

## A CASE REPORT ON VESICAL CALCULUS

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**ABSTRACT**

Bladder stones (vesical calculus) are the stones or calcified materials that are present in the bladder. These bladder stones are the hardened clumps of minerals that form in the bladder they may pass on their own or need to remove by a procedure. The bladder stones are most common in males over the age of 50 years, and rare in females. Some underlying medical conditions are one of the cause, presence of vesical calculus may be the cause of blood in urination. The symptoms include discomfort or pain in the penis for males, more regular urination or a stop-start flow, pain loin region that radiates to groin may or may not be associated with vomiting, burning micturition, and haematuria, dark coloured urine associated with smell. Management includes medical and surgical procedure that depends on the size of the calculi.

**KEYWORDS:** Bladder stone, vesical calculi, cystoscopy, pyelogram, kidney stones, bladder inflammation.**INTRODUCTION**

Bladder stones (vesical calculus) are the stones or calcified materials that are present in the bladder. These bladder stones are the hardened clumps of minerals that form in the bladder they may pass on their own or need to remove by a procedure.

Some bladder stones pass out of the body with urine and don't cause any symptoms. Large bladder stones can irritate the bladder and cause severe pain, bleeding, and problems urinating.

Types of bladder stones:

1. Mixed and most common
2. Calcium oxalate stones
3. Uric acid stones
4. Triple phosphate calculus
5. Cysteine calculus

**Signs and symptoms include**

- **Changes in urine color:** may have cloudy or dark urine, or may see blood in your urine.
- **Frequent need to urinate:** may feel like you always need to pee, even if just went.
- **Pain:** With bladder stones, it's common to feel pain or burning when urinating. May also feel pain that comes and goes in the lower part of the abdomen (belly). Men sometimes feel pain in the penis or testicles.
- **Stopping and starting:** may have a difficult time starting the flow of urine, even if you really have to

go. Sometimes the urine stream stops and starts (urinary intermittency).

- **Urinary tract infections:** Bladder stones can lead to infections of the urinary tract (UTIs). UTI symptoms include frequent, painful urination as well as cloudy, smelly urine.

**Causes**

**Neurogenic bladder:** If the nerve that run between the bladder and nervous system are damaged for instance in a stroke or spinal injury, the bladder may not empty fully and causes bladder calculi.

**Prostate enlargement:** If the prostate is enlarged, it can cause a pressure on the urethra that may lead to disruption in flow, leaving some urine in the bladder.

**Medical device:** bladder stones can be caused by catheters or other medical devices if that may move to the bladder.

**Bladder inflammation:** infections like UTI or radiation therapy can cause the bladder enlarged.

**Kidney stones:** kidney stones can migrate down to the ureters if too large to pass that will remain in the bladder and cause bladder obstruction that are more commonly bladder stones.

Bladder diverticula: Pouches can form within the bladder that grow large in size, they can hold the urine and prevent the bladder from being emptied.

Cystocele: In women the bladder wall can become weak and drop down to the vagina this can affect the flow of urine from the bladder.

#### Risk factors

Age and gender: vesical calculus is more common in males above 50 yrs of age compared to females.

Paralysis: People with severe spinal injury and loss of muscle (detrusor muscle) control in pelvic region are unable to empty their bladder completely.

Bladder outlet obstruction: Any condition that blocks the flow of urine from the bladder to outside world. For example the most common is enlarged prostate.

Bladder augmentation surgery: a type of surgery carried out to treat urinary incontinence in women can lead to bladder stones.

#### Complications

Chronic bladder dysfunction: frequent urination that is painful and uncomfortable, that can completely block urine outflow from the body.

Urinary tract infections: repeated urine infections.

#### Diagnosis

Physical examination: on examination of the loin region and lower abdomen felt the bladder if enlarged.

Urine analysis: a urine sample test for signs of blood, bacteria and crystalized minerals.

Computerized tomography, Ultrasound, X-ray images to build up the detailed information of internal organs and the size of bladder stone or calculi.

