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Case Report

Metastatic Papillary Serous Carcinoma of Testis: A Rare Case

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ABSTRACT

Papillary serous carcinomas of testis are very rare, and only case reports have been reported in the literature. These neoplasms are characterised histologically by papillary fronds and numerous psammoma bodies and exhibit immunoreactivity for markers of ovarian serous carcinomas. These are very aggressive and are both chemo and radioresistant with surgery remained the main stay of management.

KEYWORDS: Psammoma bodies, Serous carcinoma testis, Carcinoma testis, Paratesticular tissue, WHO classification, Radioresistant tumour markers

INTRODUCTION

Testicular serous carcinomas unlike their ovarian counterpart are very rare, and <40 cases have been reported in the literature. Serous carcinomas of testis are classified under miscellaneous tumours of testis in the WHO classification of tumours of testis and paratesticular tissue [1]. They are very aggressive and are both chemo and radioresistant.

CASE REPORT

A 28-year-old young male presented with complaints of swelling and ulcer in groin region of 6 months duration, which was increasing in size. Circulating tumour markers (AFP, Beta-HCG, CA19-9, CEA *carcinoembryonic antigen* test. and LDH) *Lactate dehydrogenase* was normal. CT Computed tomography of abdomen showed heterogeneously enhancing mass lesion with multiple calcifications involving right testis measuring 6 × 5.5 cm, bilateral inguinal lymphadenopathy with calcifications and multiple deposits in pelvis. CT of chest showed subcentimetric pretracheal and bilateral axillary lymph nodes (Figures 1 and 2). Clinical and radiological diagnosis of testicular cancer was made. Patient had history of eversion of hydrocele in 2015 and high inguinal orchidectomy in 2016. Histopathological diagnosis was not available for the orchidectomy specimen.

Wedge biopsy from the ulcerated inguinal lymph node was done and sent to histopathology lab. Microscope examination revealed ulcerated squamous epithelium with underlying tumour tissue composed of papillary fronds lined by cuboidal epithelium exhibiting mild-to-moderate nuclear atypia and occasional mitotic figures along with numerous psammoma bodies. Lymphoid tissue was not identified (Figure 3). Morphological diagnosis of papillary carcinoma was made and advised immunohistochemistry (IHC) for further categorisation. WT_1, PAX-8 and ER came out positive with negative TTF_1 and calretinin. After IHC, we came to a conclusion of metastatic papillary serous carcinoma of testis.

DISCUSSION

Testicular Mullerian epithelial tumours (ovarian epithelial tumours) are rare. It is suggested that ovarian epithelial-type tumours including serous and mucinous neoplasms develop from Mullerian metaplasia of mesothelial inclusions or from areas of coelomic epithelium that

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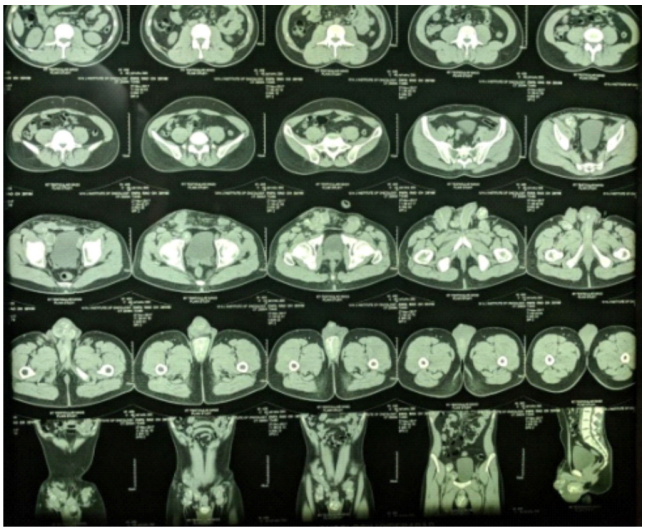

