Laparoscopic Approach of a Seminal Vesicle Cyst

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Abstract

Introduction and Objectives. A seminal vesicle cyst is a very rare diagnosis, with a reported prevalence as low as 0.005% The cysts are usually congenital, a coexistence with Zinner syndrome being described (renal agenesis, ectopic ureteral orifice in the prostatic urethra or seminal vesicle and vas deferens stenosis). The aim of this paper is to present the management of a rare case of an acquired seminal vesicle cyst with normal upper urinary tract anatomy.

Materials and Methods. A 33-yrs old male patient presented with chronic pelvic pain associated with dysuria and frequency. The ultrasound identified a right regular hypoechoic mass without Doppler signal. The imagistic diagnosis was sustained by computed tomography, revealing a high-volume (84/65/74 mm) inseparable mass from the right seminal vesicle, without contrast enhancement. The surgical approach was minimally invasive, represented by laparoscopic excision of the right seminal vesicle cyst. The patient was placed in Trendelenburg position and 4 trocars were inserted (a 12 mm optic trocar inserted 1 cm above the umbilical fold, 2 other trocars, one of 5 mm and one of 10 mm bilaterally between the umbilicus and the anterior iliac crest, and one of 5 mm on the midline below the umbilicus). A transperitoneal technique was used in order to identify the vas deferens, which guided the dissection to the cystic mass. Further, the right seminal vesicle and the cystic mass were detached from adjacent pelvic structures. The contents of the cyst were evacuated and the cystic wall was resected, the specimen removed through the 10 mm trocar.

Results. The operation time was 100 minutes, with minimal blood loss. The postoperative period was uneventful and the patient was discharged on the third postoperative day, with no complications during follow-up. The pathological analysis of the specimen emphasized hyalinized fibrous tissue, ducto-acinar and seminal epithelial structures, with no evidence of malignancy.

Conclusions. The proper management of seminal vesicle cyst is represented by laparoscopic excision. Whenever possible, the minimal invasive approach should be used, due to better postoperative outcomes regarding morbidity and convalescence, in comparison with open techniques.

Key-words: Acquired seminal vesicle cyst, minimally invasive surgery, laparoscopic excision.

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Introduction and Objectives

A seminal vesicle cyst is a very rare diagnosis, with a reported prevalence as low as 0.005%. The cysts are usually congenital, a coexistence with Zinner syndrome being described (renal agenesis, ectopic ureteral orifice in the prostatic urethra or seminal vesicle and vas deferens stenosis) due to their common embryological origins. In most cases vesicle cyst are asymptomatic, but symptoms such as perineal pain, hematospermia, painful ejaculation, abnormal micturition or dysuria have been described [1]. The aim of this paper is to present the management of a rare case of an acquired seminal vesicle cyst with normal upper urinary tract anatomy.

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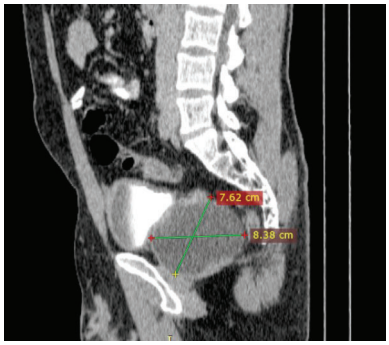
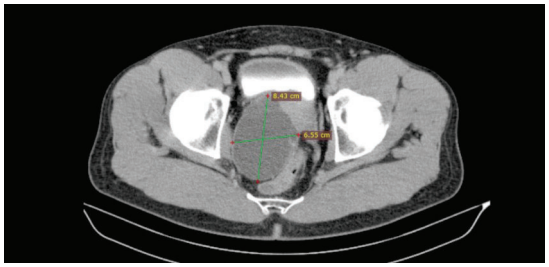


Figure 1: CT scan of the seminal vesicle cyst



Materials and Methods

A 33years old male patient presented with chronic pelvic pain associated with dysuria and frequency for approximately 18 months. During his workup, the physical examination revealed a soft globular mass located above the prostate on digital rectal exam. The abdominal ultrasound identified a right retrovesical regular hypoechoic mass with a smooth wall, without Doppler signal. Also both right and left kidneys were present in their anatomical position having a normal ultrasound aspect. The subsequent computed tomography revealed a high-volume (84/65/74 mm) non contrast enhancement mass, inseparable from the right seminal vesicle.



