International Journal of Medical Research & Health Sciences

www.ijmrhs.com Volume 3 Issue 1 (Jan- Mar) Coden: IJMRHS Copyright @2013 ISSN: 2319-5886

Received: 28th Nov 2013 Revised: 18th Dec 2013 Accepted: 21st Dec 2013

Case report

PRIMARY UROTHELIAL CARCINOMA OF PROSTATE: A RARE CASE REPORT

*Vandana Gangadharan[1], Geetha Prakash[2], Eswari V[3], Indhu Kannan[4]

[1]Assisstant Professor, [2]Professor and HOD, [3]Associate Professor, [4] Post Graduate, Department of Pathology, Meenakshi medical college, hospital and Research institute, Enathur, Tamilnadu, India

*Corresponding author email: vandanagangadharan@gmail.com

ABSTRACT

Primary urothelial carcinoma of the prostate is a rare clinicopathological entity which as a rule bears an unfavourable prognosis. We report a case of a 75 year old male who presented with a history of voiding difficulty. With a provisional diagnosis of Benign Prostate Hyperplasia both clinically and by needle biopsy a Trans Urethral Resection was undertaken. Histopathology showed acini lined by malignant transitional epithelial cells with stromal invasion. No primary in the bladder was detected on the investigation. A CK 7/ CK 20 copositivity on Immunohistochemistry confirmed our diagnosis of Primary Urothelial Carcinoma of Prostate.

Key words: Urothelial, carcinoma, prostate, primary

INTRODUCTION

Transitional cell carcinoma of prostate is carcinoma of urothelial origin. The reported incidence of prostatic transitional cell carcinoma ranges from 21.8 – 36.7% depending mainly on the manner of examination.[1,2] Urothelial carcinoma of the prostate is rarely primary and usually represents synchronous or metachronous spread from carcinoma of bladder and urethra.[3] The frequency of primary urothelial carcinoma, ranges from 1- 4% of all prostate tumours in adults.[3,4] Most patients are older with a similar age distribution to urothelial carcinoma of the bladder i.e. 45 to 90 years.[4] The primary prostatic transitional cell carcinoma involves the entire prostatic urethra particularly areas near the verumontanum, the large prostatic duct and nearby acini. They presumably arise from urothelium lining the prostatic urethra and the proximal portion of prostatic ducts. It has been postulated that these may develop through a hyperplasia – dysplasia sequence, possibly from reserve cells within the urothelium.[5] Stephen et al [6] also suggests that tumour originating in the prostate may be the result of malignant transformation of prostatic urothelium. On the other hand secondary prostatic transitional cell carcinoma mainly involves the bladder neck or posterior prostatic tissue and results from the direct pagetoid spread of urothelial carcinoma in situ or a direct pathologic invasion of bladder urothelial carcinoma. However whether primary or secondary transitional cell carcinoma of prostate is believed to have a poor prognosis.[7]

CASE REPORT

A 75yr old male patient presented with a 3 month history of voiding difficulty, symptoms of nocturia and very few episodes of dysuria. This was not associated with significant anorexia or weight loss. No other positive history was elicited. Serum PSA done was within normal limits. Ultrasonography revealed prostatic enlargement without any nodules.

Initial prostatic biopsy with a provisional diagnosis of Benign Prostatic Hyperplasia reported focal acini showing hyperplasia with low grade PIN changes.

The patient was followed with Trans Urethral resection of prostate which revealed prostatic acini with adenomatous hyperplasia and a focus of ducts lined by malignant transitional epithelial cells with mitotic figures and areas of necrosis and stromal invasion. – suggesting Transitional cell carcinoma of prostate.

