Schwannoma, a rare tumor of the seminal vesicle

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KEY WORDS

schwannoma ◗ seminal vesicle ◗ transvesical excision

ABSTRACT

We present a rare case of a schwannoma of the seminal vesicle that occurred in a 43-year-old male with symptoms of the lower urinary tract. Ultrasonography and magnetic resonance imaging documented a solid mass in the patient's left seminal vesicle. A transvesical approach with a transtrigonal midline incision was successfully performed. The microscopic aspect was compatible with schwannoma.

INTRODUCTION

Tumors of the seminal vesicle are extremely rare and most often are incidentally found [1].

Schwannoma, also known as neurilemmoma, is a slow-growing, benign tumor of the peripheral nerve sheath that is composed of Schwann cells. It is usually found in the head, neck, mediastinum, and retroperitoneum. Most of these tumors are silent and only become symptomatic with compression of the nearby structures, including nerves [2].

This tumor usually appears from the 3rd to 6th decade of life and may require surgical removal. The recurrence rate for Schwannoma is 30-40%, especially when they are in intracranial, spinal, or sacral regions and surgical excision is incomplete; however, malignant progression is rare [3].

Schwann cell tumor is caused either by mutation of the gene NF2 or by deletion of 22q chromosome. Mostly cases of schwannoma are sporadic, but 10% are associated with genetic diseases such as type-2 neurofibromatosis and Schwannomatosis,. These genetic diseases have an incidence of 1 : 40,000 – 80,000 [3].

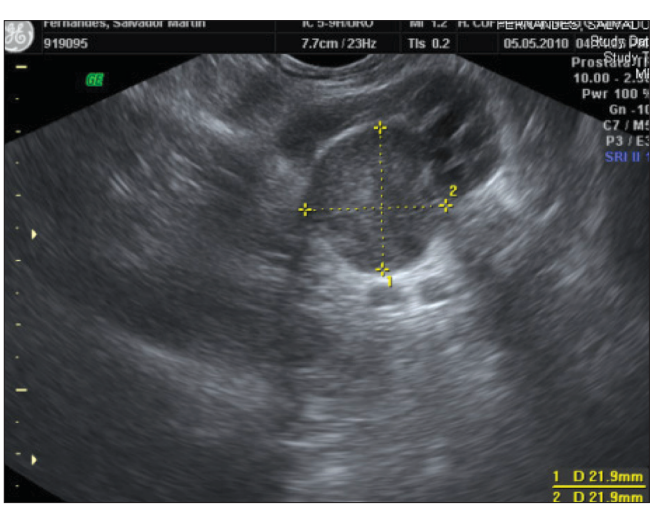

Fig. 1. Transrectal ultrasonography presenting a solid mass, measuring 21 x 21 mm on the left seminal vesicle.

CASE REPORT

A 43-year-old man with a past history (from 1-year ago) of two schwannomas excised from the muscles of the right leg and left thigh and no familial history for this type of neoplasms, presented with lower urinary tract symptoms. Digital rectal examination presented no abnormal findings. PSA was 0.85 ng/ml and uroflowmetry: Qmax. 9.9 ml/s Volume: 200 cc., post-voiding volume not measured.

Imaging studies were performed; initially transrectal ultrasonography (TRUS) followed by magnetic resonance imaging (MRI) for better characterization of the lesion. Both studies showed a solid mass, measuring 21 x 21 mm (TRUS) and 26 x 19 mm (MRI), localized on the left seminal vesicle, well defined, with a heterogeneous center and a vascularization pattern evident by captation of endovenous contrast – gadolinium (Figs. 1, 2, and 2a).

A transvesical approach with a transtrigonal midline incision was performed under general anesthesia. The left seminal vesicle was excised and digital anterior commissurotomy was done at the same time. For safety, bilateral ureteral catheterization had been performed. During the procedure the surgeon and his assistant used a surgical lens with 2.9x magnification. Complete excision of the left seminal vesicle with nerve sparing technique was the primary goal and was successfully accomplished.

