

STUMP of Prostate Gland - Case Report

*Begum A,¹ Shaikh AU,² Kamal M³

Abstract

Specialized stromal tumours of prostate includes stromal tumors of uncertain malignant potential (STUMP) and stromal sarcoma. Florid Benign prostatic hyperplasia must be differentiated from prostatic stromal neoplasia. Prostatic STUMPs may have significant overlap with florid stromal hyperplasia. A case of prostatic STUMP is reported in this article. A 56 years old man presented with dysuria. Ultrasonography and CT scan showed inhomogenous parenchyma and highly suspicious lesion in posterior transition zone and postero-lateral peripheral zone of left lobe at mid gland of prostate. Capsular invasion was absent. Core biopsy revealed nodular hyperplasia with focal phyllodes like atypical stromal hyperplasia (STUMP). PSA level was 7.2 ng/ml. We should observe the glandular epithelial neoplasia and stromal cells changes during histopathological diagnosis because sarcomatous changes in stromal cells is equally devastating as carcinoma.

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Introduction

Prostatic stromal tumors arising from the specialized prostatic stroma are rare and distinct tumors with diverse histologic patterns. In the past, these tumors have been reported in a variety of terms including atypical stromal hyperplasia, phyllodes type of atypical stromal hyperplasia, and cystic epithelial-stromal tumors. These were believed as a benign-conditions.¹ Lesions that

were not overt sarcomas were diagnosed as STUMP because the natural history of these lesions was uncertain.² There is still debate regarding the definition, pathology and prognosis of this group of lesions. In this case report we showed the clinicopathological and radiological features of the patient diagnosed as STUMP with particular regard to its prognosis and follow up which is very important.

1. Dr. Afroza Begum, Associate Professor, Department of Pathology, Anwer Khan Modern Medical College. afroza.mithila@gmail.com
2. Dr. Azfar Uddin Shaikh, Assistant Professor, Urology, Anwer Khan Modern Medical College
3. Prof. Mohammed Kamal, Chief Consultant, The Laboratory, Ex-Chairman and Head of the Department of Pathology, BSMMU

*For correspondence

Case Report

A 56 years old male patient complained with lower urinary tract symptoms (LUTS). PSA level was 7.2 ng/ml. USG revealed enlarged prostate (53x61x61) mm, volume 105 cc. Parenchymal architecture was inhomogenous. Capsule was intact. CT scan showed highly suspicious lesion in posterior transition zone and postero-lateral peripheral zone of left lobe at mid gland. Capsular invasion was absent. Right internal iliac lymph node was enlarged. Final assessment: PI-RADS score: 4 high. Clinically cancer was likely to be present. Biopsy was recommended from the suspicious lesion. After that needle core biopsy was done.



Figure 1. USG showing nodular enlargement of prostate

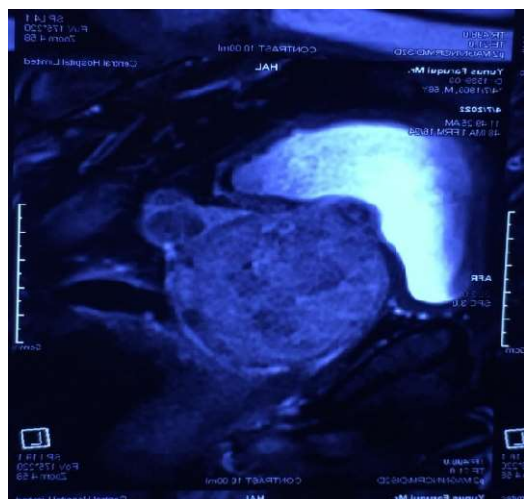


Figure 2. Showing highly suspicious lesion in posterior peripheral transition zone and posterolateral zone of left lobe at mid gland. No capsular invasion.

Core biopsy specimen containing twelve long linear pieces of tissue measuring in between 2.5 cm and 1.5 cm in length were preserved in 10% formalin. Then paraffin embedded sections were stained with hematoxylin and eosin stain.

Light microscopy revealed proliferation of both glandular and fibromuscular stroma. Some of the fragments showed phyllodes like increased stromal cellularity and pleomorphism. Lack of thick walled small blood vessels. Mitoses were scanty < 1/10HPF. Clinical correlation and follow up along with immunohistochemistry were advised by Pathologist.