Figure 1: CT scan shows testicular mass and bilateral inguinal nodes

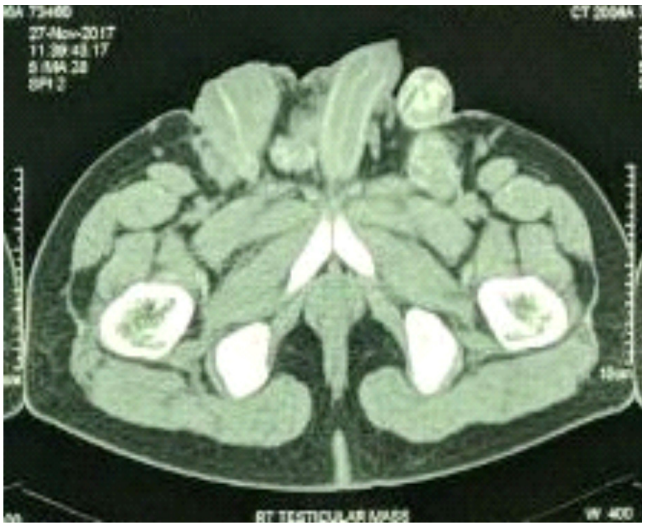

Figure 2: Ulcerated skin because of inguinal LN

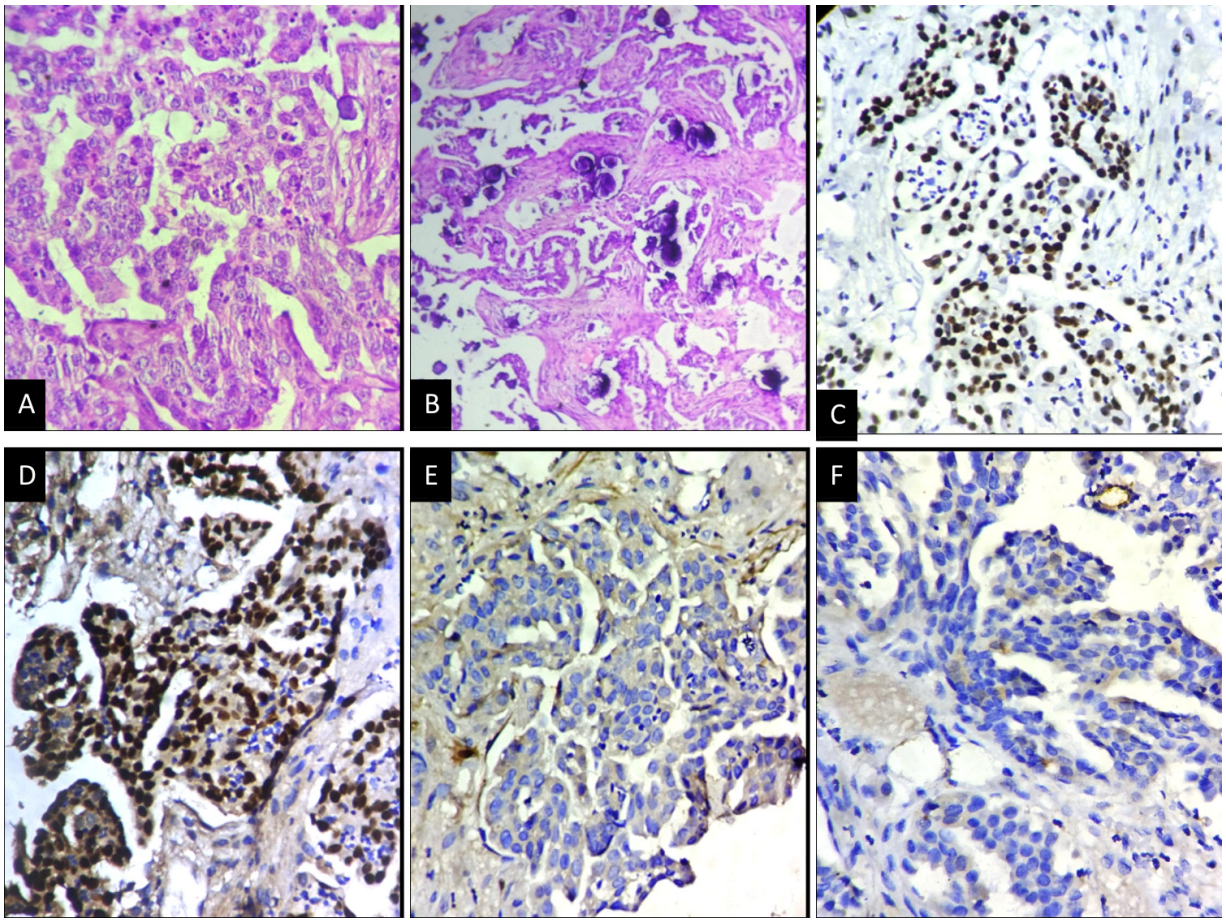

Figure 3: (a) H&E 40×, (b) Psammoma bodies, (c) WT1 nuclear positivity, (d) PAX-8 nuclear positivity, (e) negative calretinin, (f) negative TTF1

become trapped in testicular tissue [2,3]. In the WHO classification of tumours of testis and paratesticular tissue, these ovarian epithelial-type tumours are classified under miscellaneous tumours of testis. Among them, serous neoplasms are most common and classified into benign, borderline and malignant forms [4]. Serous carcinoma of testis is very rare, and <40 cases have been reported in the literature. It can occur at any age but usually affects young men. Circulating tumour markers will be normal. Usually patients present with scrotal mass and hydrocele. Testicular serous carcinoma can be either cystic or solid or combination of both. Gritty sensation is usually felt while grossing the specimen. Histologically, this lesion is characterised by papillary fronds lined by cuboidal to low columnar epithelium with mild-to-moderate nuclear atypia, low mitotic activity and numerous psammoma bodies. IHC is needed to differentiate it from adenocarcinoma of rete testis and mesothelioma of tunica. CD10 is used to differentiate it from adenocarcinoma of rete testis as the later show membrane positivity [5]. Papillary configuration is seen in both mesothelioma and serous carcinoma of testis/paratestis, but the former is devoid of psammoma bodies and shows calretinin positivity. Calretinin being mesothelial marker is absent in serous carcinoma of testicular/paratesticular tissue. Experimental modal analysis EMA, CA 125, CK7 and Ber-Ep4 are expressed by serous carcinoma in contrast to mesothelioma. WT_1 is expressed by both serous carcinoma and mesothelioma and because of this, not used as differentiating marker. In the study by Bürger *et al*., mutational analysis showed BRAF V600E mutation in one case [6]. Similar BRAF mutations are observed in borderline and malignant ovarian serous neoplasms. Surgery remains the main stay of management as these tumours are both chemo and radioresistant.

CONCLUSION

To conclude, serous carcinomas of male genital tract are very similar to their ovarian counterpart, but their occurrence is extremely rare. Unlike in the ovary, testicular serous carcinomas are chemo and radioresistant. Surgery is the preferred management. Long-term follow-up is needed as these lesions are prone for metastasis as happened in our case.

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