



A CASE REPORT OF ACUTE URINARY RETENTION IN THE MALE CHILD FROM URETHRAL CALCULOUS:

Radio-Diagnosis

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ABSTRACT

Urethral calculus is rarely seen. We reported a case of urethral calculus in 1 year old male child with acute urinary retention.

KEYWORDS

Urethral stone/ calculous.

1. INTRODUCTION:

In the male child, lower urinary tract symptoms are usually secondary to congenital uropathy, most often posterior urethral valves, and sometimes neurogenic bladders from spinal dysraphism. Urinary stones can be an obstacle to the normal flow of urine at any level of the lower urinary tract. Urolithiasis prevalence varies from 1 to 5%¹ in Asia. This article presents A cases of acute urine retention from stone located in the male urethra.

2. Presentation:

A 1 year child was presented to the Urology Department with complaints of acute urinary retention for which underwent catheterization. History of difficulty in micturition and one episode of hematuria for 10 days.

Patient was evaluated with MCUG showed No reflux, voiding radiographs confirmed interruption to flow in the penile urethra with proximal urethral dilatation. A Round to oval filling defect measuring approximately 5x4 mm noted in the mid penile urethra with marked narrowing of the stream of contrast distal to the filling defect and dilatation of the proximal urethral segment- suggestive of urethral soft tissue mass -? hemangioma / polyp/calculous. The bladder was markedly distended; there was no vesicoureteral reflux.

Ultrasonography of the bladder and urethra showed evidence of an ill-defined echogenicity focus? mass seen in the mid part of urethra on B mode and shows subtle aliasing artifact/ flow on color imaging. Patient underwent Cysto-Urethroscopy + Laser lithotripsy. A Stone identified in the urethra at penoscrotal junction, partially obstructing the lumen and encrusted in the urethral wall, lithotripsy done and stone fragments extracted with complete clearance.

3. DISCUSSION:

Urolithiasis is rare in children². It accounts for 5 to 15% of urinary stones in developing countries^{3,4}. It generally affects young boys under 5 years of age and bladder calculi are most frequent. Most stones that are impacted in the urethra are indeed of bladder origin. Urethral stones account for 0.3% of all urolithiasis⁵. These stones are constituted mainly of urates and/or triple (Ammonium, Magnesium, and Calcium) phosphates^{6,7}. Difficulty in passing urine, pain and a mass in the penis is

a common clinical presentation. Calculi of the posterior urethra are often larger and urine can flow around them. Smaller stones tend to localize at the distal part, most frequently in the fossa navicularis often completely obstructing the passage causing acute retention of urine⁸.

The cases presented underline the necessity of performing a complete physical examination of the genitalia, including the inspection, percussion, and palpation of the penis in search of a calculus.

If urethral STONES is suspected, a plain X-ray of the abdomen may be useful to confirm the diagnosis and location of the stone. The sensitivity of pediatric ultrasound for the detection of stones varies from 59 to 78% with a specificity approaching 100%⁹⁻¹¹. Its use at the level of the urethral region is not popular but would certainly be advantageous over standard X-ray which is increasingly proscribed in children.

From a biochemical standpoint, ammonium urate is responsible for nearly half of the calculi observed in developing countries. A large proportion of urate-nucleated calculi is caused by an infectious process and potentiated by several mechanisms: a gastrointestinal infection that causes diarrheal episodes with loss of electrolytes such as sodium and potassium; an infection of the urinary tract from urease-producing bacteria; or even a mixed infection (both digestive and urinary)⁶. Also, it has been documented that the incidence of urinary stones is higher in countries with warm or hot climates, probably due to low urinary output and scanty fluid intake.

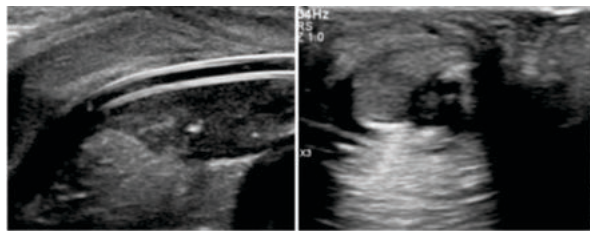
Endoscopic lithotripsy (Cysto-Urethroscopy + Laser lithotripsy) has become the standard treatment in the management of bladder and urethral stones in the tertiary centers. The latter is achieved after pushing back the stone into the bladder with success rates close to 80%⁵.