Histological examination of the surgical specimen established the diagnosis of schwannoma (Figs. 3a, 3b, 3c, 3d and 3e).

The patient is asymptomatic, in the 3rd month post-operatory, presents a Qmax 28.6 ml/s and no complaints of sexual dysfunction.

DISCUSSION

Tumors of the seminal vesicle are very rare. They include primary adenocarcinomas, metastatic, contiguous, and stromal cells tumors [4]. Clinically, seminal vesicle tumors are presented by unspecific symptoms such as: bladder, ejaculatory, or intestinal (rectal) obstruction; dysuria, hematuria, or hematospermia; and/or pelvic or perineal pain, which are consequent to organ or nerve compression [5].

Schwannoma is a benign peripheral nerve sheath tumor composed of cells described by Theodor Schwann. It is a benign neoplasm, usually encapsulated and composed by spindle cells without significant atypia, arranged in fascicles. This well differentiated neoplasm is found most commonly in young and middle aged adults [3].

Schwannoma is extremely rare in the seminal vesicles and there are only four cases described in literature previously [2, 4, 7, 8].

Differential diagnosis between tumors of the seminal vesicle is ultimately made by histological analysis, either by pre-operatory biopsy or post-operatory specimen study. Recommendations are unclear regarding a decision-modifying biopsy. All cases of schwannoma of the seminal vesicle that have been reported underwent

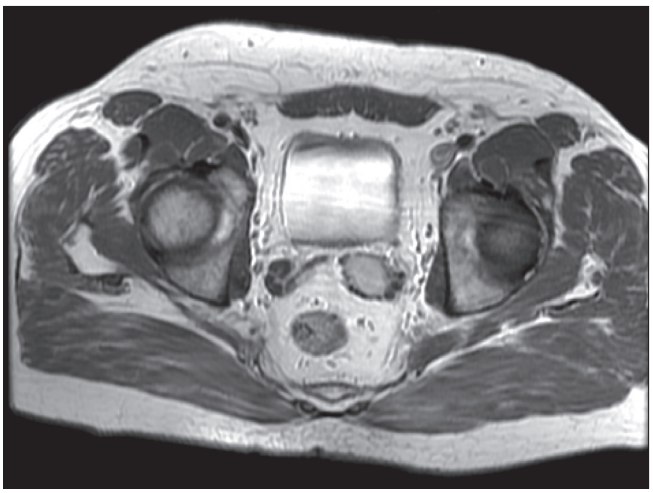

Fig. 2. Magnetic resonance imaging cross section with low to intermediate intensity on T1-weighted images, showing a mass measuring 26 x 29 mm on the left seminal vesicle.

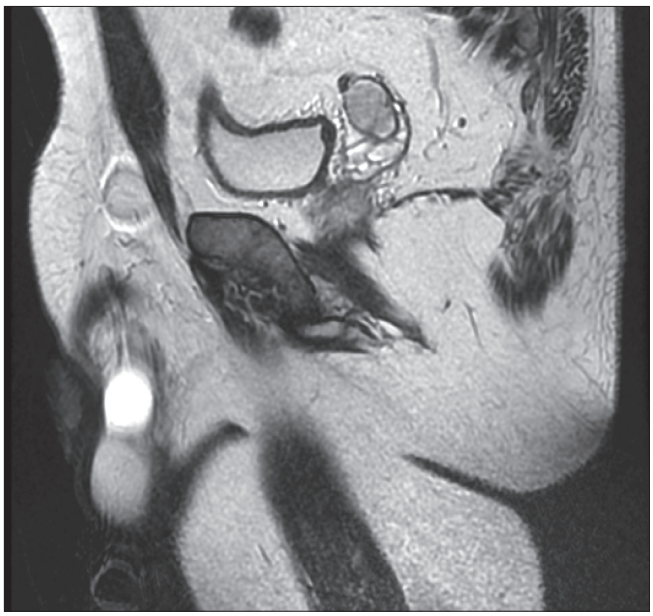

Fig. 2a. Magnetic resonance imaging parasagittal section.

transrectal ultrasound guided biopsy and surgical excision thereafter [2, 4, 7, 8]. Regardless, biopsies may be inconclusive and exploratory laparotomy/laparoscopy is usually needed [1]. In the present case, the small, solid non-invasive tumor documented in the TRUS and MRI, and the data available led us to refrain from performing a biopsy and to follow a conservative surgical approach. This decision allowed for the reduction of iatrogenic desmoplasia and, therefore, a successful nerve sparing procedure.

