



Histopathology

A CASE REPORT ON PROSTATIC ADENOCARCINOMA WITH MUCINOUS FEATURES

Dr. Akshita Mehta	Junior Resident, Department of Pathology, IGMC Shimla.
Dr. Pooja Murgai*	Assistant Pathology, Department of Pathology, IGMC Shimla. *Corresponding Author
Dr. Kavita Mardi	Professor, Department of Pathology, IGMC Shimla.

ABSTRACT We present a case of primary adenocarcinoma of the prostate with mucinous feature. Mucinous adenocarcinoma (MC) of the prostate gland is rare morphological variant of Prostate carcinoma characterized by pools of extracellular mucin in >25% of tumor. A 72-year-old male presented to our hospital with urinary frequency, nocturia and voiding difficulties; on digital rectal examination enlarged prostate was observed without any palpable nodule. on Ultrasonography hypoechoic lesion was observed in left lobe of prostate suggestive of prostate tumor. A transurethral resection of prostate confirmed the diagnosis of Prostatic adenocarcinoma with mucinous features and Gleasons score 9(4+5). We report the cases due to the aggressive behaviour and uncommon diagnosis of mucinous variant of adenocarcinoma of the prostate. But it is seen that its proper diagnosis and treatment significantly contribute to favourable prognosis.

KEYWORDS : Mucinous adenocarcinoma, prostate cancer, case report

INTRODUCTION

Mucinous adenocarcinoma (MC) of the prostate gland is rare variants of prostatic carcinoma (<1%). MC is defined as at least 25% of the tumor consisting of pools of extracellular mucin with an extra prostatic tumor site ruled out¹. The primary mucinous tumors involving the prostate gland include mucinous (colloid) adenocarcinoma of the prostate, prostatic adenocarcinoma with mucinous features, and mucinous adenocarcinoma of the prostatic urethra (mucin-producing urothelial-type adenocarcinoma of the prostate).² Earlier, according to International Society of Urological Pathology Consensus Conference on Gleason Grading of Prostatic Carcinoma in 2005, it was suggested that these tumors should be classified as Gleason score 8 (4+4)³. Now, according to International Society of Urological Pathology Consensus Conference on Gleason Grading of Prostatic Carcinoma in 2014, grading of mucinous carcinoma of the prostate should be based on its underlying growth pattern rather than grading them all as pattern 4.⁴ MACP is believed to be less responsive to chemotherapy and more aggressive in behavior. We report one case of a primary adenocarcinoma of the prostate with mucinous features.

Case report

A 72-year-old man presented to our hospital with urinary frequency, nocturia and voiding difficulties. On digital rectal examination (DRE) enlarged prostate was observed without any palpable nodule. On Ultrasonography hypoechoic lesion was observed in left lobe of prostate suggestive of prostate tumor. The magnetic resonance imaging (MRI) revealed a 2.4× 1.1 cm mass in the left lobe of the prostate with cystic areas. There was no obvious lymphadenopathy or distant metastases. The patient's serum prostate-specific antigen (PSA) level was 1.955 ng/mL, and all the other routine blood investigations were within normal limits.

The patient underwent Trans urethral resection of prostate (TURP). We received multiple gray brown soft tissue pieces with mucoid material all together measuring 8 cm³. Histopathology of the specimens showed fibrocollagenous stroma infiltrated by tumor cells arranged in coalesced and fused glands. Areas of cribriforming of glands, papillary and glomeruloid pattern was also seen with luminal necrosis. In addition, large pools of extracellular and extraluminal mucin was seen with glands and clusters of tumor cells floating in it which was confirmed with Periodic Acid Schiff staining. The Gleason Score 9 was allotted (4+5) and the diagnosis of Prostatic Adenocarcinoma with mucinous features was given.

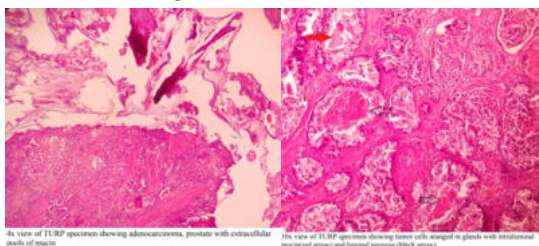


Fig view of TURP specimen showing adenocarcinoma, prostate with extracellular pools of mucin. Fig view of TURP specimen showing tumor cells arranged in glands with intraluminal mucin (black arrow) and luminal necrosis (black arrow)

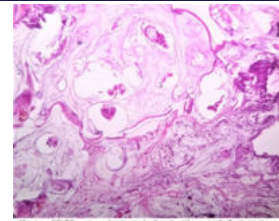


Fig view of TURP specimen showing pools of mucin with tumor cells floating in it

DISCUSSION

Mucinous adenocarcinoma of the prostate gland is one of the least common morphologic variants of prostatic carcinoma. The diagnosis of MACP relies on extraluminal pools of mucin found in more than 25% in prostatic tissue. The primary mucinous tumors involving the prostate gland include mucinous (colloid) adenocarcinoma of the prostate, prostatic adenocarcinoma with mucinous features, and mucinous adenocarcinoma of the prostatic urethra (mucin-producing urothelial-type adenocarcinoma of the prostate).² Mucinous adenocarcinoma of the prostate (previously referred to as colloid carcinoma of the prostate) is a rare morphological variant of prostate cancer. The incidence of mucinous adenocarcinoma of the prostate, defined by the presence of at least 25% of the tumor composed of glands with extraluminal mucin.³

It is important to note that when prostatic adenocarcinoma with extraluminal mucin is present in a TURP specimen or needle core biopsies a diagnosis of Prostatic adenocarcinoma with mucinous features should be rendered. This is due to the fact that the entire tumor (radical prostatectomy specimen) has to be present to confirm that the extraluminal mucinous component is greater than 25% before a definitive diagnosis of mucinous adenocarcinoma of the prostate can be made. In addition, if the extraluminal mucinous component is <25% in a radical prostatectomy specimen, then a diagnosis of 'Prostatic adenocarcinoma with mucinous features'⁴ should also be given. Before diagnosing a case of MACP it is important to rule out mucinous carcinoma, originating from the gastro-intestinal system and detailed medical history, endoscopy and imaging are important for the patient outcome.

The current guideline (ISUP 2020) states that grading of mucinous carcinoma of the prostate should be based on its underlying growth pattern rather than grading them all as pattern^{4,5}

Genetic abnormalities also have been detected in MACPs. ERG gene expression occurs in 50% of mucinous adenocarcinoma and TMPRSS2: ERG fusion gene identified in 83% of these prostate cancers. Additionally, MUC 2 immuno-expression was found in the mucinous elements of MACP. MACPs also can express PTEN in most cases.^{6,7}

Radical prostatectomy remains the main stay of treatment and shows a good prognosis.⁸

CONCLUSION

Prostatic Mucinous Carcinoma is a rare variant of Prostate Cancer. It is more difficult to diagnose this entity in a core biopsy or TURP samples due to smaller representative material. However, it is simpler to give a histopathological diagnosis of Prostate Carcinoma with mucinous features in such cases where only part of the tumor is represented and extent of exact mucinous component cannot be determined.

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