

Bilateral seminal vesicle calculi: A case report

Sushant Deole¹, Vikram Prabha², R B Nerli², Priyeshkumar Patel¹, Shridhar C Ghagane³

From ¹Resident, ²Professor, Department of Urology, Jawaharlal Nehru Medical College, KLE Academy of Higher Education and Research (Deemed to be University), Jawaharlal Nehru Medical College Campus, Belagavi, Karnataka, India, ³Research Scientist, Department of Urology, KLES Kidney Foundation, KLES Dr. Prabhakar Kore Hospital and Medical Research Centre, Belagavi, Karnataka, India

Correspondence to: Dr. Vikram Prabha, Department of Urology, Jawaharlal Nehru Medical College, KLE Academy of Higher Education and Research (Deemed to be University), Jawaharlal Nehru Medical College Campus, Belagavi - 590 010, Karnataka, India.
E-mail: drvinayalanjewar@gmail.com

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ABSTRACT

Seminal vesicle calculi are rare and so usually remain undiagnosed. Most of the patients with seminal vesicle calculus present with hematospermia, ejaculatory pain, perineal or testicular pain, or low volume of ejaculate. Hematospermia is the most common symptom present in 70% of the cases. Patients may have ejaculatory ductal obstruction secondary to bilateral seminal vesicle calculi and may present with impaired fertility and azoospermia. We present the case of a 41-year-old male who presented with ejaculatory pain of 6 months duration. On evaluation with ultrasonography and magnetic resonance imaging, a diagnosis of bilateral seminal vesicle calculi was made. The patient underwent bilateral transutricular seminal vesiculoscopy with laser lithotripsy.

Key words: Calculi, Laser lithotripsy, Seminal vesicle, Transutricular seminal vesiculoscopy

Seminal vesicles are paired accessory glands of the male genitourinary system located dorsally to the bladder, inferolateral to the vas deference, and posterior to the prostate. Seminal vesicle calculi are rare and till date, approximately 213 cases are reported between 1928 and 2016 [1]. The etiology of seminal vesicle calculus is unclear. Patients may remain asymptomatic and most symptomatic patients complain of hematospermia or ejaculatory pain. Spermolithiasis in which patient complains of passing stones in semen is rare [2,3]. Patients who have bilateral seminal vesicles may have altered fertility.

Transrectal ultrasound (TRUS) screening has been helpful in evaluating patients to detect seminal vesicle calculi. Patients are usually evaluated by non-invasive techniques such as ultrasonography, TRUS, and magnetic resonance imaging (MRI). Earlier patients were managed by open vesiculectomy which was associated with significant morbidity due to the need of extensive pelvic dissection [4]. Recent treatment modalities include minimally invasive techniques such as transutricular vesiculoscopy with or without laser lithotripsy [5-8]. Laparoscopic or robotic vesiculectomy is reserved for larger seminal vesicle calculi [9].

CASE REPORT

A 42-year-old male came to the urological services of the hospital with complaints of ejaculatory pain of 6 months duration and a single episode of hematospermia. There were no hematuria, urinary complaints, or history of urinary tract infections (UTI). There was no other medical or surgical history. There was no

history of stone disease in the family. He is non-diabetic. He is married for 17 years and has two children.

The patient had a pulse rate of 82 bpm and blood pressure was 120/80 mmHg. The general physical examination was normal. Clinical examination revealed normal external genitalia and digital rectal examination showed normal prostate.

Routine blood investigations such as renal profile, serum calcium, and parathyroid hormone levels were normal. Routine urine analysis was normal. Semen analysis was normal as per the World Health Organization criteria 2010 [10]. USG showed bilateral seminal vesicle calculi 8.5 mm on the right side and 5 mm on the left side (Figs. 1a and b). MRI of the pelvis was ordered which showed mildly bulky bilateral seminal glands with hemorrhagic contents. Ill-defined T2 hypointense calculus in the terminal portion of the right seminal vesicle duct measuring 8.1 mm × 4.7 mm and T2 hypointense calculus in the terminal portion of the left seminal vesicle duct measuring 6 mm × 3.6 mm (Figs. 2a and b). On the basis of USG and MRI, a final diagnosis of bilateral seminal vesicle calculi was made and the patient was planned for surgery with the informed consent of the patient.

The patient was given spinal anesthesia and put in the lithotomy position. A 4.5 Fr semi-rigid ureteroscope was introduced till verumontanum. A bilateral prostatic utricle was identified and sequentially cannulated with guide wire. Ureteroscope was then introduced into the prostatic utricle till calculus was visualized. The calculus was fragmented using a holmium laser (Lumenis, MOSES 120 H, Germany) (Figs. 3a and b). The patient made an uneventful recovery. On follow-up, the patient had a few episodes of passing fragments of calculi in semen which stopped after