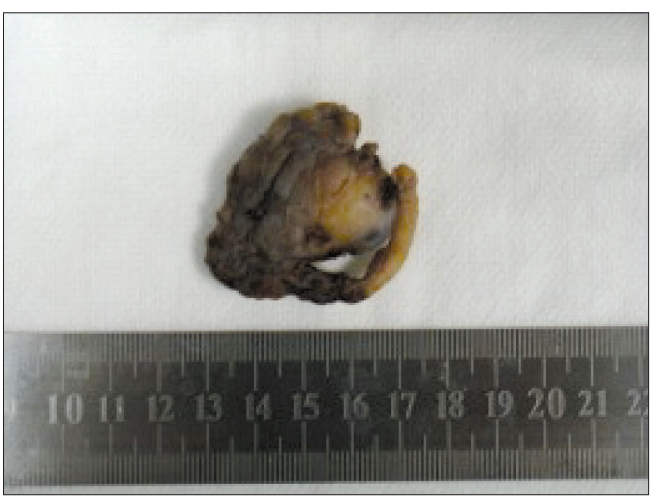

Fig. 3a. Macroscopic aspect of the surgical specimen.

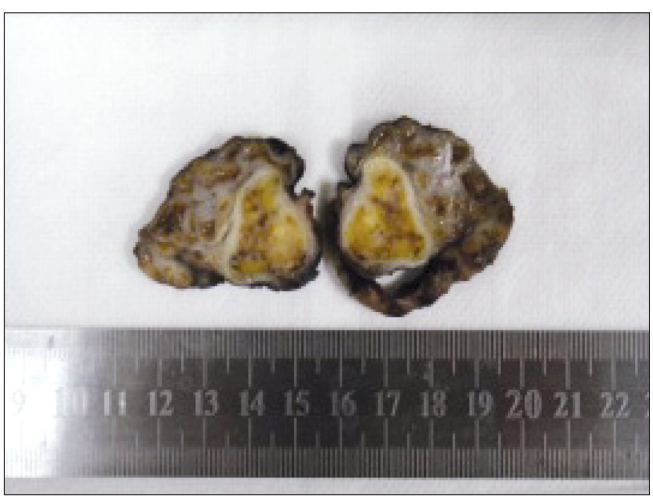

Fig. 3b. Cross-section of the surgical specimen. The tumor is well-circumscribed, apparently capsulated, and yellow with irregular dark brown areas.

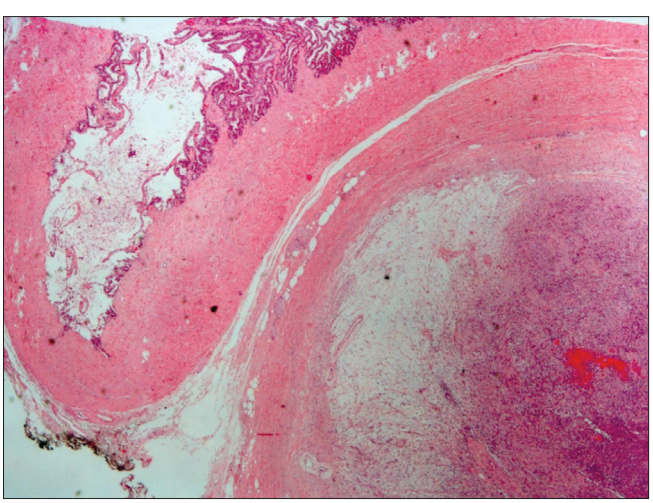

Fig. 3c. Microscopic aspect (H&E, 5x).

