Oncology

Testicular papillary serous carcinoma of ovarian type, a rare case report, however an important timely diagnostic issue

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ABSTRACT

A 28 years old man presented with left testicular swelling for recent few months. Ultrasonography and Computed tumor scan was in favor of solid cystic mass. The patient underwent left radical orchiectomy. The pathology diagnosis with aid of Immunohistochemistry staining approved the mullerian duct origin. Papillary serous carcinoma of ovarian type (PSCOT) is diagnosed for him. The patient treated successfully he was symptom free in two years follow up after orchiectomy. Timely diagnosis of PSCOT and orchiectomy are the keys of the patient survival; because prior to tumor spreading, the patient can be discharged after orchiectomy without adjuvant treatment.

Introduction

Surface epithelial tumor of ovarian type are very rare in testis.1,2 Ovarian type surface epithelial tumors of testis are classified to borderline, micro-invasive serous tumor, and serous carcinoma, intratubular and Para testicular mucinous tumor in different grades, endometrioid adenocarcinoma, clear cell carcinoma and transitional cell tumors.2 The most frequent type is serous ones.1–3

Case presentation

The patient was a 28 years old man. The patient had noticed swelling of the left testicle about three months before the visit. Past medical history was unremarkable, he had not history of smoking. He had not history of alcohol or drug abuse. Physical examination revealed left scrotal enlargement, scrotal fullness was noticeable on palpation.

Tumor markers such as Beta Human Gonadotropin (ß-HCG) and Alfa-Feto protein (AFP) were in normal ranges. Ultrasonography showed a well-defined hyperechoic structure adjacent to epididymal head measuring 30 mm × 25 mm, papillary projection of this lesion measuring 10 mm × 5 mm caused pressure effect on left testis. Severe fluid accumulation was seen around left testis which was suggestive of hydrocele. Computed tomography scan of the testis showed a solid testis mass measuring 32 mm × 30 mm. The mass was heavily calcified. By considering the high possibility of malignant process; we performed radical orchiectomy. The specimen was sent to pathology laboratory. Grossly the tumor was a cream-white to pink firm mass in the upper pole of the testis which extended into the hilum. Fig. 2.

Microscopically there was many papillary structures which lined by atypical columnar and cuboidal epithelial cells, basophilic cytoplasm with round or oval clear nuclei. There were numerous psammoma bodies which obscure the underlying papilla in some part. Fig. 3. This histologic finding was identical to surface epithelial ovarian tumor, named as ovarian papillary serous adenocarcinoma.

Because of rarity of this entity in testis. Immunohistochemistry (IHC) was performed to approve or exclude other rare tumors of this region; such as mesothelioma of tunica which shows papillary configuration. The tumor cells were positive for Cytokeratin (CK), Estrogen Receptor(ER) and Cytokeratin 7 (CK7), Cytokeratin 8 and 18, Estrogen Receptor (ER) and Epithelial Membrane Antigen (EMA) but negative for CK20, Inhibin, Calretinin, PAX1 and Placental Alkaline Phosphatase (PLAP). IHC approved the diagnosis of ovarian type papillary serous adenocarcinoma of ovarian type (PSCOT).

There is no approved treatment for this rare entity; however, most authors recommended only radical orchiectomy and long term follow-up, by imaging study. CT scan of abdominopelvic cavity shows no evidence of tumor spreading. The patient discharged with close follow up.
Papillary serous type carcinoma of ovarian type is classified into, benign, borderline, micro-invasive and invasive type.\textsuperscript{1,2}

The morphological, immunohistochemical and ultrastructural of serous tumors are identical to the ovarian counterpart.\textsuperscript{1} The origin of these tumors believe to be epithelial inclusion or epithelial abnormality that had been trapped in testis or Para testicular tissue during coelomic epithelium development.\textsuperscript{1,2,3,4}

All of the cases complained of testicular swelling, fullness sensation, testis heaviness or mass.

Grossly the tumor was creamy pink well-defined with hard consistency. Microscopically, there was an invasive papillary tumor with clear nucleus and numerous psammoma bodies. Which is in favor of malignancy, most probably serous adenocarcinoma. However, because of rarity of this tumor in men, we use IHC staining to rule out the other differential diagnosis of this tumor, like, malignant mesothelioma with probable origin from tunica.\textsuperscript{1,3,4}

The mean age of PSCOT is 31 years old with age range of 16–42 years. There is no commensal agreement on chemotherapy of PSCOT in published articles. Some authors recommended the same chemotherapy regimen which used for the counterpart tumors arising in female genital tracts especially in metastatic lesion.\textsuperscript{5} however, we should know, PSCOT is highly resistant to chemotherapy and radiotherapy.\textsuperscript{5}

Our patient was treated successfully with radical orchiectomy. He discharged with close follow-up. After two years follow up, he is remained well. He is symptom free. However long term follow-up and imaging study is crucial in follow up of these patients because of possibility of long term metastasis.\textsuperscript{1,3}

Conclusion

Serous adenocarcinoma of male genital tract is very similar to their ovarian counterpart morphologically, but their occurrence in the male genital tract is extremely rare. However, clinician, radiologist and pathologist should be aware of this tumor. Consideration of this rare tumors in the differential diagnosis of any testicular tumor with calcification and/or papillary configuration is important, because, timely diagnosis makes this tumor treatable with orchiectomy and long term follow-up. However, when the diagnosis is missed in earlier stages the tumor behaves aggressively and will be unresponsive to chemotherapy and radiotherapy.

Ethics approval and consent to participate

There is no need to ethical approval relevant to our case report. Written informed consent was obtained from the patient for publication of this case report and any accompanying images.

Consent for publication

A copy of the written consent from the patient for publication of any data or image or video is available for review by the Editor-in-Chief of this journal.
Availability of data and material

All of the data and material is available in our clinic and lab.

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Authorship contributions

All of the authors have contributed in writing the report. S.Z, M.S, A.A, AND N.N have visited the patient and performed radical orchiectomy for the patient; they are responsible for patient follow-up and treatment, FK is the pathologist and diagnosed the tumor. All authors have read and approved the final manuscript.

Declaration of competing interest

The authors declare that they have no competing interests.

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