Case Report

Giant Vesical Stone – A Case Report

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ABSTRACT

Background: Urinary stones disease is a global problem with a declining incidence since 19th century. Commonly seen in Middle East and China, bladder stones are however rare in the western world. Giant vesical calculi especially those weighing more than 100 grams, are even rare in today's urologic practice due to early sought medical attention and prompt treatment. **Case Presentation:** The current case report is about a 40 years old Asian male who presented with dysuria, suprapubic pain, difficulty in micturition and intermittent pyrexia and hematuria for the last 1 year. Investigations revealed severe anemia, raised white blood cell count, serum urea and creatinine. Radiological investigations confirmed the presence of a large vesical stone. Initial management included Percutaneous Nephrostomy along with pre-operative preparation of the patient followed by open vesicolithotomy. Clearance of the obstruction resulted in improvement of renal function and patient was discharged home in satisfactory condition. **Conclusion:** Despite the overall decline in the incidence of urinary stones and development in the diagnostic and interventional urology, neglected cases are still seen in the outdoors due to lack of knowledge and awareness at the patient level and inadequate availability of investigation facilities in the developing countries. This sufficiently delays the treatment and results in severe complications which at times may be permanent and un compensate able. **Keywords:** Suprapubic pain, giant vesical calculus, bladder obstruction.

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BACKGROUND

Stone disease is a common problem all over the world but in certain areas the incidence is relatively quiet higher. Vesical stones are more common in the adults. In children, primary vesical stones occur commonly in North West India, Indonesia, Middle East and part of China.[1]

The incidence of vesical calculi has been decreasing since 19th century.[2] Urinary bladder calculi are now a rare clinical entity in the western part of the world.[3]

Urinary bladder calculi are usually secondary to lower urinary tract obstruction with few stones originally formed in kidneys or ureters and passed into the bladder.

Rare causes like trauma, catheterization, neurogenic bladder and foreign body have also have been reported.[4,5]

Common forms of the vesical calculi include Triple phosphate, calcium carbonate and calcium oxalate stones.[5] Patients with giant vesical calculus usually present with recurrent urinary tract infection, azotemia and retention of urine. Open surgery has been the best recommended modality for the large stones. In small or moderate calculi, endosurgical procedures as optical mechanical cystolithotripsy have an added advantage as it can be combined with corrective procedure for bladder outlet obstruction.[4,6]

Giant vesical calculi weighing more than 100 grams are rare especially in today's modern urologic practice.[7] The largest recorded stone was reported by Arthure in 1953 and weighed 6294 grams. It was found in a bladder diverticulum.[8]

The calculus reported by Randall (1921) weighed

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1914 grams[9], Powers and Matfferd (1952) weighed 1410 grams[10] and Dorsey (1952) weighed 455 grams.[11]

CASE PRESENTATION

A 40 year old, Asian male presented with history of dysuria, suprapubic pain, difficulty in micturition, intermittent pyrexia, intermittent hematuria and oliguria for the last one year. He was known hypertensive for the last 5 years which was however well controlled with calcium channel blockers. He also had history of mild upper GIT symptoms. He was not a known diabetic however.

On clinical examination, he was an undernourished male of average physique and had marked pallor. Rest of the general physical examination was unremarkable. On systemic examination, his respiratory, cardiovascular and central nervous systems were unremarkable. On inspection of the abdomen, he had a large bulge in the hypogastrium. On palpation, there was a stony hard mass about 15 cm in size, palpable in the lower abdomen just above pubic symphysis. On digital rectal examination (DRE), the prostate size was normal. Per urethral catheterization was attempted but failed possibly because of the huge stone.

On investigations, Hemoglobin was 4g/dl with WBC count $28x10^3$/uc, blood urea 249mg/dl, serum creatinine 9.6mg/dl, Na^+ 154mmol/l and K^+ 5.9mmol/l. Serum calcium was normal and serum uric acids was 10.3mg/dl. The routine urine examination showed numerous pus cells and RBCs. Abdominal ultrasonography revealed bilateral hydronephrosis with huge bladder stone. A plain radiograph of the pelvis confirmed a large irregular laminated smooth surfaced calculus filling whole of the pelvis.

Bilateral Percutaneous Nephrostomy (PCN) was done with initial thick pus followed by clear urine. Multiple blood transfusions were made. Serum creatinine declined to a level of 3.5mg/dl over a period of two weeks. On Diethylenetriaminepentaacetic acid (DTPA) scan glomerular filtration rate (GFR) was 16ml/min on right side and 19ml/min on left side.

