

Primary Squamous cell carcinoma of prostate: A diagnostic dilemma Key Clinical message Primary Squamous cell carcinoma of prostate: A diagnostic dilemma

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Abstract

Prostate squamous cell carcinoma is a rare entity with poor prognosis and it should be considered in patients with normal PSA ranges and symptoms of urinary obstruction. Prostate carcinoma is the most common malignancy among male population. [1] Majority of cases are diagnosed as adenocarcinoma. Pure squamous cell carcinoma is a rare entity representing less than 1% of prostate carcinoma.[2, 3] It usually occurs in 7th decade of life with symptoms of urinary obstruction and bone pain in case of bone metastasis.[1, 4] About half of the cases arise post hormonal or radiation therapy to prostate adenocarcinoma, however de novo cases with no history of prostate disease have been reported in patients.[5] These findings suggest multiple etiologies for this disease. There are many hypothesis such as squamous differentiation in prostate cancer originates from urothelial lining of prostatic urethra or urothelial ducts. Other suggests that pluripotent stem cells being multi directional can give rise to it.

Keywords: squamous cell carcinoma, prostate, diagnostic dilemma.

Introduction

Prostate carcinoma is the most common malignancy among male population. [1] Majority of cases are diagnosed as adenocarcinoma. Pure squamous cell carcinoma is a rare entity representing less than 1% of prostate carcinoma.[2, 3] It usually occurs in 7th decade of life with symptoms of urinary obstruction and bone pain in case of bone metastasis.[1, 4] About half of the cases arise post hormonal or radiation therapy to prostate adenocarcinoma, however de novo cases with no history of prostate disease have been reported in patients.[5] These findings suggest multiple etiologies for this disease. There are many hypothesis such as squamous differentiation in prostate cancer originates from urothelial lining of prostatic urethra or urothelial ducts. Other suggests that pluripotent stem cells being multi directional can give rise to it.

Morphologically squamous differentiation in prostate cancer can be encountered in pure form or in association with adenocarcinoma, urothelial carcinoma or sarcoma. Due to its multiple possible origins it is difficult to determine whether the squamous component develops through divergent differentiation from adenocarcinoma following treatment, represents squamous differentiation of transitional cell carcinoma or is a pure prostate malignancy.

As this is an aggressive malignancy with poor prognosis than adenocarcinoma and it metastasizes early to bone, liver and lungs so understanding the biology of this tumor might help to develop more efficient therapies.[2]

We discuss our findings for this case to help pathologists encountering the same problem.

Case report

An 80 years old male presented in our institution hospital with clinical sign and symptoms of acute urinary retention complaining of voiding difficulties for 3 months. Patient had past history of hemorrhoidectomy with no co-morbid. Physical examination was unremarkable. Digital rectal examination demonstrated an enlarged, fixed prostate, firm in consistency. On cystoscopy urinary bladder appeared normal. No lesion was seen. No history of radiation, hormonal therapy or tumor was given on any other site.

MRI scan shows low signal intensity mass lesion in left peripheral and transition zone. (Figure 1)

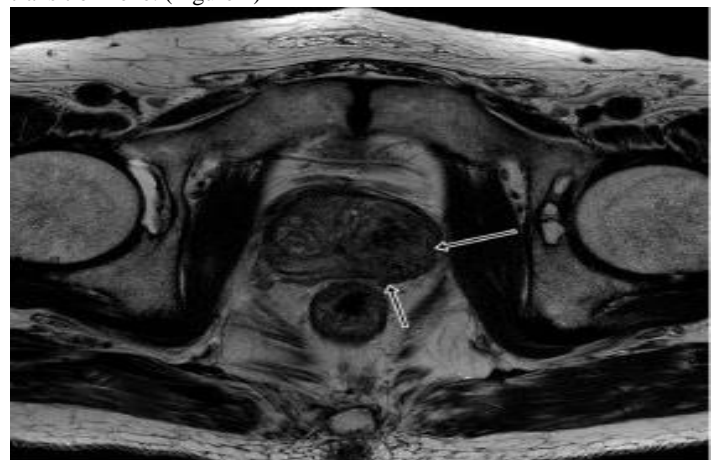


Figure 1: T2 weighted MR image showing low intensity signal in left peripheral and transitional zone of prostate

Serum PSA and PSAP levels were in normal range (1.2ng/ml). TURP-guided biopsy of prostate was performed due to urinary obstruction, in which 20gm of prostatic tissue was removed and sent for histopathology.