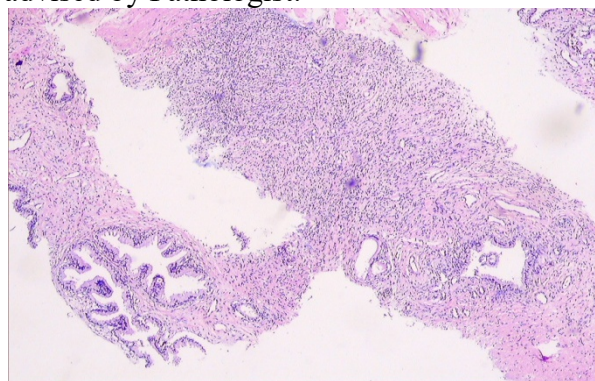


Figure 3. Photomicrograph shows core needle biopsy of prostate.

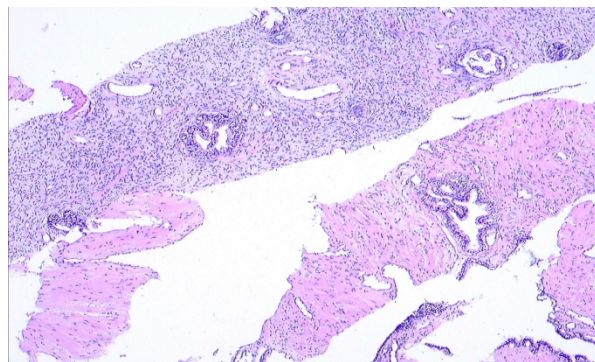


Figure 4. Photomicrograph shows fragments of normocellular stromal components with hypercellular stromal proliferation

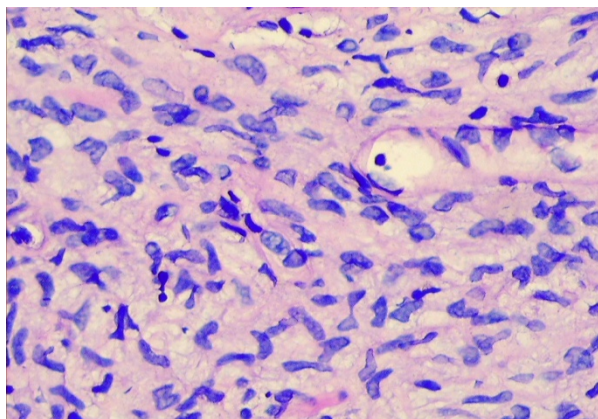


Figure 5. Photomicrographs reveals high power view of stromal proliferation with atypia and thin wall blood vessels

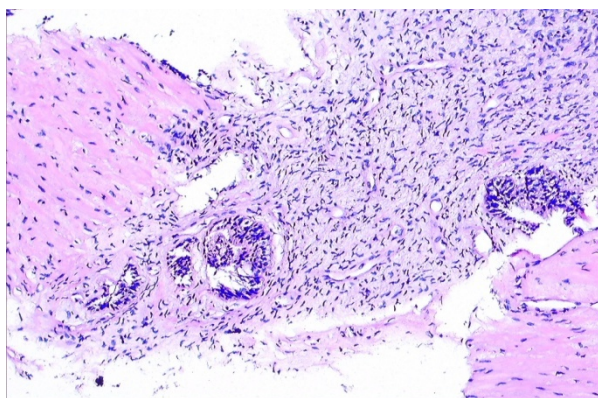


Figure 6. Photomicrograph reveals predominant stroma with dysplastic glands

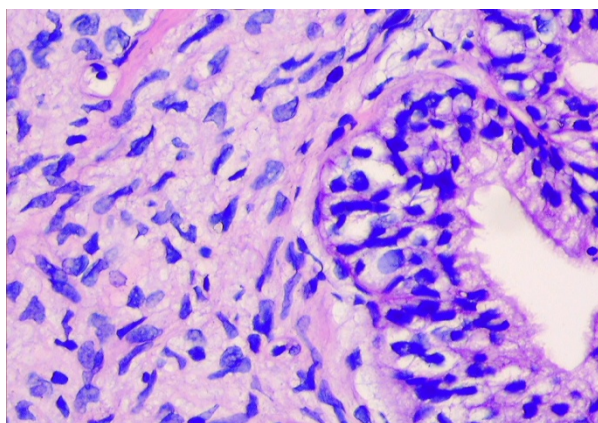


Figure 7. Photomicrograph shows dysplastic gland with atypical stromal tumour without mitosis