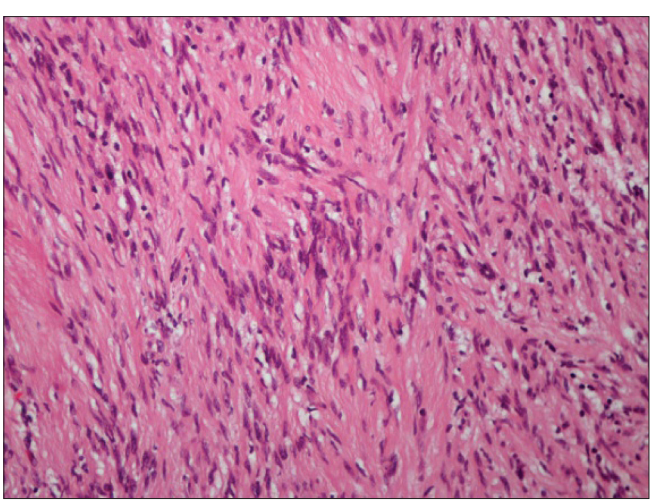

Fig. 3d. Spindle-shaped cells with poorly defined eosinophilic cytoplasm and without atypia and with vague nuclear palisading (H&E, 400x).

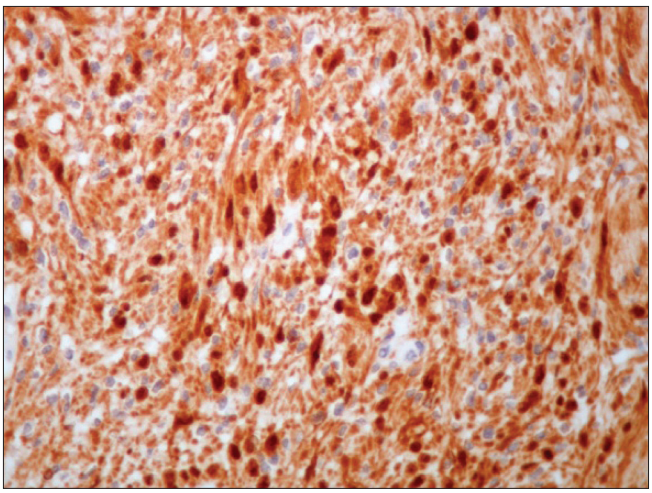

Fig. 3e. Positivity for S-100 protein (400x).

Although surgical resection is the curative treatment for symptomatic seminal vesicle tumors, namely the schwannoma, the topography and anatomic considerations of the seminal vesicles make them difficult to approach [5]. Different surgical approaches such as transperineal, transcoccygeal, para/retrovesical, transvesical, and laparoscopic are described and there's no consensual first choice between them [5]. It is assumed that the seminal vesicle surgery is a unique challenge and that approach should be decided by the surgeon's expertise. Complications are predicted in all techniques, but transvesical and laparoscopic approaches take advantage by minoring risk of impotence, blood loss, and rectal injury [5].

The transvesical technique with magnification lens performed in this case allowed the excision of the left seminal vesicle with intact tumor. It also allowed preservation of the neurovascular bundle and to access the bladder neck for nontraumatic digital anterior commissurotomy. With this attitude, the surgeon aimed for an oncologic cure and the resolution of LUTS, whether symptoms were the result of tumor nerve compression or bladder neck disease.

CONCLUSION

Seminal vesicle tumors are rare and their clinical diagnosis and surgical approach can be difficult [5, 6].

Imaging studies became crucial to diagnose, characterize solid or cystic tumors and understand their invasion patterns [5, 6].

Symptoms in the presence of a seminal mass are the cornerstone to surgery [6].

The surgical approach, since there are so few cases described, depends on the experience and expertise of the urologic surgeon [5].

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