



Signet-Ring Cell Change in Benign Prostatic Hyperplasia - A Rare Case Report

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Abstract

Signet-ring cell change (SCC) is a non-neoplastic condition that morphologically simulates signet ring cell carcinoma (SRCC) both of which are rare entities in the prostate. Herewith, we report a case of 66 year old man with benign prostatic hyperplasia showing SCC in the stroma and discuss the case from a review of published reports.

Introduction

SCC in the prostate is very rarely encountered. Identification of this lesion as a non-neoplastic condition is important to distinguish it from SRCC, a rare prostate malignancy. It is the lymphocytes and benign stromal cells in the prostate that exhibit the SCC.¹ SCC can also result from hormone therapy prior to surgical intervention. Signet ring cells can also be seen in the prostate as metastatic deposit or by direct extension from the urinary bladder. Our aim is to identify SCC and avoid misdiagnosis of SRCC.

Case Report(s)

A 66 year old man presented with symptoms of urinary obstruction. The serum PSA is 7.6 ng/ml. Transurethral resection of prostate was done. Histopathological examination of TURP bits showed features of fibromusculoglandular hyperplasia of prostate. A significant finding was the presence of vacuolated cells with nuclei pushed to the periphery, in the stroma. These cells mimicked signet ring cells. The possibility of cancer was ruled out as multiple sections did not reveal the histopathological features of malignancy. Special stains like Alcian blue, PAS and mucicarmine stains were also negative.

Discussion

Signet ring cells in the prostate is extremely rare and can be seen in both non-neoplastic and neoplastic

conditions. A review of the literature also shows case reports of signet ring cells present as artifacts. Alguacil-Garcia have reported 20 cases of transurethral prostatectomy showing signet ring cells in the stroma associated with dense lymphocytic infiltrates.¹ The absence of mucin and immunoreactivity for PSA and PSAP was also observed. Ultrastructurally, degenerated lymphocytes as well as vacuolated smooth muscle cells were noted in their study. They concluded in their study that areas of chronic prostatitis in TURP specimen usually showed degenerated lymphocytes and stromal cells with signet ring appearance, an artifact induced by TURP procedure^[1,2].

Signet ring appearance can mimic carcinoma. A review of the literature reveals 43 cases of primary SRCC of prostate reported till date^[3]. Almost all of the reported cases have been associated with high grade prostatic adenocarcinoma^[3,4]. Serum PSA value was usually significantly elevated. These tumors exhibit more aggressive behaviour than conventional adenocarcinoma and are associated with poor prognosis^[5]. The signet ring cells in these cases comprised of >25% of the tumor. Special stains for mucin was negative. Immunohistochemically the cells were positive for PSA and PSAP^[6].

SRCC metastasizing to the prostate is an extremely rare phenomenon. However direct extension from the urinary bladder needs to be ruled out.

SCC can be induced by prior hormone therapy in cases of prostatic adenocarcinoma.

Conclusion

Artifactual presence of signet ring cells in the prostate can occur and needs to be distinguished from carcinoma, primary or metastatic.

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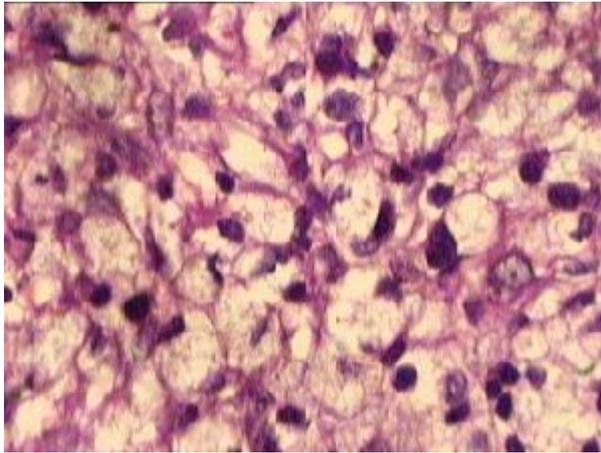
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Illustrations

Illustration 1

Fig: Photomicrograph showing signet ring cell change. (H&E X400)



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