



## Oncology

# Spindle cell/pleomorphic lipoma of the seminal vesicle: First description of a rare benign mesenchymal tumor

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## ABSTRACT

We describe the first case of a spindle cell/pleomorphic lipoma of the seminal vesicle. A 6.2cm large mass originating from the left seminal vesicle was incidentally detected on imaging for peripheral arterial disease. A transrectal ultrasound-guided biopsy was negative for malignancy. We proceeded with a robotic tumor resection due to the size of the mass and sarcomatoid features present on MR imaging. The final pathological work-up revealed a spindle cell/pleomorphic lipoma, immunohistochemical staining was performed with no malignant features detected, in particular no signs of an atypical lipomatous tumor. Ejaculatory function was preserved with reduced volume at 6-weeks follow-up.

## 1. Introduction

Mesenchymal tumors of the urinary tract are rare entities. To our knowledge, benign lipomatous tumors of the seminal vesicle have not been previously reported in the literature. We report a case of spindle cell/pleomorphic lipoma of the seminal vesicle.

## 2. Case presentation

A 6.2 × 5.1 cm tumor originating from the left seminal vesicle (SV) was incidentally detected in a 79-year old male on computed tomography (CT) performed for peripheral vascular disease. The patient was referred to our urological department for further work-up. The patient's history was unremarkable, in particular denying voiding symptoms, flank pain, gross hematuria or hematospermia. In the digital-rectal examination (DRE) of the prostate a mass of increased consistency arising from the left seminal vesicle was appreciated. Serum prostate-specific antigen (PSA) levels were not elevated, the family history was negative for malignancies.

On subsequent magnetic resonance imaging (MRI) of the pelvis, the mass showed contrast-enhanced lipomatous and solid areas, suggestive of a sarcomatoid mass with a differential diagnosis of liposarcoma (Fig. 1). A transrectal ultrasound (TRUS)-guided biopsy of the mass was

performed. Histological analysis with H&E stains revealed a bland spindle cell neoplasm suggesting the differential diagnosis of a spindle cell lipoma. A MDM2 fluorescent in situ hybridization (FISH) showed no amplification of the MDM2 gene excluding an atypical lipomatous tumor (ALT).

We decided to proceed with a robotic vesiculectomy despite negative TRUS biopsy due to the suspicious morphology on the MRI (sarcomatoid appearance) as well as the size of mass. Intraoperative, the tumor was enucleated from the seminal vesicle, with an uncomplicated post-operative course. Histopathological evaluation revealed an encapsulated, 7 × 6 × 6 cm lipomatous tumor (Fig. 2) consisting of mature adipocytes, bland spindle cells as well as multinucleated stromal giant cells and hyalinized rope-like collagen fibers. There was no necrosis and scarce mitosis. Immunohistochemistry demonstrated diffuse and strong positivity for CD34 and low mitotic activity (Ki67). Especially the pleomorphic stromal cells were not proliferative active. Considering the negative MDM2 FISH result from the final specimen and the previous biopsy the histopathological findings were most consistent with a spindle cell/pleomorphic lipoma (Fig. 3). No evidence of malignancy was found.

Six weeks after surgery the patient presented in good general condition, despite diminished ejaculatory volume, with preserved ejaculatory function.

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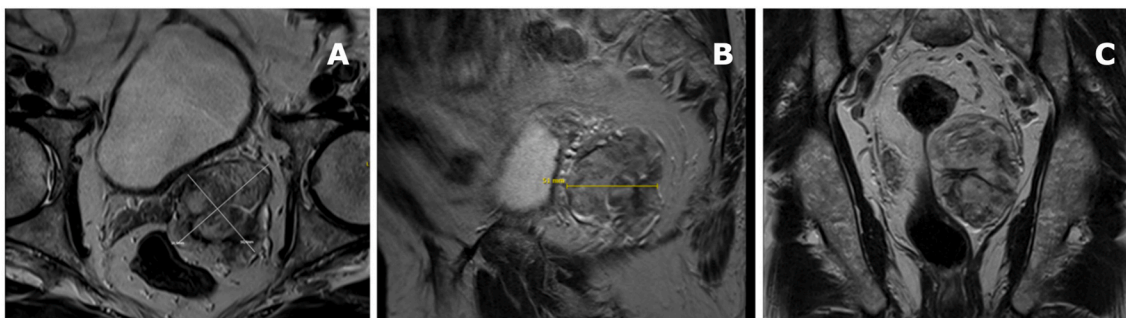
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**Fig. 1.** MRI in T2 weighted sequence: Abdomen/Pelvis (A) axial, (B) sagittal, (C) coronal – Sacromatoid features are appreciated within the mass arising from the left seminal vesicle. The mass appears to exert a mass effect displacing the proximal rectum as well as the bladder floor.



