CASE REPORT

Colossaprostatolithiasis: A Case Report on a 48-Year Old Male with A Giant Prostatic Calculus

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While prostatic calculi are said to be overwhelmingly common, it is, however, rare to find patients with exceptionally large calculi that would cause urinary tract obstruction. Indeed, prostatic calculi generally remain asymptomatic in almost all men, because of its non-obstructive nature. Presented here is the case of a 48-year-old male with one giant prostatic calculus that replaced almost the entire gland. He underwent endoscopic and open surgical management for the stones.

Keywords: prostatic calculi, giant calculi

Introduction

Most men will have some degree of prostatic calcification at any age. These stones may aggregate and enlarge, but rarely do they cause symptoms because these stones seldom abut the urethra. Men with the larger prostatic calculi would also rarely seek medical consult due to the lack of symptoms. Less than 50 cases of giant prostatic calculi have been reported in the literature, and none of them come from the Philippines.

Presented here is a case of a patient admitted for constipation. Clinical and radiological examinations revealed one giant prostatic calculus.

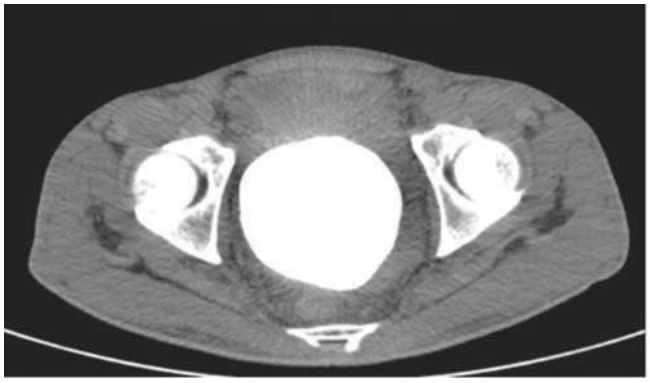
The Case

This is a case of a 48-year-old male who sought medical consult due to constipation. The history of present illness started around 7 months prior to his admission when the patient noticed a change in his bowel habits. The patient would have bowel movements only once every four to five days, drastically different from his usual daily bowel movements. The patient, however, did not have any urinary symptoms. Four months prior to admission, the patient consulted a general physician, who gave him laxatives, providing him temporary relief from constipation. Two months prior to admission, the patient underwent a whole abdomen ultrasound, which significantly showed an empty left renal fossa and multiple gas filled bowels. Due to the prolonged constipation, accompanied by abdominal discomfort, the patient consulted at East Avenue Medical Center.

Presenting with generally gastrointestinal symptoms, the patient was first evaluated by the surgery service. While physical examination showed a slightly distended abdomen and a grossly palpable, hard, non-tender, non-moveable

hypogastric mass, around 10cm x 10cm was detected. A digital rectal examination (DRE) exhibited a huge, palpable, anteriorly located solid structure with sharp edges. DRE would also prove to be painful to the patient. Attempts at inserting an indwelling Foley catheter were unsuccessful.

Computed tomography (CT) stonogram showed a 15.0cm x 10.7cm x 11.8cm prostate gland with an estimated weight of 946 grams, compressing the rectosigmoid colon, with corresponding proximal bowel distention and fecal impaction. (Figure 1) Within the prostatic parenchyma, a large calcific density, with cobblestone appearance, measuring 9.1cm x 8.6cm x 8.0cm (1296 HU) was also seen. (Figure 1) Concomitantly, the patient had grade II right hydroureteronephrosis, an absent left kidney, and dilated bowel loops.



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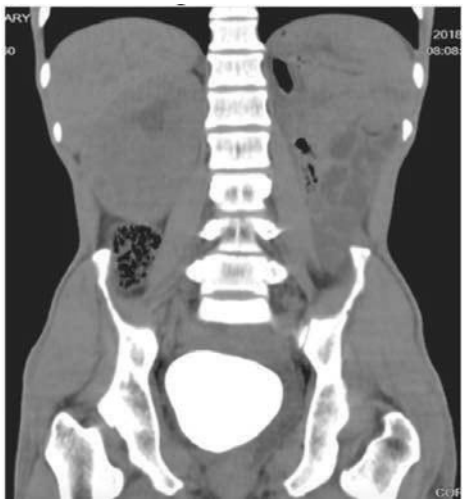

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Figure 1. CT stonogram axial view (A); coronal view (B)

With the aforementioned findings, the patient was admitted by the Urology service. A Dimercaptosuccinic acid (DMSA) scan was performed, confirming the absence of the left kidney, which, possibly may have been a congenital developmental anomaly. Subsequently, a CT urogram was also performed showing a 16.3cm x 10.7cm x 11.6cm prostatic mass (with lithiasis) invading the urinary bladder anteriorly with associated bladder wall thickening. On sagittal view, it was evident that the bladder was anterior to the said calcific lesion. A retrograde urethrogram showed opacification of the entire urethra with contrast material reaching the urinary bladder, affirming that the patient had a patent urethral tract.