Figure 2. Incision of vesicorectal recess

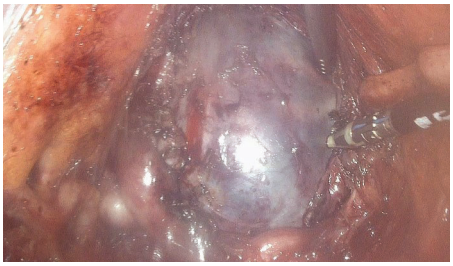


Figure 3. Dissection of the cystic mass

We decided to perform a laparoscopic excision of the right seminal vesicle cyst by transperitoneal access. The patient was placed in Trendelenburg position and 4 trocars were inserted (a 12 mm optical Trocar inserted 1 cm above the umbilical fold, 2 other trocars, one 5 mm and one 10 mm bilaterally between the umbilicus and the anterior iliac crest and one of 5 mm on the midline below the umbilicus).

After the vesicorectal recess was incised, we identified the vas deferens that guided the dissection to the cystic mass (Figure 2). Further, the right seminal vesicle and the cystic mass were carefully detached from adjacent pelvic structures (Figure 3). We tried keeping the mass intact in order to facilitate the blunt dissection by peeling the walls of the cyst away from the bladder and the right ureter. The cyst was incised and a serous citrine content was evacuated. After a careful endocavitary inspection we observed no signs of malignant transformation of the lesion (Figure 4), therefore the cystic wall was resected (Figure 5), and the specimen removed through the 10 mm trocar. In order to avoid significant blood loss, a surgical hemostatic material was placed in the Douglas pouch. A drain tube was positioned and the peritoneum overlying the Douglas pouch was sutured (Figure 6).



Figure 4. Endocavitary inspection

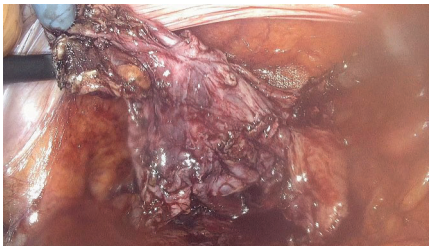


Figure 5. Resection of the cystic wall

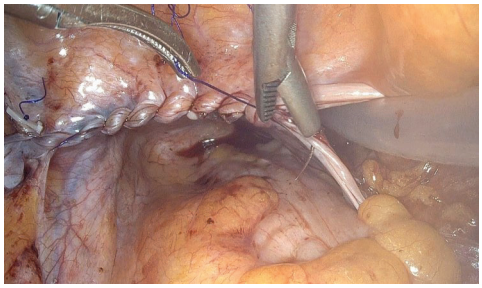


Figure 5. Resection of the cystic wall

Results

The operation time was of 100 minutes. Blood loss was approximately 130 ml. The postoperative period was uneventful and the patient was discharged on the third day. No distant complications were observed during follow-up period. The pathological analysis of the specimen revealed hyalinized fibrous tissue, duct-to-acinar and seminal epithelial structures, with no evidence of malignancy.

