MEDIKA ALKHAIRAAT : JURNAL PENELITIAN KEDOKTERAN DAN KESEHATAN 6(2): 771-775
e-ISSN: 2656-7822, p-ISSN: 2657-179X

PROSTATIC MESENCHYMAL TUMOR IN YOUNG ADULT: A CASE REPORT

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ABSTRAK

Neoplasma pada jaringan mesenkim hanya sekitar 0,1% dari total tumor yang terjadi pada prostat dan berpotensi menjadi ganas. Sarkoma stroma prostat (PSS) sebagian besar memiliki prognosis yang buruk, sekitar 50% akan meninggal dalam waktu 2 tahun atau bahkan lebih singkat. Di sini, kami melaporkan seorang pria berusia 46 tahun yang menderita LUTS dan berkembang menjadi retensi urin dalam 2 minggu. Hasil pemeriksaan tidak menunjukkan adanya keganasan. Pemeriksaan rektal digital (DRE) menunjukkan pembesaran prostat dengan konsistensi lunak dan permukaan teratur. Pemeriksaan ultrasonografi transabdominal menunjukkan ekostruktur prostat homogen dengan volume 80ml3, dan total antigen spesifik prostat (PSA) 0,57 ng/mL. Pasien kemudian menjalani transurethral reseksi postate (TURP), ternyata interpretasi histopatologi menunjukkan adanya tumor mesenkim prostat. Tumor ini dibagi menjadi Tumor Stromal dengan Potensi Ganas Tidak Pasti (STUMP) dan PSS, yang seharusnya umum terjadi pada dekade ke-7. Pasien ditemukan memiliki tumor mesenkim yang kebetulan berasal dari jaringan reseksi prostat. Setelah itu dilakukan CT-Scan perut dengan kontras untuk mengetahui kemungkinan metastasis. Pasien disarankan untuk memantau pertumbuhan dan penyebaran tumor. Tumor mesenkim masih merupakan kasus yang jarang terjadi, karena sedikitnya jumlah kasus serupa yang dilaporkan disebabkan oleh ukuran jaringan yang sangat kecil, kesulitan dalam membedakan neoplasma stroma, dan terbatasnya keahlian ahli patologi dalam melakukan interpretasi, sehingga diperlukan lebih banyak rangkaian kasus untuk mempertimbangkan terapi standar.

Kata Kunci: Prostat, Keganasan, PSS, STUMP

ABSTRACT

Neoplasm in the mesenchymal tissue is only about 0.1% of the total tumors that occur in the prostate and potent to be malignant. Prostate stromal sarcoma (PSS) mostly have poor prognosis, about 50% will die within 2 years or even shorter. Here, we report a 46-years old male presented with LUTS and progressed to be urinary retention in 2 weeks. The examination results did not suggest malignancy. Digital rectal examination (DRE) showed an enlarged prostate with soft consistency and regular surface. Transabdominal ultrasonography examination showed homogeneous prostate echostructure with a volume of 80ml^3, and total prostate spesific antigen (PSA) is 0.57 ng/mL. The patient then underwent transurethral resection of postate (TURP), apparently the histopathologic interpretation showed a prostate mesenchymal tumor. These tumors are divided into Stromal Tumor of Uncertain Malignant Potential (STUMP) and PSS, which should be common in 7th decade. The patient was found to have a mesenchymal tumor incidentally from prostate resection tissue. After that, an abdominal CT-Scan with contrast was performed to determine the possibility of metastasis. The patient was adviced to monitor the growth and spread of the tumor. Mesenchymal tumors are still a rare case, because the small number of similar cases

reported due to very small tissues size, difficulty in distinguishing stromal neoplasms, and limited expertise of pathologists in interpreting, so we need more cases series to consider the standard therapy.

