rates. Recent evidence suggests that formal urethroplasty should be the primary management option to prevent recurrence [1].

The COVID-19 pandemic, caused by the coronavirus SARS-CoV-2, has had an unprecedented impact on global health, social welfare, and the economy [2]. During the early stages of the pandemic, fear and panic among patients were common. Healthcare systems were overwhelmed, and elective surgeries were postponed for approximately six months, with only emergency surgeries performed under strict precautions [3,4]. COVID-19 forced healthcare professionals to adopt enhanced personal protective equipment (PPE) to minimize transmission risks [5,6].

2. CASE PRESENTATION

2.1 Clinical Experience

In this clinical experience, we present an observation involving 36 female patients with urethral stricture, focusing on their management during the COVID-19 pandemic. Patient data were collected prospectively, including the duration of presenting complaints, previous procedures, hospital stay, number of visits, and duration of Foley catheterization. All patients underwent thorough evaluation, including medical history, socioeconomic status, and literacy assessment. Diagnostic tests, such as ultrasonography kidney–ureter–bladder (KUB), urine analysis, serum creatinine, and micturating cysto-urethrogram (MCU), were conducted.

Patients with a maximum flow rate (Q max) of >10 ml/sec were managed conservatively with calibration and dilatation, while those with Q max <10 ml/sec were planned for urethroplasty using a vaginal mucosal graft. Among the 11 patients scheduled for surgery, 5 patients declined due to COVID-19 concerns. Of the remaining 6 patients who underwent COVID-19 testing, 3 were positive, and only the COVID-negative patients proceeded with urethroplasty.

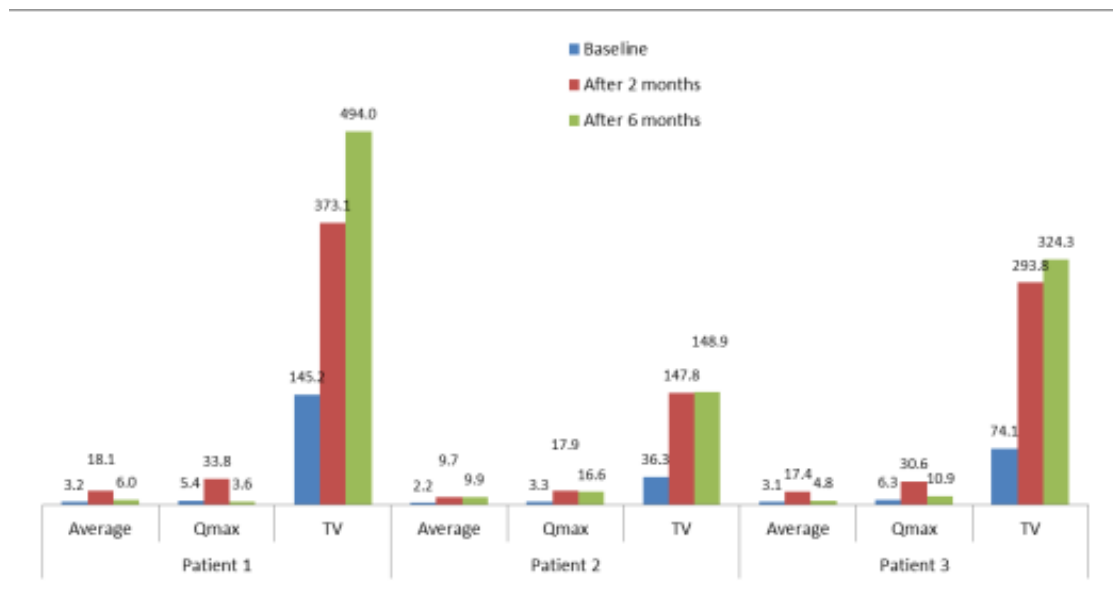


Fig. 1 Distribution of uroflowmetry parameters of individual patients

2.2 Surgical Procedure

All 3 patients underwent dorsal onlay urethroplasty, with the graft harvested from the anterior vaginal wall. Peri-operative antibiotic prophylaxis was administered as per the urine culture sensitivity report. A 16 French silicone catheter was inserted post-operatively, surrounded by a gauze piece soaked in betadine, and a vaginal pack was applied. Patients were discharged with instructions for wound and vaginal care. The catheter remained in place for four weeks, and uroflowmetry was performed at 2-month and 6-month intervals (Fig. 1).