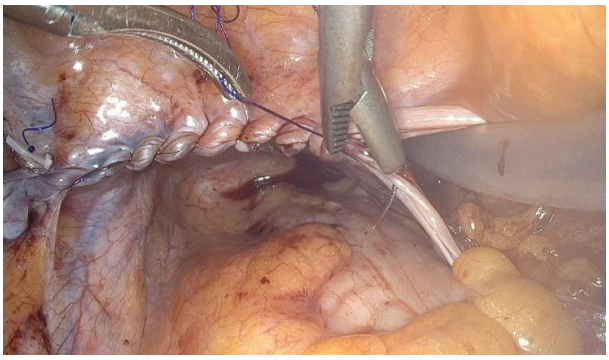


Figure 6: Suture of the peritoneum overlying the Douglas pouch

Discussions

A seminal vesicle cyst is a very rare diagnosis, with a reported prevalence as low as 0.005% in men of all ages [1]. Due to the fact that many patients are asymptomatic, cystic anomalies of the seminal vesicles are likely underreported (2). The cysts can be congenital or acquired, and either type can become symptomatic. In the case of congenital cysts, a coexistence with Zinner syndrome has been described (where the vesicle cyst are associated with renal agenesis, vas deferens stenosis, and an ectopic ureteral orifice in the prostatic part of the urethra or seminal vesicle [3]). The Zinner Syndrome results from an anomaly of development of the distal portion of the mesonephric duct occurring between the 4th and the 13th gestational weeks [4]. Whereas congenital cyst are usually unilateral, acquired cysts are often bilateral and encountered in older patients with a history of chronic prostatitis or pervious prostate surgery [5]. This condition occurs due to insufficient drainage of the vas deferens, when spermatozoa can accumulate in the seminal vesicles leading to the cyst formation [5].

The majority of small seminal vesicle cysts (< 5 cm) are usually discovered incidentally as they are asymptomatic. Symptoms often appear after this diameter is exceeded (perineal pain, hematospermia, painful ejaculation, abnormal micturition or dysuria), giant 12 cm cysts (containing up to 5 L of fluid) determining severe complications like bladder, rectal or ureteral obstruction [6,8].

The differential diagnosis of pelvic cystic mass should include ejaculatory duct diverticulum, ureterocel, prostatic cyst or abscess, rectal duplication, anterior myelomeningocele, degenerated leiomyoma of bladder, Müllerian cystic duct, rudimentary or ectopic hydronephrotic pelvic kidney and prostatic utricle cyst [9,10].

Imaging modalities for the diagnosis of seminal vesicle cysts and their relationship with adjacent pelvic structures are: vaso-vesiculography, transrectal ultrasonography (TRUS), computed tomography, magnetic resonance imaging (MRI) and cystoscopy [11]. Ultrasonography is the initial imaging method of choice, being useful for identifying both cystic pelvic structures and upper urinary tract anomalies [11]. Computed tomography helps to define the position and anatomy of the cyst preoperatively, but the similar attenuation of various organs in the pelvis makes it difficult to identify the exact nature of a lower genitourinary tract lesion. [12] MRI facilitates tissue characterization of the internal content of the seminal vesicle cyst [13]. Vaso-vesiculography can be done transrectally, transurethrally or intraoperatively. This procedure is invasive and carries the risk of vasal obstruction [14]. Cystoscopy is a useful for observing the hemitrigone, documenting the absence of the ureteral orifice on the involved side and any extrinsic mass effect on the bladder (15). Patients without clinical symptoms should not be treated and they can be monitored by ultrasonography. Symptomatic seminal vesicle cysts often need surgical treatment [16,17].

Historically, open surgical resection via transab-

dominal or transperineal approach was the standard for definitive treatment of seminal vesicle cyst. Less invasive methods, such as transrectal or transabdominal or transperineal aspirations, or transurethral unroofing, result in a temporary relief of symptoms, but have a high rate of recurrence and infections [18].

Currently, in the area of minimally invasive procedures, laparoscopic and robot assisted surgeries are considered the optimal treatment for seminal vesicle cysts of any etiology. They offer better vision, reduced blood loss, shorter hospital stay and faster recovery with an overall decreased morbidity compared to open procedures [19].

Conclusions

Seminal vesicle cysts are very rare disease and while most of the patients remain almost asymptomatic, when facing a large cysts or symptomatic patients, the proper management is represented by surgical excision. Whenever possible, the minimally invasive approach should be used due to better postoperative outcomes.

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