

A Large Stone in the Dilated Left Seminal Vesicle: Laparoscopic Removal and Partial Seminal Vesiculectomy

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Stones in the seminal vesicle are extremely rare. We report a case with a large stone in a dilated seminal vesicle. A 20-year-old man presented with a large calcified density in the pelvic cavity on plain films. A 6.0 cm cone shaped stone was noted in the dilated left seminal vesicle diagnosed by radiological examination. We treated the patient by transperitoneal laparoscopic stone removal and partial seminal vesiculectomy. The composition of stone was carbonate apatite. This approach to the treatment of such pathological conditions of the seminal vesicles provides an additional option. (*Korean J Urol* 2008;49:656-658)

Key Words: Seminal vesicles, Stone, Seminal vesiculectomy

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Stones in the seminal vesicle are extremely rare and only a few cases have been reported in the literature. The common symptoms are painful ejaculation, low ejaculate volumes, or hematospermia, although the patient could be asymptomatic.^{1,2} Treatment requires removal of stone, usually through open vesiculectomy or transurethral endoscopic surgery.²⁻⁴ We report a case of giant seminal vesicle stone, which was treated with laparoscopic approach.

CASE REPORT

A 20-year-old man was incidentally found to have a large calcific density in the pelvic cavity on a plain film. He complained small volume ejaculate, without hematospermia, painful ejaculation and lower urinary tract symptoms. The left seminal vesicle was palpated as a hard mass on the digital rectal examination. Urinalysis, cytology and urine culture were normal. Pelvic radiography showed a large oval shaped radiopacity at the left pelvic cavity (Fig. 1). CT scan confirmed the presence of a large stone in the left seminal vesicle (Fig. 2). Urethrography revealed reflux of contrast into the left seminal vesicle (Fig. 3). On cystourethroscopy, the orifice of left ejaculatory duct was located at the lateral side of the

verumontanum and was widely opened. Urethroscope was advanced into the orifice where small portion of yellowish stone was visible, but the space was too narrow to manipulate.

We offered the patient the laparoscopic approach for the stone removal and reduction of the dilated left seminal vesicle wall. The patient was submitted to transperitoneal laparoscopy, with



Fig. 1. Plain film shows a large calcified density in the pelvic cavity.



Fig. 2. CT scan demonstrates a large stone in a dilated left seminal vesicle.

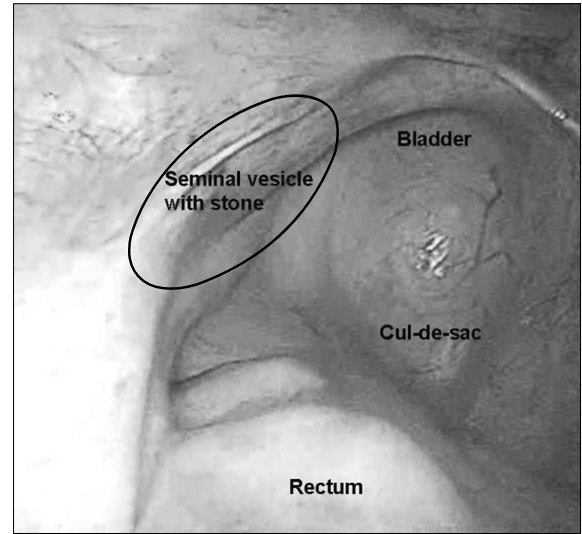


Fig. 4. Laparoscopic view of the cul-de-sac and associated organs.



Fig. 3. Retrograde urethrogram reveals reflux into the left seminal vesicle with the stone.

the camera placed at the umbilicus, and 4 auxiliary ports (11 mm at the lateral border of the rectus muscle, a 5 mm port on the iliac fossa). Under direct vision of Cul-de-sac, enlarged left seminal vesicle, bladder and rectum were identified (Fig. 4). The retrovesical peritoneum was incised transversely, and the seminal vesicle was easily identified. It was dissected medially to the ampullae, then the stone was removed by incision of the seminal vesicle. The dilated wall was dissected and excised at the level of the one third of proximal seminal vesicle.



Fig. 5. Removed stone and the dilated left seminal vesicle wall.

Remained vesicle was closed by several figure-of-eight sutures. The stone and excised seminal vesicle wall was extracted through the extended 11 mm trocar site incision (Fig. 5).

The total operative time was 120 minutes, and estimated blood loss was 70 ml. A transurethral Foley catheter was kept for 5 days and removed. The patient was discharged from the hospital on the seventh postoperative day without any complaints or complications thereafter.

The stone was 6.0x3.5x3.5 cm sized, and composed of carbonate apatite. A significant size reduction of left seminal vesicle was observed on postoperative 1 month vasogram (Fig. 6). At the 18 months' follow-up, no evidence of recurrence was noted.



Fig. 6. Postoperative vasogram shows the decreased size of the left seminal vesicle without the stones or leak.

DISCUSSION

Since the first report of seminal vesicle stone in 1928, only few cases have been reported. It usually occur in adult but some reported in children,^{5,6} and has often been related to the urinary tract infection, anomalies, obstruction, or reflux into the ejaculatory duct.⁷⁻⁹ These calculi may be asymptomatic or symptomatic such as perineal and testicular pain, hematospermia, painful ejaculation and infertility.^{1,10}

Because of extremely rare disease entity, the pathogenesis of stone formation in seminal vesicle is not clear. Some cases showed that the orifices of seminal vesicle were dilated size enough to advance endoscope into the vesicles.^{3,4} This means that the urine reflux into the seminal vesicle might be associated with pathogenesis of the disease. In this case, the reflux from urethra to seminal vesicle was also seen in the retrograde urethrogram. And the composition of stone was carbonate apatite, known as one of the infection stones. So, we believe that infection and urine stasis in the seminal vesicles were the causative pathologies of stone formation.

The seminal vesicle is a difficult organ to access. Although several open surgical approaches have been described to treat pathologic lesions of the seminal vesicles, all have inherent shortcomings and require a significant incision for access.

Recently, transurethral endoscopic approach described an alternative to standard surgical treatment.^{3,4} But those cases were usually small sized (less than 3.5 cm) stones, and did not undergo correction of the dilated seminal vesicle. In the present case, the stone was single and the largest among the previous cases, and had dilated seminal vesicular wall. Transurethral approach was not only too narrow to eliminate huge stone but also impossible to remove the dilated seminal vesicle. Introducing laparoscopy for the management of seminal vesicle cyst has been previously reported. Recently, small stone within the seminal vesicle cyst was successfully removed by laparoscopic approach. This approach could permit either stone removal or anatomical correction of the seminal vesicle. Therefore, we believe that the laparoscopic approach may be the best method for the management of similar cases to ours.

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