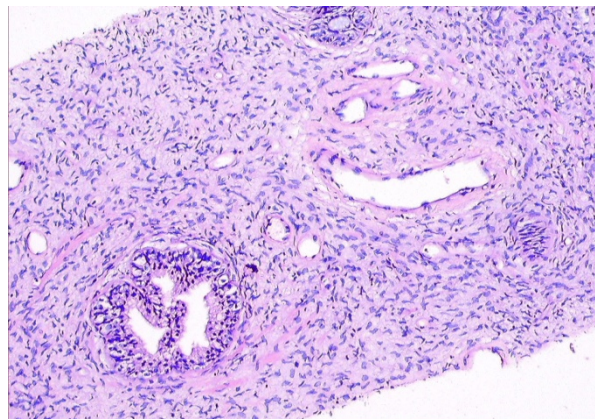


Figure 8. Photomicrograph shows phyllodes like growth pattern of STUMP

Histopathology reveals nodular hyperplasia with focal phyllodes like atypical stromal hyperplasia (STUMP).

Discussion

Benign prostatic hyperplasia with stromal predominant is a common findings in TURP or core needle biopsy but florid BPH must be differentiated from stromal neoplasia. Prostatic STUMPs have histological overlap with stromal hyperplasia. Histological pattern of STUMPs are cellular spindle cell rich with atypia, phyllodes like, myxoid and round cell rich.

Stromal hyperplasia generally contains small blood vessels, often with some degree of hyalinization, which is distinctive and helps in distinction from a true prostatic stromal neoplasm. In this case hyalinized blood vessels are absent.

Epithelial proliferations are also found in association with prostatic STUMPs and include glandular crowding, prominent basal cells, papillary infolding, cystic dilatation, basal cell hyperplasia, urothelial metaplasia, squamous metaplasia, and cribriform hyperplasia. Of these features, glandular crowding and prominent basal cells and dysplasia were present in this case. A single atypical mitotic figure in stromal cells on biopsy may provide a clue to the malignant

nature of STUMP, which was absent in this case. But increased cellularity and atypia were there. Necrosis was also absent.

Several difficulties with the histological diagnosis of STUMP occur. Biopsy may reveal STUMP but the resection reveals sarcoma. Moreover in this case patient has right internal iliac lymph nodes enlargement.

Prostatic STUMPs are typically indolent and are cured with complete resection. They may be treated more conservatively. However, there are cases associated with sarcomatous dedifferentiation, if very careful clinical follow-up is not done. Because sarcomas have fully metastatic potential and generally need surgical resection and consideration for adjuvant therapy.³

There are many other lesions that could be misleader, like solitary fibrous tumour, Gastrointestinal stromal tumour, smooth muscle neoplasm, sarcomatoid carcinoma, carcinosarcoma.

Prostatic STUMPs are positive for CD34 and progesterone receptor.⁴ Common chromosomal aberrations include loss of chromosome 10, 13 and 14; Additionally phyllodes type of STUMP is very difficult to differentiate it from low grade sarcoma. Low grade sarcoma has mitotic count 1-7/10HPF, easily detected by Ki 67 immunostainig.⁵

Conclusion

STUMP can be histologically misdiagnosed as BPH. It is important to recognize that these are neoplasm with unique local morbidity and malignant potential. STUMP can recur frequently, predominantly involve the peripheral and mid zone like this case.LG

sarcoma can be misinterpreted as STUMPs having relatively bland cytology. STUMPs behave in an indolent fashion in many cases but their unpredictability in a minority of cases and the lack of correlation between different histologic patterns of STUMP and sarcomatous dedifferentiation require close follow-up and consideration of definitive resection in younger individuals.

Factors to consider for definitive resection for STUMP diagnosed on biopsy include patients'age and treatment preference, presence and size of the lesion on rectal examination or imaging studies, and extent of the lesion on tissue sampling. Expectant management with close clinical follow-up could be considered in older patients.

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