



MUCINOUS ADENOCARCINOMA OF PROSTATE: A DIFFERENT AND A RARE ENTITY.

Manmeet Kaur*

MD Pathology, Associate Professor (Department of Pathology, GGSMC&H, Faridkot).
*Corresponding Author

Sarita Nibhoria

MD Pathology, Professor (Department of Pathology, GGSMC&H, Faridkot)

**Kanwardeep Kaur
Tiwana**

MD Pathology, Associate Professor (Department of Pathology, GGSMC&H, Faridkot)

Nisha Singla

MBBS, Junior Resident (Department of Pathology, GGSMC&H, Faridkot)

ABSTRACT

Although adenocarcinomas are the most common malignancy encountered in the prostatectomy specimens/ trucut biopsies, however, the other microscopic types like squamous cell carcinoma, adenosquamous carcinoma, basaloid carcinoma and mucinous adenocarcinoma can also be seen. Of these, mucinous adenocarcinomas are the least common variant of prostate cancer and represents only 0.2% of the total cases. It usually has no obvious symptoms, its usual clinical symptoms are frequency, dysuria and difficulty in voiding which are similar to benign prostate hyperplasia. The clinical significance of mucinous adenocarcinoma is that it differs from ordinary prostatic adenocarcinoma by the rarity of bony metastases, lack of hormone dependency and lesser degree of response to the radiation therapy.

KEYWORDS : Mucinous Adenocarcinoma, Prostate, Prostate specific antigen (PSA), Gleason score.

Introduction

Prostate cancer is the most common internal malignancy among men and is responsible for 10% of the total cancer deaths. The majority of the prostate cancers are adenocarcinomas for which Gleason grading is done. Almost 75% of the men diagnosed with prostatic cancer are more than 65 years of age⁽¹⁾.

Mucinous/mucin secreting adenocarcinoma of the prostate also referred to as colloid adenocarcinoma. It is rare and one of the least common morphologic variants of the prostate cancer (0.2%).^{2,3} This tumor is defined as an entity with at least 25% of the tumor consisting of pools of extracellular mucin with exclusion of extraprostatic tumor site.⁽⁴⁾

Traditionally, mucinous adenocarcinoma of the prostate has been considered to be more aggressive than the more common non mucinous prostate adenocarcinoma as these tumors are less responsive to radiotherapy, although this notion has been challenged⁽⁵⁾. Given these considerations, the 2005 International Society of Urological Pathology Consensus Conference on Gleason Grading of Prostatic Carcinoma suggests that these tumors should be classified as Gleason score 8 (4 + 4).⁽⁶⁾ Thus, mucinous adenocarcinoma would be considered a high-risk finding that could well influence therapeutic decisions and treatment regimes. We hereby report a case of 51 year man who presents to our hospital with urological complaints.

Case Report-

A 51 year old man presented with chief complaints of difficulty in micturition, urinary urgency and dribbling of urine since 4 to 5 months. Per-rectal examination revealed a hard prostate. Radiological and biochemical investigations were ordered. CT scan revealed enlarged prostate with poorly defined prostatic mass measuring 68x65x55mm with involvement of right lower ureter and bilateral seminal vesicles. However, the patient's serum PSA level was only 0.35ng/ml (Normal 0-4ng/ml) which is highly raised in an adenocarcinoma (10-25ng/ml). Transurethral resection of prostate was planned and the prostatic chips were sent to pathology department for histopathological examination.

We received multiple grey white soft tissue pieces collectively measuring 2x2x1.5cm and weighing 15 gm. The entire tissue was blocked. The histopathological sections showed pools of extracellular mucin with presence of floating epithelial islands suggesting the possibility of Mucinous Adenocarcinoma (Figures 1,2).

Perineural and lymphovascular invasion was also seen in the submitted biopsy.

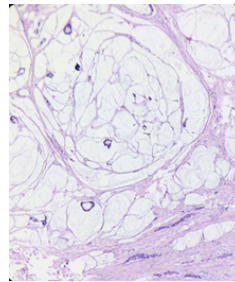


Figure 1

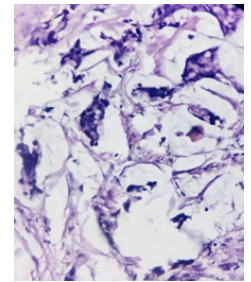


Figure 2

Discussion

Mucinous (Colloid) adenocarcinoma of prostate is one of the rare subtype (0.2%) of prostate cancer characterized by the presence of large pools of extra luminal mucin and involving at least 25% of the tumor volume.⁽⁷⁾ It was first described by McNeal in 1991 and was observed in 13 out of 33 mucin-producing prostatic adenocarcinomas.⁽⁸⁾