**Fig. 2.** Macroscopic appearance of excised lipoma of the seminal vesicle.

### 3. Discussion

Primary tumors originating from the seminal vesicles are very rare. The most common entities are malignant epithelial tumors of the seminal vesicle in the form of adenocarcinomas. Approximately 100 cases of adenocarcinomas of the seminal vesicle have been reported to date.<sup>1</sup>

Histologically, epithelial tumors must be distinguished from mesenchymal ones, such as the lipoma described. A further distinction must be made with regard to their occurrence as a primary tumor, which develops from the organ itself, and as a secondary tumor, as an infiltrative process of an adjacent tumor or as a metastasis. In our case, we assume the spindle cell/pleomorphic lipoma of the seminal vesicle a primary tumor.

We performed a literature search in PUBMED for primary mesenchymal tumors of the seminal vesicles and found 70 cases, of which 46%

were benign.

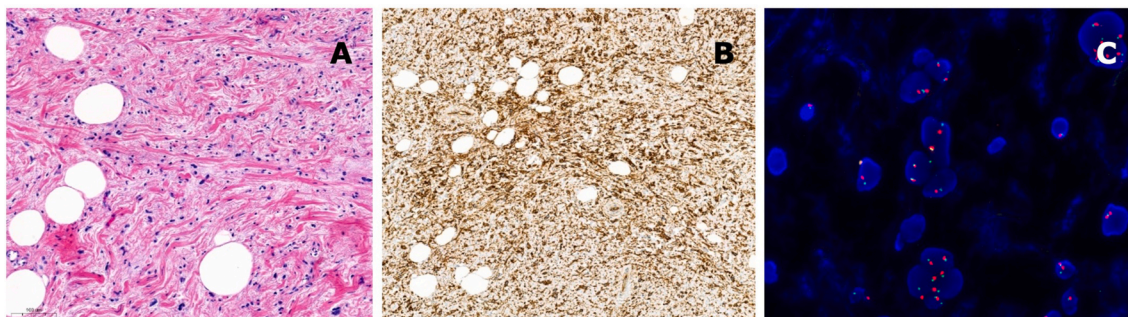
In addition, we found a group of 26 cases of primary mixed epithelial-stromal tumors (MEST) of the seminal vesicle, representing a very heterogeneous cohort of malignant and benign entities, including benign cystadenomas, phyllodes tumors, mesenchymomas, epithelial stromal tumors, and cystosarcomas. This group exhibits a wide histologic epithelial and mesenchymal diversity. Reikie et al. proposed a distinction between low-, intermediate-, and high-grade tumors in this group.<sup>2</sup>

The clinical manifestation of primary seminal vesicle tumors varies widely in the literature. In some cases, like ours, the diagnosis is an incidental finding in an asymptomatic patient. In other cases, patients present with general urologic complaints such as abdominal discomfort, urinary urgency and frequency, or specific complaints such as hematospermia and gross hematuria.

The work-up of a mass arising from the seminal vesicles is challenging due to the heterogeneous entities as well as lack of clear radiological features of malignancy. For this reason, the masses are surgically excised, even in cases of negative biopsies. Only one recent case of schwannoma of the seminal vesicle was reported on active surveillance with a longest follow-up of 20 months.<sup>3</sup> As in all other cases described, we decided to proceed surgically despite the benign histology in the biopsy specimen because of the sarcomatoid aspects on MRI and the size of the mass.

Lipomas of the genitourinary tract have occurred mainly in the spermatic cord, very rarely in the urinary bladder, and in the upper urinary tract, penis, and scrotum.<sup>4</sup> This is the first description of a lipoma in the seminal vesicles.

Compared with leiomyomas, which can differentiate into leiomyosarcomas, malignant differentiation is not common in conventional lipomas. To date, only three cases of conventional lipomas with sarcomatoid differentiated portions have been reported.<sup>5</sup> Only atypical lipomatous tumors are known to have a malignant aspect. This could be excluded in our patient. Therefore, we did not schedule regular tumor follow-up.



**Fig. 3.** A: Typical triad of mature adipocytes, spindle and multinucleated stromal cells and hyalinized rope-like collagen fibres in H&E stain. B: Diffuse expression of CD34 in stromal cells. C: Polysomy of chromosome 12 in single cells but no amplification of the MDM2 signal in FISH.

#### 4. Conclusion

To our knowledge, this is the first description of a spindle cell/pleomorphic lipoma of the seminal vesicle as a primary benign mesenchymal tumor of the seminal vesicle. Primary mesenchymal tumors of the seminal vesicles are extremely rare and appear to be benign in about 50% of cases. Radiological differentiation between malignant and benign masses is very difficult. In addition, the masses have very heterogeneous histologic differentiation, making a surgical approach with resection of the tumor the treatment of choice. Since conventional lipomas usually do not differentiate into malignant liposarcomas, no further follow-up was scheduled for this patient.

#### Informed consent

Informed consent was obtained from the patient by the author.

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#### Declaration of competing interest

None.

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