



Growing solitary fibrous tumor of the prostate during COVID-19 pandemic

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ABSTRACT

Solitary fibrous tumor (SFT) is an uncommon neoplasm typically located on the pleura (Chick et al., 2013 Mar). Although prostatic cancer tend to be adenocarcinoma, prostatic solitary fibrous tumor might be a rare cause of prostatic growth. They usually are asymptomatic although they can produce lower urinary tract symptoms (LUTS). Diagnosis is anatomopathological although Magnetic Resonance (MRI) can be useful to evaluate local and metastatic involvement (Liu et al., 2019). An adequate treatment is the most important prognostic factor and it involves complete surgical resection. We report an 85-year-old male that had an enormous SFT with LUTS treated with surgery which was delayed because of COVID-19 pandemic.

1. Introduction

Solitary fibrous tumor (SFT) is a myofibroblastic neoplasm that rarely metastasizes. They are uncommon benign tumors, typically located in the pleura. However, SFT in prostatic location are extremely rare. In this article, we present an 85-year-old patient who had an enormous SFT which was treated with surgery.

2. Case presentation

The patient was clinically diagnosed with Benign Prostatic Hyperplasia (BPH) and treated with dutasteride and tamsulosin.

The patient had severe LUTS even though he had medical treatment. The symptoms were severe nocturia (9–10 times per night), severe polyachiuria (every 2 hours), dysuria; Flow rate 8,3 ml/sec. Therefore a MRI was performed in 2019 (Fig. 1). It revealed the presence of a 10.4 × 8.2 × 12 cm, encapsulated, discretely homogeneous, hypointense in T1 and T2 mass; these findings were suggestive of a tumor with predominance of fibromuscular content. This mass compressed neighboring structures but without signs of infiltration. No significant lateral pelvic or inguinal lymph nodes or other signs of metastasis were found. A transrectal biopsy of the mass was performed, which confirmed the presence of a SFT, therefore surgical treatment was indicated. At first, the patient refused the surgery and close follow up was made, proving tumor growth in a February 2020 MRI (Fig. 2).

The patient accepted to undergo surgery in June 2020, so a

laparoscopic enucleation of the mass was performed with prostatic preservation. Postoperative hemoglobin was 8,2 (preoperative hemoglobin was 10,6) so a transfusion in the early postoperative was needed. The surgery was delayed 4 months due to COVID-19 pandemic. Gross evaluation of the surgical specimen revealed a polyglobulated (17 × 12 × 6 cm) mass partially covered by a fibrous capsule mass. On the cut section, an homogeneous, whitish, fascicular surface with a small area of necrosis was observed. Microscopic analysis revealed an homogeneous mesenchymal proliferation with spindle cells growing in a disordered and storiform pattern (Fig. 3). Some cells showed atypia and there were small areas of necrosis interspersed with numerous hemangiopericytoid vessels without hemorrhagic areas. Prostatic parenchyma was not recognized. Immunohistochemistry (IHC) showed that the neoplastic cells were positive for CD34, B cell lymphoma-2 (BCL2), CD99 and vimentin, but immunonegative for epithelial membrane antigen (EMA), desmin, CKPAN, C-KIT and DOG-1 with a Ki67 score of 3%. Margins were not affected.

After surgery, no adjuvant treatment was given. Biopsies performed one year later revealed no evidence of recurrence.

After 18 months of follow-up there was no evidence of recurrence and the patient is asymptomatic (no LUTS and he is continent).

3. Discussion

SFT is an extremely uncommon mesenchymal neoplasm, with an estimated frequency of 2.8 per 100,000 individuals.¹ It can appear at

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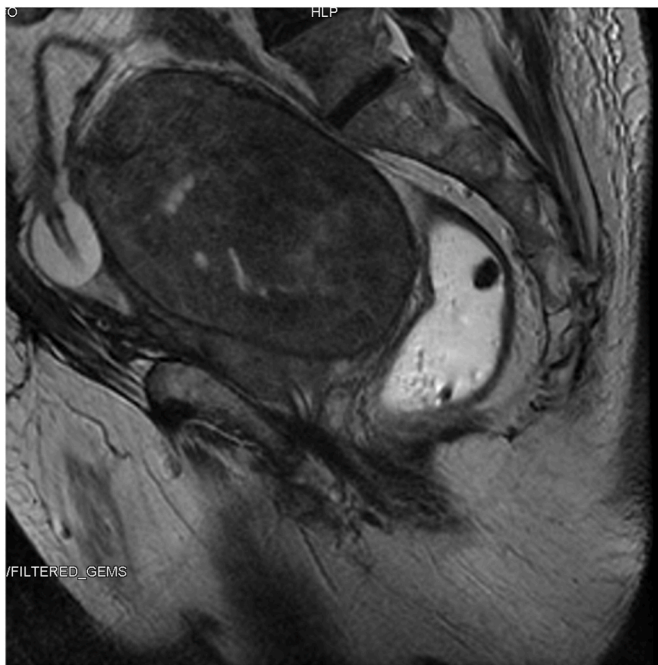


Fig. 1. Sagittal T2 magnetic resonance imaging shows a 10.4 × 8.2 × 12 cm hypointense prostatic mass in March 2019.