The clear objective for this case was to make the patient stone-free, thereby relieving the apparent urinary and gastrointestinal obstruction. The initial plan for the patient was to do cystoscopy to visualize the bladder anatomy and the prostatic lithiasis. The procedure, though, was significantly delayed due to persistent anemia. Most notably, anemia correction was a challenge because blood transfusion was prohibited by the patient's religion. The patient was therefore referred to Internal Medicine (IM) Hematology; and maximal alternative efforts were executed to correct the anemia. Despite religiously adhering to Erythropoietin (EPO) and iron sucrose regimens, the highest hemoglobin count the patient garnered was only 97 g/L. With extensive preoperative preparations, nutritional build-up, and the risks and benefits of the procedure thoroughly explained to the patient, a cystoscopy with pneumatic lithotripsy was done only after one month post admission. Intraoperatively, it was seen that the patient had a high bladder neck, and the huge lithiasis was easily visualized within the prostatic urethra. The urologists decided to perform endoscopic prostatolithotripsy, using a pneumatic lithotripter thru a nephroscope, with the urethra carefully dilated and protected by the amplatz sheath. The urologists intended to completely remove the stone burden with this technique, averting the need for a more morbid open procedure. Midway thru the procedure, however, after evacuating almost 100g of the prostatic stone, the urologists noted that fluid

irrigant was coming out of the patient's anus. An intraoperative referral to the Surgery service was made and proctoscopy was conducted, revealing a fistulous tract in the anterior wall of the rectum. The urologists decided to terminate the procedure for fear of creating a perforation or aggravating the rectovesical fistula of the already weakened rectal wall. A diverting colostomy was immediately proposed but was deferred by the Anesthesia service because of the prolonged operation time and an episode of hypotension. An indwelling Foley catheter was left in place. Post-operatively, the patient had stable vital signs, only complaining of the urine draining out thru his anus. Hemoglobin and hematocrit did not fall significantly from its baseline. Repeat KUB x-ray showed the prostatic calculi has not decreased in volume despite having removed more than 100g of stones in the previous procedure. (Figure 2)

Figure 2. KUB x-ray taken post cystourethroscopy, prostatolithotripsy

After it was deemed impracticable to evacuate all the prostatic calculi thru minimally invasive procedures, the urologists planned to remove the stone burden completely by way of an open prostatolithotomy accompanied by diverting colostomy. The patient and his family were apprised of their treatment options, and the risks and benefits of the procedure were explained to them. After almost 2 weeks of preoperative preparations, the urologists performed an exploratory laparotomy, with the aim of completing a prostatectomy and subsequent prostatolithotomy.

A midline incision was made and carried down to the bladder. Large, dilated, blood vessels were seen on the anterior bladder wall. Upon opening the bladder, heaps of friable tissue were seen and evacuated for histopathology. The base and the posterior bladder wall seemed to have been eroded by the prostatic calculi. Evacuation of the stones were carried out using clamps and forceps. Intraoperatively, the urologists were not able to remove all of the stones and formal prostatectomy was not performed. The urologists however were able to evacuate 335g of prostatic lithiasis. (Figure 3) The urologists were limited by time and by blood loss. The bladder was quickly repaired, leaving a suprapubic tube cystostomy and an indwelling Foley catheter. Very quickly, a sigmoid loop colostomy was also performed by the General Surgery Service.

Postoperatively, the patient was stable and put on total parenteral nutrition in the following days. The hemoglobin of the patient however, decreased significantly from the baseline and electrolyte derangements became apparent, albeit the patient being clinically stable. The patient was able to eat a regular diet, and the colostomy bag became functional, urine output thru the STC and IFC were also adequate. Unfortunately, 5 days post operatively, he suddenly became unresponsive, with a Glasgow Coma Scale (GCS) of 3 and was anisocoric. The patient was intubated and put under mechanical ventilation. The patient seemed to have suffered from a cerebrovascular accident (ischemic vs. hemorrhagic) or an acute coronary syndrome (ACS). Further diagnostics were unfortunately not done as the patient expired on the 6th post operative day.

Histopathology results of the friable tissue, evacuated from the bladder, showed squamous cell carcinoma. This is understandably plausible as the

bladder mucosa may have suffered from chronic irritation and repeated infections due to the prostatic calculi.

Discussion

Prostatic calcifications are common, as well as the consequent prostatic calculi. Larger prostatic calculi, on the other hand are rare, while symptomatic larger prostatic calculi are rarer. Data on the prevalence of prostatic calculi on the general population are still lacking. There is an increase in size and prostatic stone burden in the 5th decade of life and beyond.[1] These prostatic calcifications are the result of inspissation of prostatic secretions in the prostatic ducts, that eventually aggregate to form and grow into actual calculi. In a study by Balasar in 2015, it was seen that the incidence of prostatic calculi was higher in patients with urinary lithiasis and renal calculi, altogether. Most prostatic calculi were also detected in the main prostatic ducts.[2]

While the majority of patients will not present with any symptoms, some may consult their physicians for lower urinary tract symptoms (LUTS) or non-specific gastrointestinal symptoms. Some patients may complain of pelvic pain, LUTS, urinary retention and recurrent infections. The enlarged calculus may also impose pressure on the prostate gland itself causing autoprostatectomy.[3] Most patients will not require imaging examinations for prostatic calculi, as most of these cases are seen incidentally for imaging tests done for other indications.

In a retrospective study done by Eu Chang Hwak, et al.[4] the presence of prostatic calculi did not correlate with cancer risk.[4] Age, total prostate volume, and serum total prostate specific antigen (PSA), on the other hand, had positive correlation with and were risk factors in the development of prostate cancer.

Geramoutsos, et al. found that patients with prostatitis were most likely to have prostatic calculi and would often experience pelvic pain syndromes.[1] On the other hand, a study by Kim, et al. in 2013, showed that prostatic calculi had no significant association with chronic inflammation and clinical parameters of BPH.[5]

Asymptomatic prostatic calculi may be left in place without any significant sequelae. Prostatic calculi causing morbidity may be approached via open prostatolithotomy, robot-assisted laparoscopic prostatectomy, transurethral resection, or fragmentation with laser lithotripsy.[6]

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