

Case Report

Clinical approach and diagnosing bladder stone in a 74-year-old man patient: a case report

I. G. N. M. Nurcahya*, K. Suryana

Department of Internal Medicine, Wangaya General Hospital Denpasar, Bali, Indonesia

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***Correspondence:**

Dr. I. G. N. M. Nurcahya,

E-mail: p.metta14@gmail.com

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ABSTRACT

This article reports a 74-year-old man came to the emergency department with complaint blood in urine, urinary tract symptom such as nocturia, frequency urgency, and cloudy urine. Physical examination showed suprapubic area was hard on palpation. The abdominal X-ray of the patient showed an opaque stone in the bladder. An ultrasound scan showed a multiple bladder stone with the longest stone 1.59 cm in size. Bilateral kidney cyst and the prostate was enlarged with volume ± 123.85 cc, IPP 2.29 cm. Entire stone elimination and eradication related BPH and urinary tract infections (UTIs) are the principal goal of the remedy. The patient was treated with Lithotripsy, antibiotics, alpha-blockers, antihypertension medications and showed clinical remission.

Keywords: Bladder stone, Benign prostate hyperplasia, UTI

INTRODUCTION

Bladder stones are a not unusual kind of urinary tract stone. Sufferers with bladder stones revel in an unexpected interruption of urination, in addition to hard to urinating and having a urinary retention.¹ The process of the secondary stone takes place mostly in aged men because of benign prostatic hyperplasia. The making of a massive stone happens over a progressive time and it could be worsening through synchronously critical infections, that need a surgical procedure to remove the stone.²

Bladder stones commonly affect to men above 45 years old. The stone formation specifically contains of calcium oxalate and uric acid. Bladder stones also can expand in gout arthritis or UTIs. Some stones were made from the stagnates urine inside the bladder as in enlarged prostate. Even though mainly consist of those materials, there are many varieties in different regions because of many risk factors, which includes genetic inheritance, nutritional, socio-financial factors, and climate.¹

In latest years, the case of bladder stones is growing. This could be related with family genetic, metabolic illnesses,

bladder obstruction, and different environment elements.² Patients with excessive or a couple of stones would possibly increase small percentage developing to sepsis, which can result in a septic shock.⁷ Among all UTI, the most extreme complication is pyelonephritis.⁶

CASE REPORT

A 74 years man came to Wangaya emergency room with chief complaint blood in urine. Patient have 3 months history of urinary tract symptoms such as nocturia, urgency and frequency. This patient also complaint hematuria appears since 3 days ago. This patient also mentioned the urine become muddy. The man said he never have any trauma, and other lower urinary tract symptoms such as urinary stream interruption, pain while urinating, urine retention and urine incontinence, except nocturia, urgency and frequency. This patient has no sign of abdominal pain. This man was a smoker since 20 years ago and smoked around 10 cigarettes each day.

Physical examination showed a blood pressure of 160/98 mmHg, 90 beats per minute, rate of respiratory was 18 times per minute, body temperature of 36.5° C, oxygen

saturation level of 98% on room air. On the costovertebral angle tenderness exam, the patient doesn't feel pain. His suprapubic area was hard on palpation.



Figure 1: Abdominal X-ray of the patient.

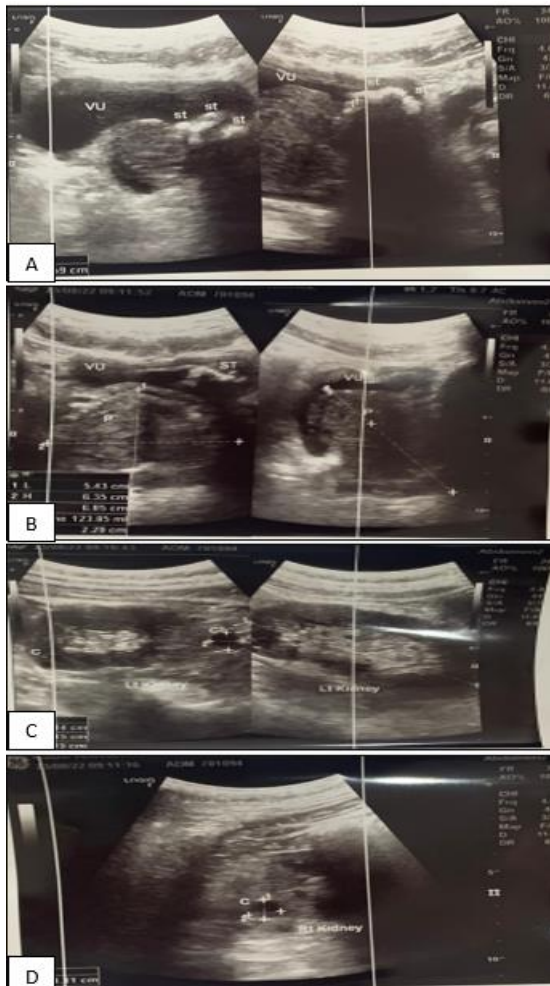


Figure 2 (A-D): Ultrasound of the patient.

The laboratory examination results were white blood cells $6.60 \times 10^3/\mu\text{L}$, haemoglobin level 12.7 g/dL, haematocrit 39.4%, platelet count $209 \times 10^3/\mu\text{L}$, AST 10 U/L, ALT 19 U/L, BUN 35 mg/dL, serum creatinine 1.0 mg/dL, uric acid 4.9 mg/dL, random blood glucose 137 mg/dL;

sodium 138 mmol/L, kalium 3.5 mmol/L, chloride 96 mmol/L.

