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A Giant Obstructing Prostatic Urethral Calculi – A Rare Case Report

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Abstract:- Giant obstructing prostatic urethral calculi are a rare but significant entity within the spectrum of lower urinary tract lithiasis. Representing a minute fraction of urinary stone disease cases, these calculi pose unique diagnostic and management challenges. This comprehensive review synthesizes existing literature to provide insights into the epidemiology, etiology, clinical presentation, diagnostic modalities, and treatment options for giant obstructing prostatic urethral calculi. We explore the bimodal age distribution of incidence, highlighting peaks in early childhood and the fourth decade of life, and delve into potential etiological factors including migration from the bladder or upper urinary tracts and de novo formation. Clinical manifestations vary, ranging from acute lower urinary tract symptoms to more insidious presentations associated with anatomical abnormalities. Diagnostic strategies, encompassing imaging modalities and laboratory tests, are crucial for accurate assessment and management planning. Treatment approaches, such as endoscopic lithotripsy, open surgical procedures, and shock wave lithotripsy, are discussed in detail, along with their respective success rates and complications. Through a thorough examination of the current source , this case report aims to enhance understanding and facilitate optimal management strategies for giant obstructing prostatic urethral calculi.

Keywords:- *Giant Urethral Calculi, Management Strategies , Lower Urinary Tract Lithiasis, Prostatic Urethral Calculi.*

I. INTRODUCTION

A 74 yr old male came to the emergency department with abdominal pain and lower urinary tract symptoms. On physical examination presence of suprapubic fullness and tenderness. X-ray Kub (Kidneys, ureter, bladder) revealed vesical calculi and prostatic urethral calculi (fig 1). Non-Contrast Computerized Tomography Scan of the kidneys, ureter, and bladder (NCCT kub). (fig 2) revealed Bilateral (B/L) renal calculi with bilateral hydroureteronephrosis, two vesical calculi each 2.5cm and a large Prostatic urethral calculus of size 5 x 3.3cm. Urine examination was suggestive of Urinary tract infection (UTI). Cystoscopy(fig 3) revealed completely obstructing giant prostatic urethral calculi.

Patient was treated by suprapubic transvesical cystolithotomy(fig 4) and bladder neck incision was given to retrieve the giant prostatic urethral calculi.

X-ray KUB(fig 1) and NCCT KUB(fig 2)

Ncct Kub revealed B/L Renal calculi with hydroureteronephrosis,Two vesical calculi of size 2.5cm, A large prostatic Urethral Calculus of size 5 x 3.3 cm and cystitis

Cystoscopy (fig 3) finding was suggestive of a giant obstructing prostatic urethral calculi in dilated prostatic urethra.

Fig 1 - vesical calculi and prostatic urethral calculi

Fig 2- B/L renal calculi with bilateral hydroureteronephrosis ,vesical calculi, giant prostatic urethral calculi

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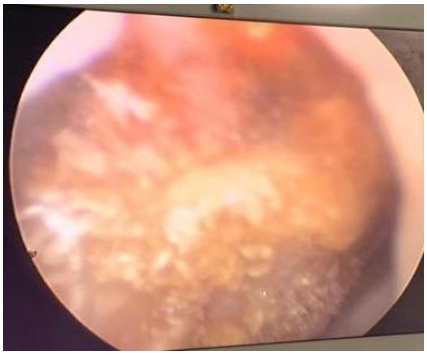

Fig 3 - completely obstructing giant prostatic urethral calculi

Fig 4 -suprapubic transvesical cystolithotomy

Fig 5- calculi

II. DISCUSSION

Urethral calculi represent a rare occurrence within lower urinary tract lithiasis, constituting merely (0.3%) of all instances of urinary stone disease in endemic areas [1]. These calculi typically manifest with a bimodal age distribution, with peak occurrences observed in early childhood and the fourth decade of life. They can originate from migration from the bladder or upper urinary tracts or form spontaneously, often in conjunction with anatomical anomalies like strictures or diverticula, or from deposition on a foreign body. Research indicates that only a small proportion (2%) of patients with migratory urethral calculi also have concurrent bladder stones, while a larger fraction (18%) exhibit coexisting upper urinary tract calculus disease[2]. Symptoms vary depending on the calculus type; migratory calculi often precipitate acute lower urinary tract symptoms, such as stranguria, urinary retention, gross hematuria, and dysuria, while de novo urethral calculi and those situated in diverticula may present with more gradual onset symptoms. Diagnosis frequently involves the identification of urinary tract infections at the time of presentation [3]. For stones situated in the posterior urethra, they can be displaced back into the bladder for subsequent fragmentation through methods like electro hydraulic or laser lithotripsy, with reported success rates ranging from 66% to 86%. If fragmentation within the bladder proves unsuccessful, open cystolithotomy may be necessary. Although shock wave lithotripsy after displacement into the bladder has been attempted, success rates have been reported at only 60% [4].

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