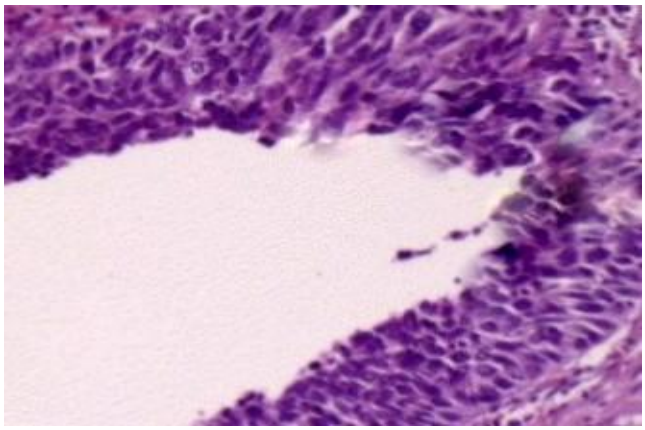

Fig 1: Urothelial Carcinoma Prostate 40x

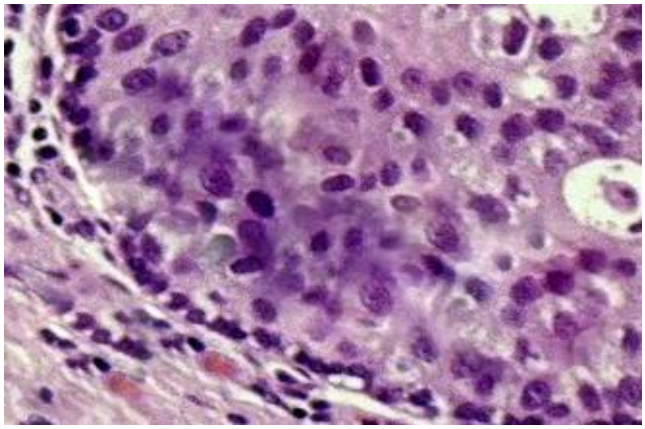

Fig 2: High grade cytological features (40x)

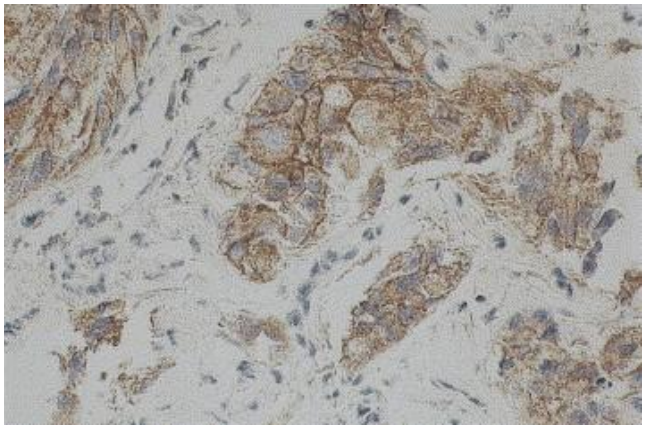

Fig 3: Cytokeratin 7 positivity (40x)

The urinary bladder was evaluated with clinical and ultrasonography to rule out secondary TCC prostate from a bladder primary carcinoma. This turned out to be negative. Immunohistochemisty with CytoKeratin 7 (CK 7) and Cytokeratin 20 (CK 20) was positive while Prostate Specific Antigen (PSA) was negative which confirmed our diagnosis.

DISCUSSION

Prostate cancer is one of the most common cancers in men. Prostatic cancer occurs microscopically in up to 50% men by the age of 50 and almost all men aged 80 years showed some microscopic evidence of prostate cancer. [8] Besides the garden variety of prostatic adenocarcinoma many variants and a wide histological spectrum have been described. These include mucinous carcinoma, neuroendocrine carcinoma, sarcomatoid carcinoma, squamous cell carcinoma, urothelial carcinoma etc.[3]

Primary urothelial carcinoma of prostate is rare with an incidence ranging from 1-4%[3,4] and arises either from prostatic urethra or from the urothelial lining of the larger periurethral prostatic ducts.[9] Patients usually present with symptoms of haematuria, urinary obstruction or prostatitis as was seen in our case.[3,10] Wadhwa et al [11] describes an atypical case presenting as bleeding per rectum due to a rectal ulcer. Digital rectal examination is abnormal in the majority of cases but is rarely the presenting sign.[10] Clinically urothelial carcinoma of prostate may be mistaken for nodular hyperplasia or prostatitis which was the provisional diagnosis in our case too.[3] Serum prostate specific antigen (PSA) which is the cornerstone in the diagnosis of prostatic adenocarcinoma is not elevated in primary urothelial carcinoma of prostate (< 4 ng/dl).[3] Radiological findings can overlap and play limited role in the diagnosis of unusual neoplasms of prostate including urothelial carcinomas.[12] Most cases are diagnosed by TUR or less often by needle biopsy.[13] TURP is preferred due to more false negative reports with needle biopsy as seen in our case as well. However, in all suspected cases of primary urothelial prostate cancer the possibility of secondary involvement from an apparent or occult bladder primary must be excluded. This may require random biopsies of urinary bladder mucosa.[14]

Histologically the diagnostic criteria for primary prostatic urothelial carcinoma are identical to those for urothelial cancer of the bladder; most cancers are moderately or poorly differentiated and usually associated with prominent chronic inflammation.