Histopathological findings:

Grossly specimen was in form of multiple grey white prostatic chips measuring in total of 20gm. Microscopic sections from prostatic tissue

revealed an infiltrating neoplastic lesion arranged in clusters and nests. Cytologically individual tumor cells were large and cohesive with vesicular nuclei, prominent nucleoli, abundant glassy eosinophilic cytoplasm and well defined cell borders. Individual cell keratinization and keratin pearl formation was seen. Perineural invasion was noted. No other differentiation was seen. (Figure 2)

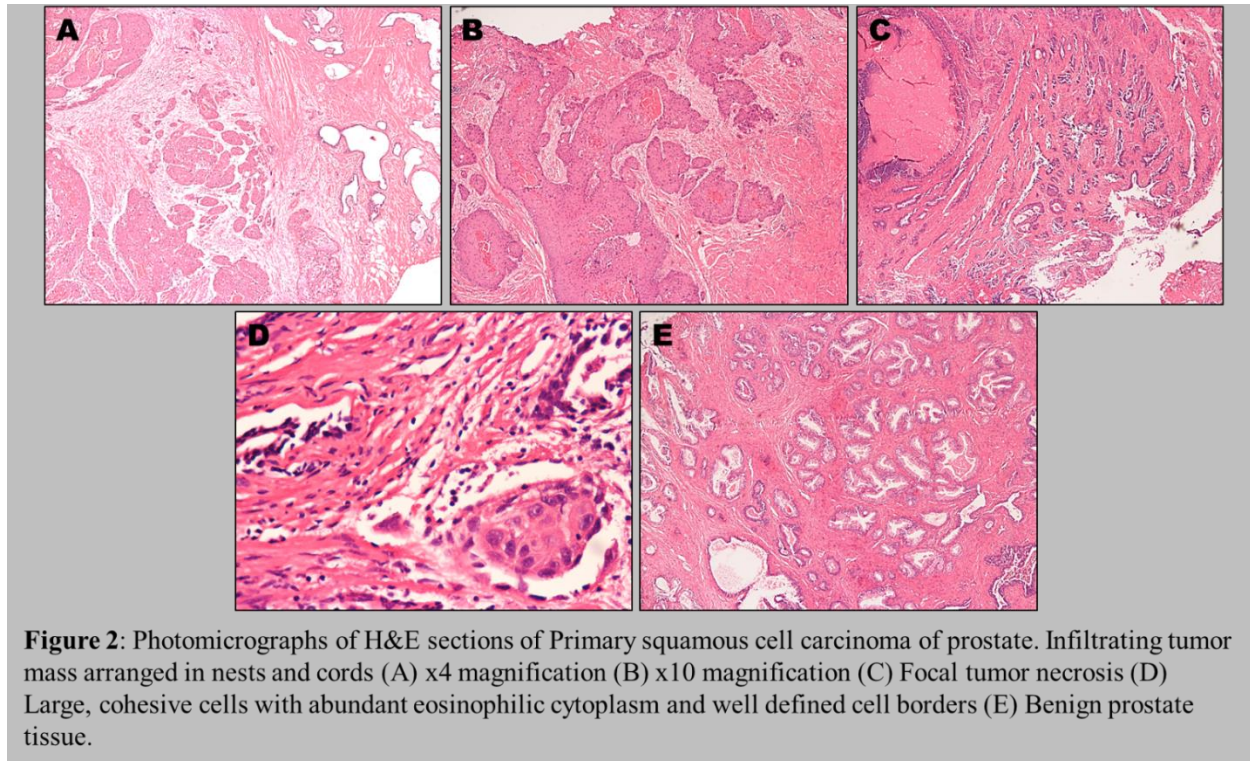


Figure 2: Photomicrographs of H&E sections of Primary squamous cell carcinoma of prostate. Infiltrating tumor mass arranged in nests and cords (A) x4 magnification (B) x10 magnification (C) Focal tumor necrosis (D) Large, cohesive cells with abundant eosinophilic cytoplasm and well defined cell borders (E) Benign prostate tissue.