The aetiology of mucinous adenocarcinoma of the prostate is still unclear. It is thought that the mucinous adenocarcinoma of the prostate is similar to that of adenocarcinoma of the prostate, which is related to genetic, environmental, androgen and other factors. Dhom et al reported that the aetiology of mucinous adenocarcinoma of the prostate might be related to the endocrine epithelium of the prostate.⁽⁹⁾

A recent study in 2009 by Westphalen AC included 99 patients of prostate cancer of which mucinous adenocarcinoma was diagnosed in only 3 patients (3%). The PSA levels were 7.6ng/ml, 4.6ng/ml and 6.2ng/ml respectively, which is concordance with our study.⁽¹⁰⁾

Osunkoya et al conducted a study over a period of 15 years in which 47 cases of mucinous carcinomas were diagnosed. This study concluded that mean age at diagnosis was 56 years (range: 44 to 69 years), mean preoperative prostate-specific antigen (PSA) level was 9.0 ng/mL (range: 1.9 to 34.3 ng/mL).⁽¹¹⁾

Mucinous adenocarcinomas can present with urinary obstruction (70.2%), haematuria (25.5%), and vesical irritability (17.0%). Epstein and Lieberman suggested that elevated levels of PSA may be found only in advanced stages of the disease and not in initial stages. Positive immunohistochemical reactivity of prostate-specific antigen with positive acid phosphatase and negative carcinoembryonic antigen can confirm the diagnosis of prostate adenocarcinoma. Furthermore, the presence of signet ring cells in the specimen may indicate an even worse prognosis than just MC alone.⁽⁵⁾

This tumor is said to differ from ordinary prostatic adenocarcinoma by rarity of bony metastasis, lack of hormone dependency and less degree of response to radiation therapy.⁽¹⁾ It is generally accepted that surgical treatment is still the most effective method for the treatment of early mucinous adenocarcinoma of the prostate.⁽⁹⁾

Conclusion

Adenocarcinoma of the prostate is the most frequent malignant neoplasm in the man. Among the various types of the adenocarcinoma, mucinous adenocarcinoma is the least common (0.2%) variant of prostate cancer. Diagnosis can't be made on the basis of serum PSA levels because it raise only in the advance stages, so histopathological examination is necessary to make the diagnosis of mucinous adenocarcinoma of prostate.

REFERENCES

1. Juan Rosai. Male Reproductive System- Prostate and seminal vesicle. In: Rosai and Ackerman's Surgical Pathology, 10th ed. New York: Mosby Elsevier 2011. p.1295-600.
2. Grignon DJ. Unusual subtypes of prostate cancer. *Mod Pathol* 2004;17:316-27.
3. Dhom G. Unusual prostatic carcinomas. *Pathol Res Pract* 1990;186:28-36.
4. Epstein JI, Lieberman PH. Mucinous adenocarcinoma of the prostate gland. *Am J Surg Pathol* 1985;9:299-08.
5. Saito S, Iwaki H. Mucin-producing carcinoma of the prostate: review of 88 cases. *Urology* 1999;54:141-4.
6. Epstein JI, Allsbrook WC Jr, Amin MB, Egevad LL. The 2005 International Society of Urological Pathology (ISUP) Consensus Conference on Gleason Grading of Prostatic Carcinoma. *Am J Surg Pathol* 2005; 29:1228-42.
7. Epstein JI, Algaba F, Allsbrook WC Jr, et al. Acinar adenocarcinoma. In: Eble JN, Sauter G, Epstein JI, Sesterhenn IA, eds. WHO classification of tumours: pathology and genetics of tumours of the urinary system and male genital organs. Lyon, France. International Agency for Research on Cancer Press 2004:162-92.
8. Osunkoya AO, Epstein JI. Primary mucin-producing urothelial type adenocarcinoma of prostate: Report of 15 cases. *Am J Surg Pathol* 2007; 31: 1323-9.
9. Wullich B, Verelst S, Rohde V (2001). High frequency microsatellite instability in mucinous adenocarcinoma of the prostate. *J Uro* 165: 912-3.
10. Westphalen AC, Coakley FV, Kurhanewicz J, Reed G, Wang ZJ, JSimko JP. Mucinous Adenocarcinoma of the Prostate: MRI and MR Spectroscopy Features. *AJR* 2009; 193: W238-42.
11. Wu T, Cao D, Wang H, Yu X. Primary mucinous adenocarcinoma of the prostate: a case report and literature review. *Int J Clin Exp Med* 2016;9(5):8792-4
12. Guang-Zhen WU, Wang Q, Quan-Lin LI, Zhang Z, Tang QZ (2017) Mucinous Adenocarcinoma of Prostate: A Case Report and Review of Literature. *J Clin Case Rep* 7:955. doi: 10.4172/2165-7920.1000955