In the absence of Urethroscopy and lithotripsy, open ureterolithotomy is the treatment of choice, Requires follow-up.

4. CONCLUSION:

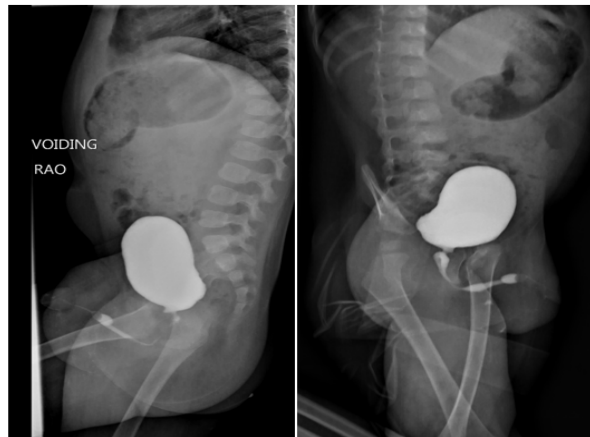
An underlying congenital or acquired pathology should be evaluated in the male child presenting with acute urinary retention. Patient

should be evaluated with MCUG and Ultrasonography of the bladder and urethra to localize the calculus.



Usg Penile Region :

(Suboptimal due to Urethral catheter) shows an ill-defined echogenicity focus? mass seen in the mid part of urethra on B mode.



Mcug (micturating Cysto-urethrogram):

Round to oval filling defect measuring approximately 5x4 mm noted in the mid penile urethra with marked narrowing of the stream of contrast distal to the filling defect and dilatation of the proximal urethral segment- suggestive of urethral soft tissue mass - ?hemangioma / polyp/calculus. The posterior urethra appears normal. No obvious evidence of any posterior urethral valve. No evidence of vesico ureteric reflux.



Urethroscopy:

A Stone in the urethra at penoscrotal junction , partially obstructing the lumen and encrusted in the urethral wall.

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REFERENCES:

1. I. Sorokin, C. Mamoulakis, K. Miyazawa, A. Rodgers, J. Talati, and Y. Lotan, "Epidemiology of stone disease across the world," *World Journal of Urology*, vol. 35, pp. 1301–1320, 2017.
2. L. Collard, "Lithiase urinaire de l'enfant et l'adolescent," *Revue Medicale de Liege*, vol. 59, no. 4, pp. 221–226, 2004.
3. M. Arifi, Y. Halim, M. A. Bouhafis et al., "Traitement par lithotritie extracorporelle des calculs du haut appareil urinaire de l'enfant," *Progrès en Urologie*, vol. 16, pp. 594–597, 2006.
4. S. Rizvi, S. Naqvi, Z. Hussain et al., "The management of stone disease," *BJU International*, vol. 89, pp. 62–68, 2002.
5. A. S. Safwat, D. A. Hameed, M. A. Elgammal, Y. M. Abdelsalam, and A. Abolysor, "Percutaneous suprapubic stone extraction for posterior urethral stones in children: Efficacy and safety," *Urology*, vol. 82, no. 2, pp. 448–450, 2013.
6. M. Daudon, B. Bounxouei, F. S. Cruz et al., "Composition des calculs observés aujourd'hui dans les pays non industrialisés," *Progrès en Urologie*, vol. 14, pp.

1151–1161, 2004.

7. S. Aegukatajit, "Reduction of urinary stone in children from north-eastern Thailand," *Journal of the Medical Association of Thailand*, vol. 82, no. 12, pp. 1230–1232, 1999.
8. A. B. Salman, "Urethral calculi in children," *Journal of Pediatric Surgery*, vol. 31, no. 10, pp. 1379–1382, 1996.
9. J. P. Heneghan, K. A. McGuire, R. A. Leder, D. M. DeLong, T. Yoshizumi, and R. C. Nelson, "Helical CT for nephrolithiasis and ureterolithiasis: comparison of conventional and reduced radiation-dose techniques," *Radiology*, vol. 229, no. 2, pp. 575–580, 2003.
10. W. R. Hendee and M. K. O'Connor, "Radiation risks of medical imaging: separating fact from fantasy," *Radiology*, vol. 264, no. 2, pp. 312–321, 2012.
11. K. A. Fowler, J. A. Locken, J. H. Duchesne, and M. R. Williamson, "Ultrasound for detecting renal calculi with nonenhanced CT as a reference standard," *Radiology*, vol. 222, no. 1, pp. 109–113, 2002.