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Case Study

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WELL-DIFFERENTIATED PAPILLARY MESOTHELIOMA OF TUNICA VAGINALIS TESTIS: A RARE CASE REPORT

[1]Dr. Rajeev Sen, [2]Dr. Bharti Sharma, [3*]Dr. Ritesh Kumar Sheorain, [4]Dr. Nikita Prasad and [5]Dr. Pushpa Bisht

[1]Senior Professor and Head, Department of Pathology, PGIMS, Rohtak.
[2,3]Demonstrator, Department of Pathology, PGIMS, Rohtak.
[4,5]Junior Resident, Department of Pathology, PGIMS, Rohtak.

***Corresponding Author: Dr. Ritesh Kumar Sheorain**

Demonstrator, Department of Pathology, Department of Pathology, PGIMS, Rohtak.

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ABSTRACT

Well-differentiated papillary mesothelioma (WDPM) of the tunica vaginalis testis originates from mesenchymal tissue; only 0.3%–5% of all cases of mesothelioma affect the tunica vaginalis. Most WDPM originate in the abdominal or pelvic peritoneum of young females. Mesothelial lesions of the paratesticular region include meso-thelial cysts, reactive mesothelial hyperplasia, well-differentiated papillary mesothelioma (WDPM), and malignant mesothelioma (MM). WDPM is considered benign with an indolent clinical behavior, mimicking other benign pathologies of the scrotum as hydrocele. WDPM of the scrotal sac was first described in the literature by Barbera and Rubino; only 20 cases have been reported so far. We reported a case of well differentiated papillary mesothelioma of tunica vaginalis testis in an orchidectomy specimen from a 77 years old patient. The patient came with complaint of bilateral testicular swelling. He was a followed up case of high grade carcinoma prostate. Bilateral orchidectomy was performed and one of the testis showed WDPM of tunica vaginalis.

KEYWORDS: WDPM, tunica vaginalis, testis, testicular swelling.

INTRODUCTION

Well-differentiated papillary mesothelioma (WDPM) of the tunica vaginalis testis originates from mesenchymal tissue; only 0.3%–5% of all cases of mesothelioma affect the tunica vaginalis.[1] Most WDPM originate in the abdominal or pelvic peritoneum of young females. Occasionally, it may involve the pleura, paratesticular area, or pericardium. WDPM may affect the spermatic cord, epididymis, and the peritoneal mesothelium of inguino-scrotal hernial sacs. WDPM of the scrotal sac was first described in the literature by Barbera and Rubino; only 20 cases have been reported so far.[1,2]

Mesothelial lesions of the paratesticular region include mesothelial cysts, reactive mesothelial hyperplasia, well-differentiated papillary mesothelioma (WDPM), and malignant mesothelioma (MM).[3]

WDPM is considered benign with an indolent clinical behavior, mimicking other benign pathologies of the scrotum as hydrocele.[1] Common histological characteristics of WDPM include well-formed papillary structures lined by a single layer of cuboidal mesothelial cells with mild or absent atypia.[2]

Little is known about the clinicopathologic spectrum or overall prognosis of WDPM. There is a need to identify more cases to better characterize the scope of paratesticular WDPM.

CASE REPORT

We reported a case of 77 years old male, resident of Sonepat, Haryana. He came with a complaint of bilateral testicular swelling. He was a followed up case of high grade carcinoma prostate. Bilateral orchidectomy was performed and we received the specimen in our department of Pathology. On gross examination, larger testis measured 6.5x4.0x2.0 cm and smaller testis measured 6.0x3.5x2.0 cm; attached vas deferens of larger testis measured 3.5 cm in length, and that of smaller testis measured 2.0 cm in length.

On cut sectioning the larger testis, two cystic areas were identified. Smaller cystic area measured 0.5 cm in diameter and it was located near the upper pole. Another cystic area which was located near the anterior aspect measured 0.8 cm in diameter, and was filled with brown color fluid. Cut section of smaller testis was unremarkable.

Microscopic examination

Microsections from larger testis showed an encysted hydrocele with patchy areas of atrophic testis, and sections from encysted portion of tunica vaginalis showed a well differentiated papillary mesothelioma

(Figure 1). Immunohistochemistry was performed and papillary mesothelioma showed WT-1 and calretinin positivity. Sections from the smaller testis were unremarkable.