He underwent open vesicolithotomy. The bladder was opened through extra peritoneal approach when a smooth whitish yellowish hard calculus was seen occupying the entire cavity of the urinary bladder. The stone was mobilized and freed from the mucosa. When delivered, it weighed over 1100 grams.

The patient remained with PCN for 10 days postoperatively. Antegrade pyelography was done, showing free flow of contrast into the bladder. Both PCN were removed after 2 days of clamping. Patient was discharged in good condition 13 days postoperatively with blood urea 60mg/dl and serum creatinine 2.5mg/dl. Chemical analysis of the stone revealed it to be a mixed stone.

Figure 1: After Vesicolithtomy

Figure 2: After Vesicolithtomy

Figure 3: During Surgery

Figure 4: X-Ray KUB

CONCLUSION

Our case of 1100 grams bladder stone is the largest one reported in SIMS/Services Hospital, Lahore till now. The importance of lower urinary tract obstruction in the formation of vesical calculi has been emphasized, but it was not the case in our experience which showed large size, smooth surfaced, calculus in young patient without preexisting outlet obstruction. The cause of our experience was personal negligence on the part of the patient due to lack of awareness such that the very obvious symptoms were left unnoticed and lack of investigation facilities in the rural and under developed areas which ultimately resulted in severe anemia, sepsis and renal impairment. This case necessitates health education and awareness campaigns in the form of media ads, brochures and increased availability of secondary care units across the country to minimize such incidents in future.

CONSENT

Written informed consent was obtained from the patient for publication of this Case report and any accompanying images. A copy of the written consent is available for review by the Editor of this journal.

AUTHOR'S CONTRIBUTIONS

1. Dr. M. Khalid Butt: Attended the patient in outdoor and ward (pre and post-operative period). He was also the chief surgeon involved in the surgery of the patient.
2. Dr. Adil Inam: Examined the patient and ordered relevant investigations. He was also the first assistant in surgery.
3. Dr. Saif-ur-Rehman: He was the medical officer on floor; involved in the routine management of the patient. He was the second assistant to Dr. M. Khalid Butt during surgery. He also helped in the process of data collection and correspondence.

REFERENCES

1. Joly JS: Stone and Calculus Disease of the urinary organs. Ann Surg 1930, 91(3):478.
2. Duvie SOA, Endeley EMI, Sahniya MH Urolithiasis in Maiduguri: The Nigerian Savana Belt experience.West Afr.J. Med 1989, 7:148-61.
3. Schwartz BF, Stoller MZ: The vesical calculus. Urol Clin North Am 2000, 27:333-46.
4. Hesse AT, Tiselius H-G. Siener R, et al: Urinary Stones, Diagnosis, Treatment and

Prevention of Recurrence. 3rd edition. Basel, S.Karger AG 2009.
5. Otnes B: Correlation between causes and composition of urinary stones. Scand J Urol Nephrol 1983, 17(1):93-8.
6. Al-Marhoon MS, Sarhan OM, Awad BA, Helmy T, Ghali A, Dawaba MS: Comparison of endourological and open cystolithotomy in the management of bladder stones in children. J Urol 2009, 181(6):2684-7
7. Ozgu Aydogdu MD, Onur Telli MD, and Yasar Beduk MD. Infra vesical obstruction results as gaint bladder calculi. Can Urol Assoc J. 2011 Aug, 5(4) E77-E78.
8. Wuran Wei, Jia Wang. A huge bladder calculus causing acute renal failure. Urological Research August 2010,Vol 38 issue 4 231-232
9. Randall A: Giant vesical calculus. Journal of Urology 1921, 5:119-125(1921).
10. Celik O, Suelozgen T, Budak S, IIbey Yo. Post renal acute renal failure due to a huge bladder stone: Arch It al Urol Androl 2014 Jun30;86(2): 146-7.
11. Kameya M, Sawada T, Kitami K. A huge bladder calculus causing acute renal failure Urolithiasis 2013 Feb, 41 (1) : 85-7

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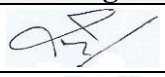
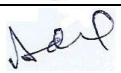
Prof. Dr. Muhammad Khalid Butt	1st Author	
Dr. Adil Inam	2nd Author	
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