3. DISCUSSION

The COVID-19 pandemic brought significant changes in the approach to patient care and surgical practice. Initially, with OPDs closed, only emergency surgeries were performed with minimal staff and strict PPE usage. Patients were hesitant to visit hospitals due to social stigma and fear of infection. Elective surgeries were prioritized only after obtaining a COVID-negative status, leading some patients to opt for conservative management [7]. Additionally, patients who were willing to undergo surgery were occasionally found to be COVID-positive after testing [8,9].

Considering the risks of transmission through aerosols, vaginal mucosal grafts were preferred over buccal mucosal grafts for urethroplasty. The use of vaginal grafts in female urethroplasty has proven advantageous due to the ease of harvesting and its hairless elastic nature. The patients in our study underwent dorsal onlay urethroplasty, a procedure that offers better graft fixation and forward stream compared to ventral urethroplasty, which may result in higher rates of urethrovaginal fistula [10].

4. CONCLUSION

The management of female urethral stricture during the COVID-19 pandemic presented unique challenges. The pandemic's impact on healthcare systems and patient attitudes led to delays in seeking treatment and choosing conservative management. Surgical procedures had to be carefully planned, and strict COVID-19 protocols were followed to ensure the safety of patients and healthcare staff. Female health is vital, and early intervention is crucial in achieving better outcomes and overall health for patients with urethral stricture.

CONSENT

As per international standard or university standard, patient(s) written consent has been collected and preserved by the author(s).

ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Mundy AR, Andrich DE. Urethral strictures. *BJU Int.* 2011;107(1):6–26.
2. Chavda VP, Yao Q, Vora LK, Apostolopoulos V, Patel CA, Bezbaruah R et al. Fast-track development of vaccines for SARS-CoV-2: The shots that saved the world. *Front Immunol [Internet]*. 2022;13. Available: <https://www.frontiersin.org/articles/10.3389/fimmu.2022.961198> [Accessed on 2023 Aug 27].
3. Alkathlan MS, Alsuyufi YA, Alresheedi AF, Khalil R, Sheiq PA, Alotaieq SS, et al. Healthcare adjustments and concerns: A qualitative study exploring the perspectives of healthcare providers and administrative staff during the COVID-19 pandemic in Saudi Arabia. *Front Public Health [Internet]*. 2023;11. Available: <https://www.frontiersin.org/articles/10.3389/fpubh.2023.961060> [Accessed on 2023 Aug 27]
4. Impact of Covid-19 on access to paediatric surgery in Teso sub-region, Eastern Uganda- Abstract - Europe PMC [Internet]. Available: <https://europepmc.org/article/ppr/ppr594467> [Accessed on 2023 Aug 27].
5. Cubas ALV, Moecke EHS, Provin AP, Dutra ARA, Machado MM, Gouveia IC. The impacts of plastic waste from personal protective equipment used during the COVID-19 Pandemic. *Polymers.* 2023; 15(15):3151.
6. 'You learn to smile with your eyes', exploring the impact of enhanced personal protective equipment on primary care dental practitioners in the UK: An interpretative phenomenological study -

- Legge - Community Dentistry and Oral Epidemiology - Wiley Online Library [Internet]. Available: <https://onlinelibrary.wiley.com/doi/full/10.1111/cdoe.12898> [Accessed on 2023 Aug 27].
7. Respected but stigmatized: Healthcare workers caring for COVID-19 patients | PLOS ONE [Internet]. Available: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0288609> [Accessed on 2023 Aug 27].
 8. Singh M, Kapoor R, Kapoor D, Kapoor R, Srivastav A, Chipde S. Dorsal onlay vaginal graft urethroplasty for female urethral stricture. Indian J Urol IJU J Urol Soc India. 2013;29(2):124–8.
 9. Navarro-Galmes MA, Hernandez-Hernandez D, Padilla-Fernandez B, Castro-Diaz DM. Female urethroplasty: Anterior vaginal wall flap (Blandy Flap) - simpler tends to be better. Urol Int. 2022;106(3):313–6.
 10. Kore RN, Martins FE. Dorsal onlay urethroplasty using buccal mucosal graft and vaginal wall graft for female urethral stricture – Outcome of two-institution study. Indian J Urol IJU J Urol Soc India. 2022;38(2):140–5.

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