Keywords : *Prostate, Malignancy, PSS, STUMP*

INTRODUCTION

According to Worldwide cancer data (2020), prostate carcinoma is the second highest malignancy in men after lung malignancies.[1] 1.2 million new cases with 358,989 deaths were reported in the world in 2018[(1)], and 1.4 million new cases (15.1%) of total malignancies in men) in 2020, the prevalence of cases is higher in developing countries[2,3]. Prostate mesenchymal tissue neoplasms account for only about 0.1% of the total cases of malignancies in this tissue, with the highest prevalence in the 7th decade of age, and only 2% in those under 50 years of age.[2,4] We report a patient with a prostate mesenchymal tumor found incidentally from histopathology results after prostate resection. There is no consensus for therapeutic guidance in similar cases.

CASE

A 46-year-old male had progressive urinary retention since 2 weeks before, no history of fever or urinary tract infection. Digital rectal examination (DRE) was performed, the impression of an enlarged prostate, palpable soft, and regular surface, no nodules on the surface. Abdominal ultrasound showed an enlarged prostate with a volume of 80 ml3, with a total PSA value of 0.57 ng/mL.

Based on the examination results, the patient was diagnosed as Benign Prostate Hyperplasia (BPH) and transurethral prostate resection (TURP) was performed. On urethroscopy, the dextra lobe of the prostate was enlarged. Then the scraping results were examined in the anatomical pathology lab.

In the histopathological images **(Figures 1 - 2)**, there was a proliferation of tumor cells arranged in fascicles and irregular with ovoid-spindle cell nuclei, with a small number of mitoses, only about 1-2/10 field of view. There were several foci at the periphery with fibromuscular stroma and a few tissue fragments with the surface covered by transitional epithelium, there were also vacuoles among the tumor cells. No necrosis and prostate tissue were found in this preparation, so it was concluded to be a prostate mesenchymal tumor with a differential diagnosis of Stromal tumor of uncertain Malignant Potential (STUMP).

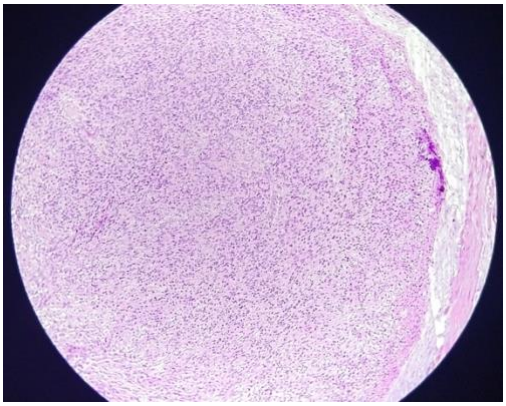
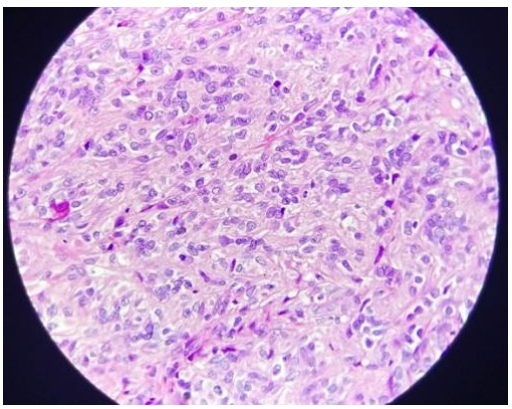


Figure 1. Proliferation of hypercellular tumor cells arranged in fascicles and irregular with ovoid-spindle cell nuclei was observed. 100x magnification.



Figures 2. The chromatin is quite smooth, the nucleoli are indistinct, and mitosis is difficult to find. Multiple hyperchromatic atypical enlarged core foci. 400x magnification.

Postoperatively, an contrast-enhanced CT-Scan of the abdomen was performed, in order to determine possible spread. On examination, the urinary vesica area showed mass infiltration on the right posterolateral wall, without lymphadenopathy the paraaortic or inguinal areas, and there was no impression of metastasis to other tissues, so it was judged that the infiltration in the urinary vesica originated from a prostate mass (**Figures 4**).