Squamous metaplasia is rare.[3] They may be seen to spread by invasion of prostatic stroma initially. Local spread beyond prostate gland as well as metastasis may occur.[10] Distinguishing urothelial carcinoma from prostatic adeno carcinoma is clinically important because of the oestrogen unresponsiveness of the former.[3] Prostatic adenocarcinoma may respond to hormonal therapy and cystoprostatectomy may not be needed. Diagnosis also determines the stage for prognostication.[15] Urothelial Carcinoma is usually distinguished from poorly-differentiated Prostatic AdenoCarcinoma by its histopathological characteristics (Fig 1) including the presence of solid nests of cells associated with dense or abundant cytoplasm and striking nuclear pleomorphism, with the absence or rarity of glandular lumina. The serum free PSA level is a main marker for prostate adenocarcinoma screening [15] .In difficult cases IHC may be mandatory. The sensitivity and specificity of PSA are high in prostate cancer, at 100% sensitivity. In poorly-differentiated prostate cancer and PAC, the expression levels of PSA may reach 85–95%. PSA is the oldest and most commonly used immunohistochemical marker to identify cancers of prostatic origin.[16] CK7 and CK20 are also useful markers to distinguish PAC from UC. Bassily et al[17] studied the expression of CK7 and CK20 in PAC and UC, and estimated their usefulness for distinguishing between the two tumors. In the prostatic and metastatic tumors, neither was positive for the markers. However, 61% of the UC cases were positive for CK7 and CK20.

CONCLUSION

Primary urothelial carcinoma is a rare type of prostatic carcinoma which as a rule bears an unfavourable prognosis. As a primary tumor it makes only 1-4 % of tumors of the prostate. It originates in the poorly differentiated reservoir cells of the prostatic periurethral ductus which explains why diagnosis is most often obtained in advanced stages thus limiting its management to radical surgery. Its distinction from prostatic adenocarcinoma is pertinent for both treatment and prognostication. Thus Transitional Cell Carcinoma should be considered as a differential diagnosis in cases with obstructive symptoms and normal PSA.

REFERENCES

1. Lerner SP, Shen S. Pathologic assessment and clinical significance of prostatic involvement by transitional cell carcinoma and prostate cancer. Urol Oncol. 2008; 26(5):481-85
2. Shen SS, Lerner SP, Muezzinoglu B, Truong LD, Amiel G, Wheeler TM. Prostatic involvement by transitional cell carcinoma in patients with bladder cancer and its prognostic significance. Hum Pathol Jun 2006; 37(6):726-34
3. Bostwick DG, Eble JN (eds): Urologic surgical pathology. St Louis Mosby, 2000 Pgno
4. Greene LF, O'Dea MF, Dockerty MB. Primary transitional cell carcinoma of prostate. J Urol 1976; 116:235-37
5. Karpas CM, Moumgis B. Primary transitional cell carcinoma of the prostate: possible pathogenesis and relationship to reserve cell hyperplasia of prostatic periurethral ducts. J Urol 1969;101:201-05
6. Stephen W. Hardeman and Mark S Soloway. Transitional cell carcinoma of prostate : Diagnosis, staging and management. World J Urol. 1988;6:170-74
7. Varghese SL, Grossfeld GD. The prostatic gland : malignancies other than adenocarcinomas. Radiol Clin North America 2000; 38 : 179-202
8. Cho JY. Prostate In: Kim S H editor. Radiology Illustrated: Uroradiology. Philadelphia, P A:Saunders, 2003:571-606
9. Pickup M, VanTH, Der Kwast. My approach to intraductal lesions of the prostate gland. J clin Pathol 2007;60(8):856-65
10. David J Grignon. Unusual subtypes of prostate cancer. Modern Pathology. 2004;17:316-27
11. Wadhwa P, Mandal AK, Singh SK, Goswami AK, Sharma SC, Joshi K et al., Primary transitional cell carcinoma of the prostate presenting as a rectal ulcer. Urol Int. 2004; 72(2):176-77
12. Chang JM, Lee HJ, Lee SE, Byun SS, Choe GY, Kim Sh etal., Unusual tumours involving the prostate : radiological – pathological findings. British journal Of Radiology.2008;81: 907-15
13. Oliai BR, Kahane H, Epstein JI. A clinicopathologic analysis of urothelial carcinomas diagnosed on prostate needle biopsies. Am J surg pathol 2001;25:794-801

14. Young RH, Sringley JR, Amin MB. Variants of prostatic adenocarcinoma, other primary carcinomas of prostate and secondary carcinoma. In: Tumours of the prostate gland, seminal vesicles, male urethra and penis. Armed forces institute of pathology: Washington D C, 2000,217-55
15. Xiaoqing Yang, Chen Xu, Jianing Guo, Chunrui Yang, Yuming Yang, and Ruifa Han. A novel subtype of primary prostatic adenocarcinoma : A case report. Oncol Lett. 2013; 6(5): 1303–06
16. Epstein JI., PSA, PAP as immunohistochemical markers in prostate cancer. Urol Clin North Am. 1993;20:757–70
17. Bassily NH, Vallorosi CJ, Akdas G, Montie JE, Rubin MA. Coordinate expression of cytokeratins 7 and 20 in prostate adenocarcinoma and bladder urothelial carcinoma. Am J Clin Pathol. 2000;113:383–88