The abdominal X-ray of the patient showed an opaq stone in the bladder. An ultrasound scan showed a multiple bladder stone with the longest stone 1.59 cm in size. Bilateral kidney cyst and the prostate was enlarged with volume ± 123.85 cc, IPP 2.29 cm. The diagnosis of bladder stone, BPH and hypertension were made. The patient received treatment of intravenous ceftriaxone 1 gram BID; oral tamsulosin 0.4 mg OD; oral Amlodipin 10 mg OD.

DISCUSSION

Bladder stone are not an usual condition that affecting around 6% of urinary stone. Bladder stones commonly affect to men above 45 years old affecting men older than 45 years old. The stone formation specifically contains of calcium oxalate and uric acid. Bladder stones also can expand in gout arthritis or UTIs. Some stones were made from the stagnates urine inside the bladder as in enlarged prostate. Even though mainly consist of those materials, there are many varieties in different regions because of many risk factors, which includes genetic inheritance, nutritional, socio-financial factors, and climate.¹

Patient with benign prostatic hyperplasia often complicating into bladder stone and the occurrence is around 10%. Patients with bladder stone not only having an increased pain and medical cost, but also increasing the risk of bladder cancer. Clinical features in patient with BPH usually causing lower urinary tract symptoms.⁴ Lower urinary tract symptoms consist of storage symptoms such as urgency, nocturia, frequency and voiding symptoms such as stream, straining, hesitancy, prolonged micturition. This symptom can assist to specify other reasons of the urinary tract symptoms such as infections, and to figuring out the location that was affected (bladder or prostate).⁸ In this case report the diagnosis of BPH were made from the history taking with urinary tract symptom complain such as nocturia, frequency and urgency complain.

Usually, bladder stones formed in the bladder, but some stone formed inside the other urinary tract such as kidneys and then drop toward bladder, that induce tenderness or colic in the ureter. Clinical manifestations in patient with bladder stones may be asymptomatic, or causing urgency and frequency of urinating, aches during micturition or bloody urine (haematuria). These manifestations usually appear when the stones grow too big, especially if the stone get stuck in urethra, the stone will cause dysuria and hard to urinating.¹ If this stone was ignored, the stones can injure the bladder wall and lead to UTI due to urease-producing bacteria.⁶ In this case report the diagnosis of bladder stone were made from the history taking with chief complaint blood in urine and 3 months history of urinary tract symptom such as frequency and urgency complain. The patient also mentioned the urine become muddy. In

the physical examination also founded his suprapubic area was hard on palpation.

Cases of bladder stones are common in growing nations and poor regions. Many patients postpone the medication for the signs and symptoms and ended up to bladder stones. Bladder stones are often diagnosed as UTI.⁵ UTIs are most common infections, with cases reaching millions of people annually in the world. UTIs can be caused by negative gram bacteria, positive gram bacteria, and by fungus. *Escherichia coli* is the most common uropathogenic in causing UTI.¹⁰

Based on clinical manifestation, UTI are divided as non-complicated or complicated UTI. Non-complicated UTIs usually found in healthy individuals and no urinary tract. This infection is divided into lower UTI (cystitis) and upper UTI (pyelonephritis). The clinical manifestations of UTI are divided into local, systemic symptoms and urinalysis changes. In daily practice the symptoms such as dysuria, pollakiuria, and urgency are often found in almost 90% of patients with acute UTI. On diagnostic physical examination, severe pain on abdomen, intermittent fever accompanied with pain at the costovertebral angle appeared.^{9,3} Usually uncomplicated UTI will heal without remedy, but most patients seek therapy to relieve symptoms.^{9,3}

Laboratory testing is important for the diagnosis and therapy of infection stones. Urine analysis often showing a pH 7.0, founded bacteria, leukocyte, and micro hematuria, coffin-shaped crystals in sediment. If possible, the patient should do urine culture to diagnose from urease-producing bacterial strains which are typically associated with stones.³ In this case report the patient didn't get urinalysis because in laboratory tests, no increase in serum creatinine was found, indicating that the disease was not of nephrology but of urology.

In bladder stone, imaging can show the size, number, morphology and the location of the stones. Plain abdominal imaging, ultrasonography and CT scans are the common imaging tools. Bladder stone morphology usually shaped as branched or staghorn calculi that are radiopaque on X-ray.³ In this case report, the abdominal X-ray of the patient showed an radiopaque stone in the bladder. An ultrasound scan showed a multiple bladder stone with the longest stone 1.59 cm in size. Bilateral kidney cyst and the prostate was enlarged with volume ± 123.85 cc, IPP 2.29 cm, in accordance with the symptoms that leads to suspicion of bladder stone and BPH in the patient

The goal of the treatment is to prevent the disease spreading to the kidneys or progressing to damage the fine structures in the nephrons and eventually lead to hypertension. Complete stone removal is the main

objective of treatment. Eliminating the current infection only allowed after the stone was completely eliminated, because the stones possess bacteria and still growing despite antibiotic therapy.¹ There are many stone removal option such as pyelolithotomy percutaneous nephrolithotomy, partial nephrectomy, anatomic nephrolithotomy, and retrograde ureteroscopic. The selecting therapy depends on the size, number and, site of stones. Lithotripsy usually used as monotherapy to completely eliminate the bladder stones.^{1,5} In this case report the patient underwent lithotripsy for bladder stones removal.

CONCLUSION

Bladder stones are an unusual kind of urinary stone. The relation among urinary stone and UTI is developing. Accurate therapy of bladder stones and risk factors needs to be executed to prevent complications and repeated occurrence of the bladder stone.

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