International Journal of Health Sciences and Research
www.ijhsr.org ISSN: 2249-9571

*Case Report*

# A Not So Simple Case of Benign Prostatic Hyperplasia with a Foamy Masquerader- A Lesson to Learn

Namrata Rao, Suman K

Assistant Professor, Department of Pathology, Melaka Manipal Medical College, Manipal Academy of Higher Education, Manipal

Corresponding Author: Suman K

## ABSTRACT

A 79 year old male patient presented with acute retention of urine. Suspecting benign prostatic hypertrophy, transurethral resection of prostate was done. Initially the tissue bits which were submitted showed features of benign prostatic hyperplasia with acute or chronic prostatitis. Few prostatic chips on resections showed small foci of foamy cells supporting the diagnosis of an inflammatory process, however careful examination revealed that these cells were arranged in small glandular pattern and had prominent nucleoli. Prostatic carcinomas always pose a diagnostic difficulty. It is vital to be aware of the pitfalls in its diagnosis.

***Key Words-*** prostate, foamy, adenocarcinoma, inflammation

## INTRODUCTION

Prostatic biopsies have always been enigmatic from the pathologist's perspective. Numerous factors contribute to the pitfalls in diagnosis. The importance of identifying prostatic adenocarcinoma and its variants cannot be over emphasized. The foamy cell variant of prostatic adenocarcinoma is a rare variant characterized by cells having abundant foamy cytoplasm. This case report highlights the difficulties encountered in diagnosing a case of foamy cell variant of prostatic adenocarcinoma.

## CASE REPORT

A 79 year old male patient presented with acute retention of urine. He was catheterized at a peripheral health centre and was referred to our hospital for further management. A clinical diagnosis of benign prostatic hypertrophy was made and transurethral resection of prostate was done. The levels of prostate specific antigen were not estimated. The prostatic chips were sent for histopathological examination. These chips amounted to 14 grams. Multiple tissue bits were submitted in two cassettes. On microscopy proliferation of benign prostatic acini was seen lined by two layers of cells. The stroma showed dense mixed inflammatory cell infiltrate composed of neutrophils, lymphocytes, eosinophils, plasma cells and lymphoid follicles. The prostatic epithelium and the lumen of the acini showed intraepithelial neutrophilic infiltrate. Some of the cells showed reactive atypia. A diagnosis of benign prostatic hyperplasia with acute or chronic prostatitis was made. Few more tissue bits were submitted for processing. The resections showed similar features. One of the prostatic chip showed a small focus of aggregates of foamy macrophages on low power. This supported the diagnosis of a response to an inflammatory process. However on high power, it was alarming to note that these so called macrophages were

arranged in a pattern. They were forming small glandular structures. These cells had abundant foamy cytoplasm. The nuclei showed mild pleomorphism, some of the nuclei were hyperchromatic and few of them had prominent nucleoli. The glandular pattern and prominent nucleoli were in favour of these cells being malignant (Fig 1 and Fig 2). The entire tissue was processed and a similar focus was seen in three prostatic chips. This was finally reported as prostatic adenocarcinoma, Gleason grade6 (3+3).

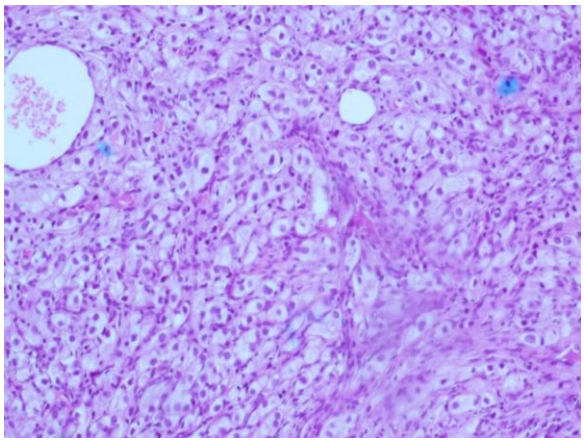

**Fig 1: Aggregates of foamy cells on low power (H&E, 10x)**

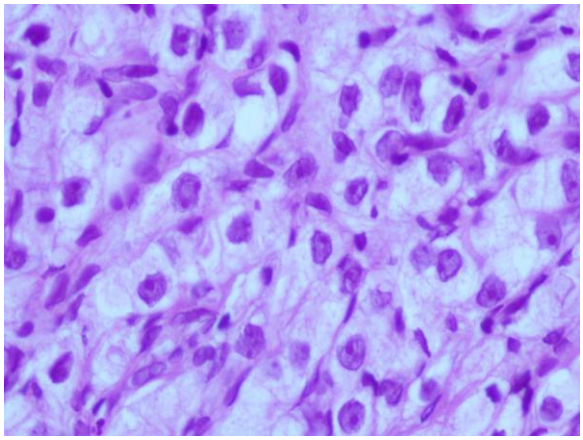

**Fig 2: Tumor cells having abundant foamy cytoplasm and prominent nucleoli (H&E, 40x)**

## DISCUSSION

Nelson and Epstein first described the foamy cell variant of prostatic adenocarcinoma in 1996. [(1)] It is a difficult entity to diagnose since the tumor cells appear deceptively benign. It is common between 50 to 78 years of age. The tumor cells are usually arranged in an infiltrative pattern. [(2)] Cases in which the foamy cells having a pyknotic nuclei and no nucleoli, AMACR can be done to prove the neoplastic nature of the cells. [(3)] PSA can also be done to which the tumor cells are immunoreactive. [(4)]

Diagnosis of prostatic adenocarcinomas always poses a diagnostic challenge. The common causes of errors in diagnosis include suboptimal submission of tissue, ambiguity in cytology and benign mimics such as atrophy, inflammatory atypia, basal cell hyperplasia and atypical adenomatous hyperplasia. [(5,6)] The challenges faced in this case were, initially the entire tissue was not processed, there was dense inflammation masking the prostatic acini, aggregates of foamy cells were actually the tumor cells arranged in a glandular pattern. Processing the entire tissue helps in revealing even a small focus of malignancy, as in this case. In cases where malignancy is not suspected, ultrasonography reports and PSA levels are not available, processing the entire tissue is a simple way of avoiding an error in diagnosis.

## CONCLUSION

Numerous factors contribute to errors in diagnosing a case of prostatic adenocarcinoma and PSA levels are not always available. One such error which can be avoided easily, as seen in this case is submitting the entire tissue for processing. Dense inflammatory process also warrants careful examination. These inflammatory cells can mimic as well as mask an underlying neoplastic process. The presence of foamy cells necessitates systematic evaluation in order to exclude an underlying malignancy. These simple measures may prove to be beneficial and may help in overcoming the limitations faced in the diagnosis of malignancies in prostatic biopsies.

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How to cite this article: Rao N, Suman K. A not so simple case of benign prostatic hyperplasia with a foamy masquerader- a lesson to learn. Int J Health Sci Res. 2019; 9(1):306-308.

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