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Case Report

Migrated Renal Calculus into Prostatic Urethra Leading to Prostatic Urethral Rupture and Massive Bladder Hematoma - Atypical Presentation

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ABSTRACT:
Presentation of an impacted prostatic urethral calculi causing prostatic injury leading to large bladder hematoma which was drained by open cystolithotomy in a tertiary hospital (ANIIMS, Port Blair) in the remote islands of Andaman and Nicobar.

Keywords: prostatic urethral calculus, bladder hematoma

INTRODUCTION:

Renal calculi are crystalline minerals deposits that form in the kidney. They develop from microscopic crystals in the loop of henle, distal tubule or the collecting duct and can enlarge to form visible fragments. Renal stone formation is the end result of physiochemical process that involves nucleation of crystals from a supersaturated solution [1]. Urolithiasis is a major health problem with its high morbidity, high cost management and potential for end stage renal disease.[2] Urinary calculi are the third most common affliction of the urinary tract, exceeded only by urinary tract infection and pathogenic conditions of the prostate[3]. Kidney stones affect people who are between 30-60years of age [4]. They affect men more than women. It is estimated that renal colic affect about 10-20% of men and 3-5%of women.[4]It is a distressing chronic condition which is getting common and was found increasing in some parts of the world[5]. The common risk factors are age, sex, climate, season, stress, fluid intake, occupation, diet, genetic and metabolic changes [6].Dietary factors that increase the risk of stone formation include low fluid intake and high dietary intake of animal protein, sodium, refined sugars, fructose and high fructose corn syrup [7]. Calcium oxalate and or phosphate stone account for almost 70% of all renal stones observed in economically developed countries [4].

CASE STUDY:

A 37year old male presented with complaints of fever since 2 weeks , pain abdomen since 1 week and hematuria since 2 days. Fever was insidious in onset , high grade fever , fever spike more in the evening, assoc. with chills , vomiting, burning micturition, relieved with medication .Pain abdomen that was colicky in type , radiating from loin to groin region. Patient developed the complaint of hematuria 2days back and was taken to nearby primary health care centre (PHC). No H/O suprapubic pain, headache, loose stools , cough , breathing difficulty. Patient was managed conservatively. Patient after 1 day of hospitalization developed the complaint of decrease in urine output. Patient was catheterised using foley's catheter, the catheter got blocked several times and repeated attempts of foley's catheterization were made. On the same evening, USG Abdomen + KUB was done (06/08/2022) which revealed:

1. Right kidney measures 12.8cm x 5.4cm, with dilated right ureter
2. Left kidney measures 12.85 x 5.04cm with multiple calculi in the upper pole of kidney measure 0.46cm
3. Bilateral Pyelonephritis
4. Urinary bladder full with hyperechoic lesion noted, may be blood clots.

Impression– Bilateral Pyelonephritis with left renal calculi with dilated left ureter. Hyperechoic lesions in the bladder.

Due to inadequate facilities in PHC, patient was referred to a tertiary hospital (ANIIMS, Port Blair) on 07/08/2022.

Under strict aseptic precautions, Suprapubic Cystostomy was done on same day.

USG Abdomen+ KUB was repeated which revealed –

1. Liver – Grade 2 Fatty liver
2. Gallbladder, Spleen , Pancreas appear normal
3. Mild HUN seen in left kidney

4. Urinary Bladder filled with organized hematoma measuring about 750mL , no urine contents seen, Foley's bulbs of SPC seen
5. Prostate grossly normal

Impression- Urinary bladder organized hematoma with mild HUN left kidney. On the next day, NCCT KUB was done , which showed the bulb of suprapubic catheter and bulb of foley's catheter inside the bladder filled with hematoma (Fig.1,2,3)

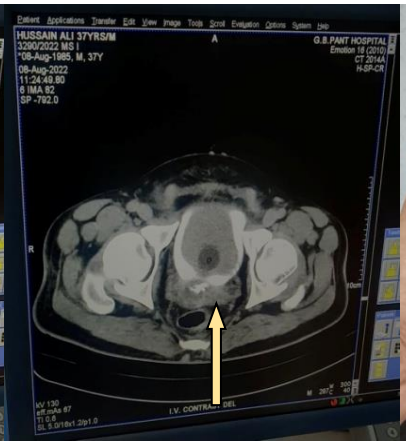

Fig.1 Fig. 2. Fig.3 Fig. 4

Fig.3– depicts contrast extravasation due to calculi and prostatic urethral rupture
Fig.4–Blood clots within the urinary bladder removed

Patient was taken up for Emergency Cystolithotomy owing to ongoing urosepsis as the impacted prostatic urethral calculi caused prostatic injury that lead to bladder hematoma. Pfannenstiel's incision was given. Skin, subcutaneous tissue and the rectus muscle was separated and extra-peritoneal approach was made. Two stay sutures were taken with 2-0 silk. Incision was given in the dome of the bladder. Blood clot approx. 1L was evacuated (Fig.4) The incision in the dome of the bladder was closed with 2-0 vicryl in two layers. Abdomen was closed in layers with 2-0 vicryl and 2-0 ethilon. On day12 post operatively NCCT KUB was repeated which showed resolving bladder hematoma (Fig 5 ,6,7) and no contrast extravasation from prostatic urethra.

NCCT KUB after POD 12 :

Fig.5 Fig. 6 Fig. 7

DISCUSSION:

In our case report, our patient had left renal calculi which migrated to the bladder and then to prostatic urethra that manifested clinically with hematuria and bladder outlet obstruction. Attempts of foley's catheterization was made and later on further evaluation revealed prostatic urethral rupture with large bladder hematoma that was subsequently evacuated by Open Cystolithotomy on emergency basis owing to ongoing urosepsis.

CONCLUSION:

Betel nut chewing is very commonly practiced in Andaman and Nicobar Islands and also was the case in our case report. Some studies have revealed that chewing betel nut could injure the kidney [8-10]. Not only hypertension, diabetes mellitus, dyslipidemia , gout, obesity but also betel nut chewing are strongly associated with kidney stone disease[11]. Bladder outlet obstruction due to prostatic urethral calculi and rupture lead to bladder hematoma and urosepsis. Through our case report we want to highlight the importance of prompt administration of higher antibiotics and immediate clot evacuation goes a long way in managing such scenarios. In the event of acute presentation with urosepsis, an open cystolithotomy and clot clearance also remains cornerstone of management to prevent septicemia and death especially in remote places where urological advancements and equipments are unavailable.

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