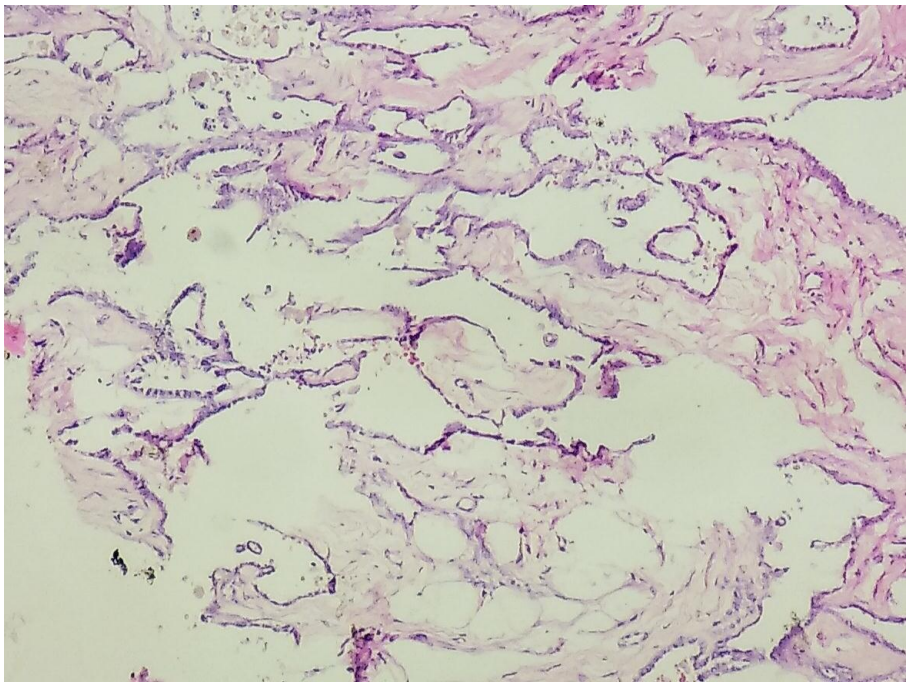

Figure 1: Photomicrograph of H&E stained (100x) microsection showing well differenetiated papillary mesothelioma.

DISCUSSION

Mesothelial lesions of the paratesticular region include mesothelial cysts, reactive mesothelial hyperplasia, WDPM, and MM. Of these, WDPM is rare, usually detected in the peritoneum of women of reproductive age. It is uncommonly seen at other sites, such as the pleura, pericardium, and tunica vaginalis. However, only 0.3%–5% of all cases of mesothelioma affect the tunica vaginalis. Less than 20 cases of WDPM of tunica vaginalis testis have been published till date in the literature.[1]

Patients' age may range from 18 to 70 years (mean = 43 years). Most patients complain of scrotal pain or swelling, but hydrocele is the most common presenting symptom. WDPM typically presents either as solitary, or less often, with few superficial small nodules on the surface of a hydrocele sac.[4]

WDPM displays characteristic histologic features

(1) Papillary or tubular-papillary cytology
(2) Bland nuclear cytology
(3) Low mitotic activity
(4) Lined by a single row of cuboidal cells
(5) Absence of stromal invasion.[4]

WDPM is considered benign but controversial according to literature, with many reported to have complex morphologies, such as cribriform, complex trabecular, syncytial, and solid architecture additionally to the classical features; this has significantly contributed towards the diagnostic conundrum of WDPM.[5]

Recently, it was proposed that the term WDPM of the tunica vaginalis should only be used to describe mesothelioma that lacks complex cellular architecture, whereas those displaying complex morphology should be termed 'mesothelioma of uncertain malignant potential'.[6] Some authors have suggested that MUMP represents a morphological continuum between classic WDPM and diffuse malignant mesothelioma.[5]

The main differential diagnosis includes mesothelial hyperplasia and MM. Mesothelial hyperplasia may also be composed of papillary structures, but often do not contain a fibrovascular core like WDPM. The papillary structures are often related to inflammation and reactive changes. MM occurs more often in older men with local recurrence in up to 60% of cases. MM may have focal areas composed of well differentiated papillary structures "WDPM-like," but they are often accompanied by infiltrative features, nuclear atypia, mitotic activity, and coagulative necrosis.[7]

Paratestis tubulopapillary neoplasms such as rete testis/epididymal carcinoma, serous carcinoma, and metastatic adenocarcinoma are included in the differential diagnosis.[8]

The etiology or tumorigenesis of WDPM of the tunica vaginalis remains unknown. Many have suggested local trauma, inflammation and asbestos exposure as risk factors.

Treatment for WDPM is complete surgical excision, either a radical orchiectomy or cryosection with wide local excision, especially in younger patients if a negative margin is achievable. At present, there's no recommended follow-up for WDPM.

CONCLUSION

WDPM of the tunica vaginalis is a rare entity, with only approximately 20 other cases reported in the literature. Distinguishing between WDPM and malignant mesothelioma is essential because they carry different prognostic implications and treatment. Histological characteristics of WDPM include well-formed papillary structures lined by a single layer of cuboidal mesothelial cells with mild or absent atypia. Recommended treatment for WDPM is complete surgical excision, with follow up.

CONFLICT OF INTEREST: No conflict of interest

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