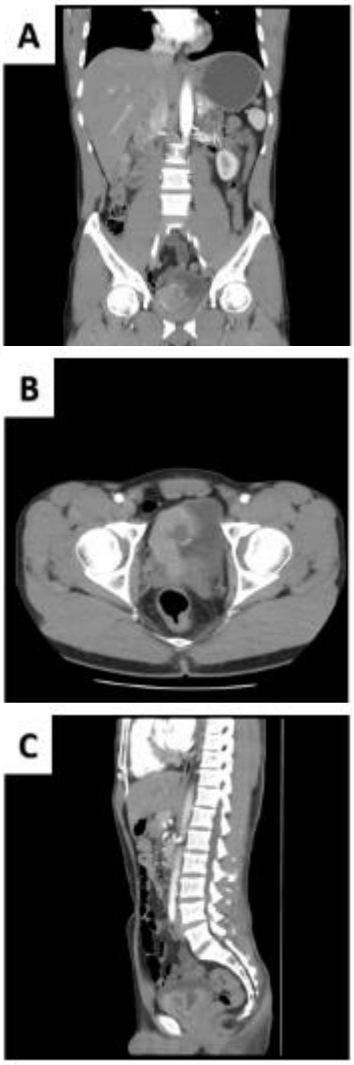


Figure 4. (A). Contrast-enhanced CT-Scan of the Abdomen with Coronal plane. (B). Axial plane, and (C). Sagittal plane, appearance of a calcified prostatic mass infiltrating the posterolateral wall of the urinary vesica.

DISCUSSION

Benign prostate hyperplasia (BPH) tissue and stromal neoplasia must be distinguished, with spindle cell neoplasms often found in the prostate gland.[5] WHO classifies prostate mesenchymal tumors into 2 most common types, prostate stromal sarcoma (PSS) and stromal tumor of uncertain malignant potential (STUMP).[6]

In prostatic mesenchymal tumors, there is enlargement of the size, most patients present with non-specific symptoms with abnormal DRE / rectal touche results, and normal PSA levels.[6] Signs and symptoms are acute and chronic obstruction, hematuria, hematospermia, dysuria, and rectal pressure/fullness. Normally PSA levels increase due to overproduction of glycoproteins from kallikreins produced by prostate epithelial cells, so proliferation in stromal cells will not increase PSA levels. Due to the rarity of STUMP cases, tumor tissue is often identified after post TURP prostate tissue biopsy in patients with BPH.[7] CT examination is useful to evaluate regional distant lymphadenopathy, as well as to assess the possibility of distant metastasis, although MRI is considered better in playing a role in the diagnosis and local staging of prostate mesenchymal tumors, detection of characteristic lesions, assessment of extraprostatic spread, and mapping the spread of surrounding disease.[8]

Mesenchymal tumors are capable of spreading to all zones in the prostate and surrounding tissues, this is due to tumor growth that is not limited to prostate cells alone, but in the prostate connective tissue and can spread to surrounding areas, but this spread is slow in the case of Prostatic STUMP.

In the case of prostate stromal sarcoma, spread is rapid and often metastasizes to distant organs, such as the lymph nodes, lungs and liver. Sarcoma has the potential for metastasis and generally requires surgical resection and is considered necessary for adjuvant therapy.[8]

A retrospective study showed 46% recurrence in patients with STUMP who did not get definitive resection, in another study 16% of patients with STUMP were found to have a tendency or change to prostate stromal sarcoma. Close monitoring and definitive resection in younger patients is recommended. Prostate stromal sarcoma has a more massive picture of cellular activity, mitosis, necrosis, and stromal growth than prostatic STUMP.[9]

In a study by Gaudin et al in 1998, 4 histologic patterns of prostatic STUMP were identified: 1) Hypercellular stromal with random atypical cytologic associated with benign glands; 2) Hypercellular stroma with minimal atypical cytology associated with benign glands; 3) Hypercellular stroma with or without atypical cytology associated with benign glands in a leaf-shaped growth pattern similar to phyllodes tumors; and 4) Hypercellular stroma without atypical cytology and without glands.[8] In other case reports, the histopathologic pattern of Prostatic STUMP was described, the presence of spindle cells, with an eosinophilic pattern (smooth muscle-like appearance), a pattern with irregular atypical stromal cells, a phyllodes-like pattern, and a myxoid pattern, these patterns can also merge.[5]