Immunohistochemical stains PSA and PSAP were negative in tumor cells where as high molecular weight cytokeratins CKAE1/AE3 and 34 β E12 were positive. Diagnosis of moderately differentiated squamous cell carcinoma with primary origin from prostate was made after following Motts criteria.

Discussion

Prostatic squamous cell carcinoma is a rare pathologic and clinical entity accounting for 0.6-1% of all prostate malignancies. Its histogenesis is not well understood. In more than 50% of cases it occurs post radiation and post hormonal treatment for adenocarcinoma of prostate. [4, 5]

Several theories have been proposed to explain histogenesis of primary squamous cell carcinoma. It may arise from squamous metaplasia developing due to metaplastic transformation of adenocarcinoma, collision tumor arising from metaplastic foci post radiation or post hormonal therapy and possible deviation from pluripotent stem cells capable of multidirectional differentiation.[6, 7] It has been postulated squamous component arises from squamous metaplasia of basal or reserve cells of acini and ducts which can be due to different causes including chronic prostatitis, infarction, post radiation and post hormonal prostate or urothelial carcinomas.[1, 7, 8]

Strict criteria proposed by Mott indicates that in order to diagnose a prostate biopsy as pure squamous cell carcinoma that includes clear malignant features (such as disorganized growth pattern, cellular aplasia,

invasion) features of squamous differentiation including keratinization, squamous pearls and distinct intercellular bridges, lack of glandular/acinar component, absence of primary squamous cancer elsewhere particularly within the bladder.[9]

Clinical features pointing towards diagnosis of squamous cell carcinoma includes low serum PSA and acid phosphatase levels so they have limited value in diagnosis.[3]

Conclusion:

We report a case of pure squamous cell carcinoma of prostate and unlike most of the cases previously reported our case lacked pre-existing history of hormonal or radiation therapy. Primary squamous cell carcinoma has poor prognosis so in cases where PSA levels are not significantly raised and have obstructive urinary symptoms it should be considered in differential diagnoses.

References:

- Munoz F, Franco P, Ciammella P, Clerico M, Giudici M, Filippi AR, et al. (2007) Squamous cell carcinoma of the prostate: long-term survival after combined chemo-radiation. *Radiation Oncology*.2(1):15.
- Abbott D, Iczkowski K. (2016) Squamous cell carcinoma of the prostate with concomitant adenocarcinoma in the absence of prior androgen deprivation therapy. *Case Rev Clin Pathol*.

3. Brunnhoelzl D, Wang J. Clinical Features, Prognosis, and Outcome of Patients with Pure Squamous Cell Carcinoma of the Prostate. *J Compr Cancer Res.* 2018;2(1):100008.
4. Mohan H, Bal A, Punia RPS, Bawa AS. Squamous cell carcinoma of the prostate. *International journal of urology.* 2003;10(2):114-116.
5. Arva NC, Das K. Diagnostic dilemmas of squamous differentiation in prostate carcinoma case report and review of the literature. *Diagnostic pathology.* 2011;6(1):46.
6. Al-Qassim Z, Mohammed A, Payne D, Stocks PJ, Khan Z. Squamous cell carcinoma of the prostate following treatment with an LHRH-agonist: a rare case of transformation of adenocarcinoma of the prostate. *Central European journal of urology.* 2014;67(1):26.
7. Wang J, Wang FW, LaGrange CA, Hemstreet GP. Clinical features and outcomes of 25 patients with primary adenosquamous cell carcinoma of the prostate. *Rare Tumors.* 2010;2(3):130-134.
8. Biswas T, Podder T, Lepera PA, Walker P. Primary squamous cell carcinoma of the prostate: a case report of a rare clinical entity. *Future science OA.* 2015;1(3).
9. Mott LM. Squamous cell carcinoma of the prostate: report of 2 cases and review of the literature. *The Journal of urology.* 1979;121(6):833-835.