Intravenous pyelogram: A special fluid is injected into the veins that travels to the kidney and bladder, X-rays are taken throughout the procedure to look the signs of kidney or bladder stones.

#### Management

The only potentially effective medical treatment for bladder calculi is urinary alkalization for the dissolution of uric acid stones. Stone dissolution may be possible if the urinary pH can be raised to 6.5 or higher. Potassium citrate 60 mEq/day is the treatment of choice.

#### Modalities

Lithotripsy, Percutaneous suprapubic litholopaxy, cystoscopy laser lithotripsy.

#### CASE REPORT

A male patient of 55 years was reported in urology department with a chief complaints of burning micturition since 1 month, patient was apparently normal one month back and then had a history of poor urinary stream, urine urgency, and history of lower abdominal pain. The pain was initially started at the left loin and gradually radiating to the groin, patient presented difficulty in walking, and Pain was more on urination. The patient had a history of hypertension since 6 yrs on regular treatment with T. Amlodipine (5mg) + Atenolol (50mg).the patient was advised with some lab investigations it reveals as follows: CT KUB-Vesical calculus(42\*33mm) in lumen of bladder small umbilical hernia, sub pleural nodule in lateral basal segment of left lower lobe. Prothrombin time-13.5 sec, INR-1.20, Serum creatinine-0.68mg/dl, RBS-126 mg/dl, Urine culture- No bacterial growth on culture, CBP (HB-13.5 g/dl, WBC-11500 n/ul, N-55%, L-35%, M-4%, Platelet count-4.15L/cumm.), Blood grouping test-O-positive and tests. Based on the test reports the patient was advised for a surgical procedure to remove the bladder calculi. Preoperative cardiac risk assessment was done before surgery reveals as low risk for surgery. CLT/PCCLT (open cystolithotomy under surgical anesthesia) was done on preoperative care patient preparation after NBM (nothing by mouth) for 8 hours. Post -operative care includes treatment with IV fluids Normal saline/DNS 120ml/hr, Ceftriaxone injection 1.5gm/IV/OD, Tramadol injection 100 mg/IV/TID, Pantoprazole injection 40mg/IV/OD, Ondansetron injection 4mg/IV/SOS and finally to monitor temperature, BP vitals along with urine output and input. The patient was stable after the surgery and after 3 days stopped injections and IV fluids then treated with oral tablets.



#### DISCUSSION

Bladder stones (vesical calculus) are the stones or calcified materials that are present in the bladder. These bladder stones are the hardened clumps of minerals that form in the bladder they may pass on their own or need to remove by a procedure. The bladder stones are most common in males over the age of 50 years, and rare in females.

In this study we note that due to hypertension and age, gender related risk for bladder calculi. In this case the primary goal was to decrease the spread of infection and pain, achieved by surgical procedure along with the medical management. The pain was treated by the administration of pain relievers like INJ.Tramadol /100mg/TID.

The result obtained from this study ensure that the treatment followed and surgical procedure for vesical calculi the complete stone clearance was achieved. Reduces the infection spread and may not lead to the further complications.

## CONCLUSION

In this study we conclude that the open cystolithotomy/PCCLT are most useful method for the vesical calculus and bladder stone removal, to reduce the urinary tract infection and further complications. The result showed that complete stone clearance was achieved and further managed with medications. The patient was hemodynamically stable at the time of discharge, The patient was counselled regarding diet, medication, life style modifications like: To have a lots of fruits and vegetables that provide magnesium, potassium, fiber, citric acid that reduces stone risk watermelon, papaya, and cauliflower. Sufficient calcium about 100mg/day (milk, cheese). Avoid foods containing excess of oxalate (spinach, dark chocolates, black tea, sweet potato), salt-restricted diet, limit intake of proteins, to drink plenty of water lemon and orange juice. Avoid stress. Review after 1 week to urology department if the symptoms persists and this study was conducted in our tertiary care teaching hospital.

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