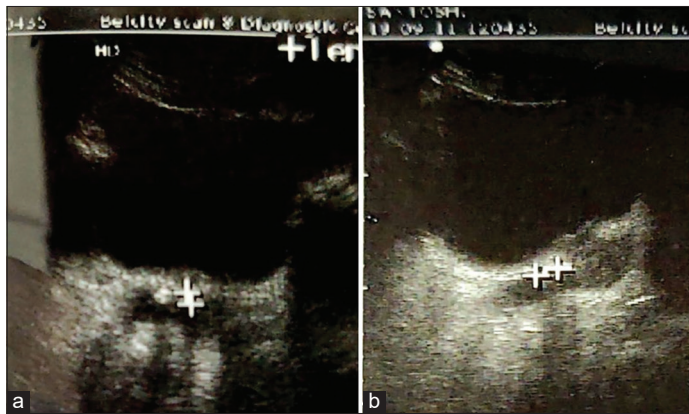


Figure 1: Ultrasonography showing (a) dilated left seminal vesicle and hyperechoic calculus with posterior shadow measuring 5 mm; (b) dilated right seminal vesicle and hyperechoic calculus with posterior shadow measuring 8.5 mm

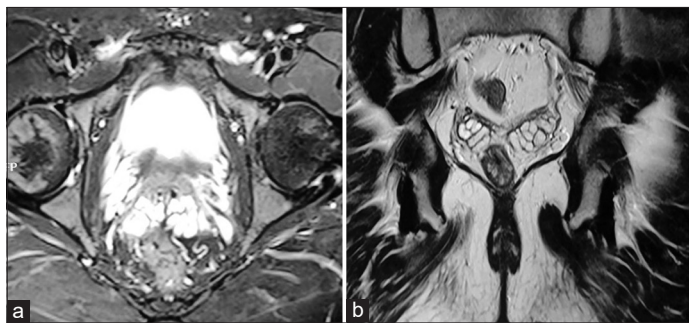


Figure 2: (a and b) Magnetic resonance imaging pelvis showing bulky bilateral seminal vesicles with hypointense calculus in terminal portion of the right seminal vesicle duct measuring 8.1 mm × 4.7 mm and another hypointense calculus in terminal portion of the left seminal vesicle duct measuring 6 mm × 3.6 mm

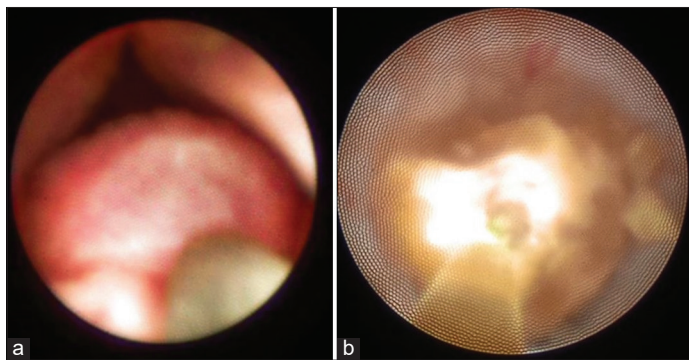


Figure 3: (a) Endoscopic view showing guide wire being passed into prostatic utricle before vesiculoscopy, bilateral lateral lobes of prostate seen; (b) intraoperative picture showing calculus being fragmented using holmium laser

2 weeks. Since then, there are no episodes of ejaculatory pain or hematospermia.

DISCUSSION

In 1928, White reported the first case of the seminal vesicle calculus [5]. The etiopathogenesis remains unclear. Probable causes include impaired drainage of the seminal vesicle, chronic prostatitis, chronic UTI, diabetes, seminal vesicle cyst or tumors,

reflux of urine in the ejaculatory duct, ejaculatory duct obstruction, and congenital anatomical abnormalities [2,4,11]. Lotti *et al.* [12] found that patients with ultrasonographic abnormalities such as ejaculatory duct dilatation, calcification, and giant seminal vesicle cyst showed decreased seminal vesicle ejection fraction. Furthermore, patients were found to have chronic prostatitis or chronic UTI.

Fourier-transform infrared spectrometry of semen analysis of patients usually tests positive for blood with the presence of organic material mainly protein. The nuclei of seminal vesicle calculus have epithelial cells and mucoid substances covered by lime salts [5]. Menon *et al.* [3] found that most of the calculi are coated with calcium phosphate, phosphate, urate, carbonate, and struvite. However, Hepburn and Yount [13] did not find any abnormality in the urinalysis of the calcium-coated calculi. Yang *et al.* [7] found that 16.2% of patients presenting with hematospermia had seminal vesicle calculi, whereas subfertility was secondary to seminal vesicle calculi causing ejaculatory duct obstruction.

Ultrasonography is the gold standard for the evaluation of seminal vesicle [12] with an increasing use of TRUS. The use of MRI is increasing being non-invasive as compared to antegrade seminal vesiculogram. The use of minimal invasive techniques such as transutricular seminal vesiculoscopy with ureteroscopes with laser lithotripsy is a common practice in Asia which is not approved in the UK. Xu *et al.* [14] used a 9 Fr rigid ureteroscope and found gaining entry into seminal vesicle difficult and need of excessive force which could damage tissues. We used 4.5 Fr semi-rigid ureteroscope in our case. In the case of larger stones, the laparoscopic or robotic approach is a better option.

CONCLUSION

Seminal vesicle calculi are rare. Most cases are identified by non-invasive methods such as TRUS, USG, or MRI and so invasive techniques such as seminal vesiculogram are rarely done. Treatment protocols depend on the size and location of calculus and each treatment protocol has been proven effective with no recurrences. Transutricular seminal vesiculoscopy has made the treatment of smaller calculi less morbid.

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