

## Oncology

## Prostate Stromal Tumor of Uncertain Malignant Potential: Case Report With 5-Year Follow-up

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## ABSTRACT

Prostate stromal tumor of uncertain malignant potential is a term used to describe a specialized proliferation of stromal cells within the prostate. Most of these tumors tend to be benign, but some can present with local invasion or progress to prostatic stromal sarcoma with distant metastasis. We report a case of a 62-year-old male patient who presented to us with a diagnosis of stromal tumor of uncertain malignant potential. We have followed up the patient for 5 years with imaging, prostate-specific antigen checks, and annual prostate biopsies.

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## Introduction

Stromal tumors of uncertain malignant potential (STUMPs) are distinct rare lesions that were first described in 1998 by Gaudin et al.<sup>1</sup> Although the term includes cases that may potentially be benign, STUMPs are considered to be a neoplastic entity because of their ability to recur, diffusely infiltrate the prostate gland with possible extension to adjacent tissues, and progress to prostatic stromal sarcoma (PSS) with possible distant metastasis.

Overall, these tumors are rare and have been described in only a few case reports in patients aged 27–83 years. Presentation can vary from lower urinary tract symptoms to elevated prostate-specific antigen (PSA), hematuria, abnormal digital rectal examination, and rectal obstruction.

Histologically, they are distinct from benign hyperplasia with multiple subtypes being described, including degenerative atypia with and without hypercellularity, myxoid pattern, and phyllodes tumor. They fail to show any zonal predilection, and approximately 5% may progress to PSS, which has been reported with metastasis to the lung and bone.<sup>1,2</sup> Unfortunately, their behavior cannot be predicted by their histologic appearance.<sup>3</sup>

Imaging with an magnetic resonance imaging (MRI) can be helpful in distinguishing between a localized proliferation vs a mass-forming disease. Muglia et al<sup>4</sup> described STUMP as diffusely heterogeneous on T2-weighted images but with a homogeneous low signal on T1-weighted images.

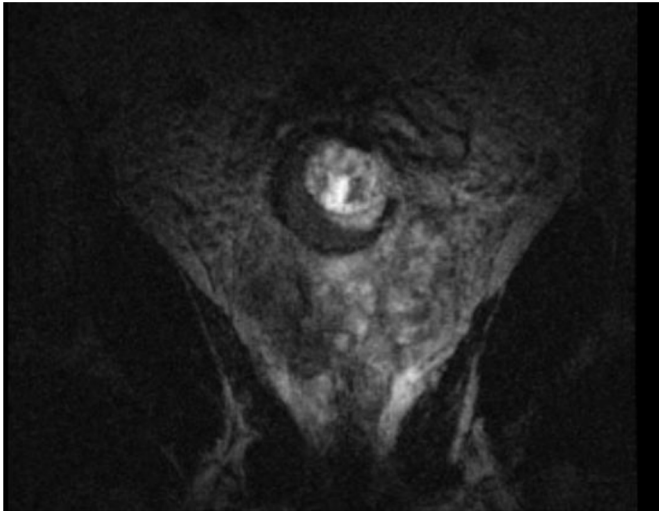
## Case presentation

We report a case of a 62-year-old male patient who presented to us with an elevated PSA and a diagnosis of STUMP. He underwent his first biopsy at our institution in December 2008. We have followed up the patient for 5 years with annual transrectal ultrasound-guided prostate needle biopsies. In addition, the patient has also undergone 4 surveillance endorectal MRIs during this 5-year period for better characterization and local staging.

Over the past 5 years, his PSA has ranged between 2.49 and 4.49 ng/mL. His first MRI was completed 2 days before his transrectal ultrasound-guided prostate needle biopsy which revealed a 2.5-cm heterogeneous nodule with areas of high and low T2W signal intensity in the posterior aspect of the prostate likely arising from the central gland (Fig. 1). Prostate volume was 52 mL. At the time of his biopsies, additional biopsies were taken from the nodule, with pathology revealing persistent STUMP. The rest of the prostate biopsies were benign prostatic tissue with atrophy. Repeat annual biopsies of the nodule continued to reveal STUMP without progression to PSS, whereas biopsies of the rest of prostate continued to be benign. On the most recent MRI, his prostate was found to have increased in size, with a significant increase in

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**Figure 1.** MRI image demonstrating nodule with STUMP

the nodule from 2.7 cm in the largest dimension to 6.4 cm (Table 1), but his biopsy results remain unchanged.

## Discussion

STUMPs are infrequent prostatic tumors of mesenchymal origin. To date, the etiology and pathogenesis of STUMP remain unknown, whereas no risk factors have been clearly identified. Although most of these cases tend to be indolent, varying degrees of malignancy have been reported, including frequent local recurrences with involvement of adjacent tissues and progression to PSS with metastases to bone and lung.<sup>1</sup> Patient presentation will depend on the degree of local invasion and/or distant metastasis.

The diagnosis of STUMP is made histopathologically. However, STUMP can be misdiagnosed as benign prostatic hyperplasia (BPH) or sarcoma. Similar to BPH, glandular crowding, papillary infolding, and cyst formation may be present. However, other histologic features, depending on the subtype of STUMP, can distinguish STUMP from BPH. For example, in the degenerative atypia subtype, the most common subtype of STUMP, hypercellular stroma with scattered atypical but degenerative cells are present in addition to the common features with BPH.<sup>2</sup> In contrast to sarcoma, few or no mitotic figures are present.

The diagnosis of STUMP is important to recognize because of its unpredictability and its malignant potential. Owing to its rarity,

**Table 1**

PSA trend with MRI and biopsy results

Date	PSA (ng/mL)	Number of Prostate Needle Biopsy Cores	MRI	Prostate Volume on MRI (mL)	Size of Nodule on MRI (cm)	Presence of STUMP
12/08	Not available	36	Yes	52	2.5	Yes
08/09	3.3	36	No			Yes
07/10	2.81	32	Yes	40.3	2.2	Yes
07/11	2.49	33	Yes	41.9	2.7	Yes
08/12	3.79	30	Yes	68	6.4	Yes
11/13	4.49	20	No			Yes

MRI, magnetic resonance imaging; PSA, prostate-specific antigen; STUMP, stromal tumor of uncertain malignant potential.

management for these lesions remains to be well defined. Treatment options can vary depending on the patient's age, symptoms, and preference for treatment vs surveillance. Management options described in the literature have ranged from repeat transurethral resections for obstructive symptoms to suprapubic and radical prostatectomy. Our patient reported no symptoms with an American Urological Association score of 15/35, which he is satisfied with. Although associations with adenocarcinoma and progression to PSSs have been reported,<sup>5</sup> our patient elected for close active surveillance with annual biopsies and routine PSAs. In the absence of signs of progression to prostatic sarcoma, we have not pursued workup for metastatic disease.

To better identify the best treatment of STUMP, better characterization and longer follow-up are needed. As the number of these cases continues to accumulate, better understanding of this disease will be possible.

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