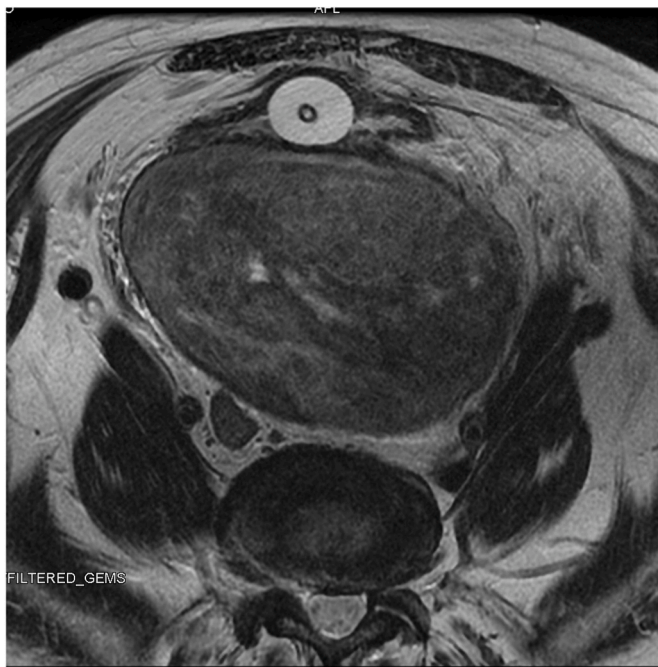


Fig. 2. Axial T2 magnetic resonance imaging shows a 12.4 × 8.8 × 14.4 cm hypointense prostatic mass in February 2020.

any age, however it is usually diagnosed in patients with a median age at diagnosis of 60. They have no gender predominance.² There are no known risk factor associated.

We find this case exceptional because SFT are rare tumors that usually arise in the pleura.¹ In this patient, the location of the tumor was quite extraordinary since it was prostatic. In addition, they tend to be asymptomatic, but our patient had severe LUTS because of the big extension of the mass (12 cm in 2019 and around 18 cm in June 2020).

The diagnosis is anatomopathological although imaging techniques

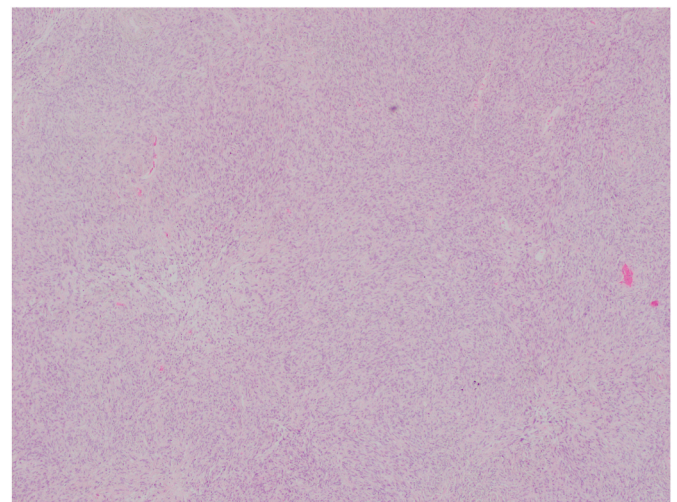


Fig. 3. H&E Stain with spindle cells growing in a disordered and storiform pattern.

can be useful to evaluate local and metastatic involvement.² On MRI, this tumor is usually homogeneous, lobulated, well-defined, hypointense on T1 and with variable intensity on T2; those which are highly vascular, with necrotic areas, or hypercellular tend to be hyperintense and those without necrotic areas and poorly vascularized (like the case reported) are hypointense.³ They also tend to be pedunculated and covered by a serous capsule. Microscopically, fibroblastic cells with atypia usually appear. Regarding the immunohistochemical profile, they usually express CD34, Bcl2, CD99, vimentin and STAT6 and it is negative for protein S100, actin, desmin and EMA,⁴ although these markers are not specific for SFT.

Although aggressive SFT have been reported, they are generally benign tumors that do not recur locally and rarely metastasize (25%).² They tend to compress neighboring structures but they don't usually invade them. For this reason, surgical resection of the tumor or radical prostatectomy is the treatment of choice. Also, a complete resection of the tumor is the best prognostic factor since recurrence in SFT may be due to incomplete resection. Surgery must be done as soon as possible because these tumors tend to grow and when they compress neighboring structures the patient's quality of life can be affected. In our case surgical treatment was delayed because of two reasons: First because the patient did not want surgical treatment and second, because COVID-19 pandemic affected surgical activity delaying some surgeries. The pandemic delayed all the non oncological surgeries. This one could be delayed some months because the tumor was not being aggressive and because we made a close follow up of the patient. During that period of time the tumor continued growing and when the surgery was done, the SFT had a massive extension (18 cm).

Although it was not necessary in our case, adjuvant radiation therapy is useful in patients with incomplete resection and who are ineligible for re-resection.² For patients with recurrent SFT, the treatment of choice is re-resection followed by adjuvant radiation therapy. In metastatic disease, the treatment is based on dacarbazine (with or without doxorubicin) and antiangiogenic treatment such as pazopanib.⁵

4. Conclusion

Prostatic SFT diagnosis can be a real challenge since it is a very uncommon tumor and the patient is either asymptomatic or has LUTS BPH-Like. Imaging techniques and histological analysis are essential for a correct diagnosis. Diagnosis and surgical treatment must be done as soon as possible because of the potential growth of the SFT, something quite difficult nowadays because of COVID-19 pandemic.

Declaration of competing interest

None.

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