The difficulty may be due to the rarity of the lesions, and the limited expertise of pathologists in reading these cases. Moreover, since the tissue obtained is usually from very small samples, histologic distinction between spindle cell lesions in stromal neoplasms is generally more difficult to distinguish than in epithelial neoplasms, but immunostaining can easily clarify this issue.[5] STUMP and Prostate stromal sarcoma share the common feature of progesterone receptor expression, and this is consistent with their origin from the hormonal response of prostate mesenchymal cells, what makes them distinctive is that almost all of these tumors are CD34 positive.[8] However, this cannot be the sole benchmark as progesterone receptors are also expressed on smooth muscle tumor cells.[10] Our limitation in this case lies in the immunohistochemistry test which is not available in our health service.

CONCLUSION

Mesenchymal tumors are still very rarely reported cases, limited cases and long-term follow-up reports are still a shortcoming in determining the standard of therapy, given the possibility that the tumor can lead to a malignancy that has a high risk of metastasis.

REFERENCES

1. Sekhoacha M, Riet K, Motloung P, Gumenku L, Adegoke A, Mashele S. Prostate Cancer Review: Genetics, Diagnosis, Treatment Options, and Alternative Approaches. *Molecules*. 2022 Sep 5;27(17):5730.
2. International Agency for Research on Cancer, World Health Organization. Cancer Today: Estimated number of new cases in 2020, World, males, all ages. World Health Organization [Internet]. 2021 Mar; Available from: https://gco.iarc.fr/today/online-analysis-table?v=2020&mode=cancer&mode_population=continents&population=900&populations=900&key=asr&sex=0&cancer=39&type=0&statistic=5&prevalence=0&population_group=0&ages_group%5B%5D=0&ages_group%5B%5D=17&group_cancer=1&include_nmsc=0&include_nmsc_other=1
3. Mottet N, Cornford P, Van den bergh RCN, Briers E, De Santis M, Gillessen S, et al. PROSTATE CANCER. In: European Association of Urology Guidelines. European Association of Urology; 2022. (2022).

4. Partin AW, Dmochowski RR, Kavoussi LR, Peters CA, Campbell MF, Walsh PC, et al., editors. Campbell-Walsh-Wein Urology. Volume 3: in Campbell-Walsh-Wein Urology. Partin, A.W., ed. Dmochowski, R.R., Kavoussi, L.R., Peters, C.A. Twelfth edition. Philadelphia, PA: Elsevier; 2021. 2345 p.
5. McKenney JK. Mesenchymal tumors of the prostate. *Mod Pathol.* 2018 Jan;31:133–42.
6. Humphrey PA, Moch H, Cubilla AL, Ulbright TM, Reuter VE. The 2016 WHO Classification of Tumours of the Urinary System and Male Genital Organs—Part B: Prostate and Bladder Tumours. *Eur Urol.* 2016 Jul;70(1):106–19.
7. De Berardinis E, Busetto GM, Antonini G, Giovannone R, Di Placido M, Maglioccia FM, et al. Incidental Prostatic Stromal Tumor of Uncertain Malignant Potential (STUMP): Histopathological and Immunohistochemical Findings. *Urol J.* 2012 Jan;79(1):65–8.
8. Marcal LP, Surabhi VR, Ramani NS, Katabathina VS, Paspulati RM, Prasad SR. Mesenchymal Neoplasms of the Prostate and Seminal Vesicles: Spectrum of Disease with Radiologic-Pathologic Correlation. *Radiographics.* 2022 Mar;42(2):417–32.
9. Kass-Illiya A, Karavaggelis A, Koupparis A. Prostatic Stromal Tumour of Uncertain Malignant Potential (STUMP): A Case Presentation and Literature Review. *J Urol Forecast.* 2018 Feb 13;1(1):1002.
10. Roos FC, Sommer S, Hampel C, Melchior SW, Thüroff JW. Extraprostatic Spindle Cell Stromal Tumor of the Prostate: Case Report. *Urology.* 2008 Jun;71(6):1226.e13-1226.e15.