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Squamous Cell Carcinoma Arising From a Mature Cystic Teratoma of Ovary: A Rare Case

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Abstract: Mature cystic teratoma accounts for 10-20 % of all ovarian tumors. Malignant transformation is very rare in mature cystic teratoma, its incidence being 1-2% and is commonly seen in post menopausal women with tumor size larger than 10 cm. Pre-operative diagnosis of this entity is difficult due to non specific clinical & radiological features and no specific tumor markers. Malignant change occurs either from epidermal or from bronchial lining. Prognosis of this tumor is poor. We report a case of squamous cell carcinoma arising in a mature cystic teratoma of the ovary in a 55 year old post menopausal women, presenting with abdominal mass & pain. Radiologically she was diagnosed as right ovarian cyst with uterine fibroids. Abdominal hysterectomy with bilateral salphingo-oophorectomy was performed. Histopathological examination revealed moderately differentiated squamous cell carcinoma arising from a mature cystic teratoma of right ovary with involvement of myometrium and lateral wall of cervix. One should be aware of this condition to avoid it's under diagnosis when a post menopausal women presents with a large cystic teratoma of the ovary.
Keywords: Mature Cystic Teratoma, Malignant transformation, Squamous cell carcinoma.

INTRODUCTION

Mature cystic teratoma (MCT) is seen in 10-20% of all ovarian tumors. Malignant transformation in this tumor is very rare, and occurs in only 1-2% of cases of MCT [1]. Pre-operative diagnosis of this tumor is difficult [2]. We present this case because of its rarity, and to highlight its clinical profile.

CASE REPORT

A 55-yr-old, post menopausal, female patient presented with abdominal discomfort and pain since 1 month. Physical examination revealed a large abdominal mass arising from pelvis.

Investigations

- USG revealed a well defined, large, complex cystic lesion with solid areas measuring 14x11x9 cms arising from right ovary. 3-4 solid lesions were seen along the uterine parenchyma and lateral wall of cervix which were considered as leiomyoma.
- β-HCG levels were 11 mIU/ml (N < 10mIU/ml).
- CA125 levels were 86 IU/ml (N 0-35IU/ml).
- CBC & Chest X ray were within normal limits.

Hysterectomy with bilateral salphingo-oporectomy was done and the specimen was sent for histopathological examination.

Histopathological examination

A specimen of panhysterectomy was received. Right sided ovary showed a huge cystic mass m 15x15x10 cm. External surface revealed grey white nodular areas with papillary excursions and disruption of the capsule. Cut section revealed solid and cystic areas. Solid areas were grey white irregular with papillary excursions. Cystic areas were filled with pultaceous material and hair tufts. Posterior surface of uterus and lateral wall of cervix revealed grey white nodular areas with papillary excursions. Bilateral tube and left ovary appeared unremarkable (Fig. 1).

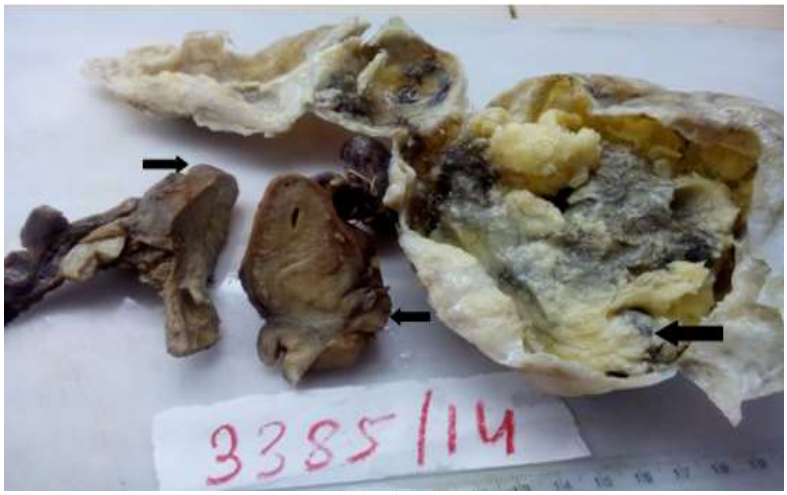

Fig. 1: Panhysterectomy showing cystic teratoma with hair tufts & solid areas. Multiple tumor deposits on external surface of uterus.

Microscopic examination of the ovarian tumor revealed a mature cystic teratoma. Sections from the solid areas of the ovarian cyst revealed moderately differentiated squamous cell carcinoma arising from dysplastic squamous lining. Tumor cells were arranged in nests and ribbons with moderately pleomorphic nuclei and numerous keratin pearls. The same histology was seen in tumor nodules on surface of uterus and lateral wall of cervix. Sections from endometrium, left ovary and bilateral tubes revealed no evidence of tumor. Based on these histological features the tumor was diagnosed as moderately differentiated squamous cell carcinoma arising in a mature cystic teratoma of right ovarian cyst with metastasis to myometrium and lateral wall of cervix (Fig. 2A and 2B).

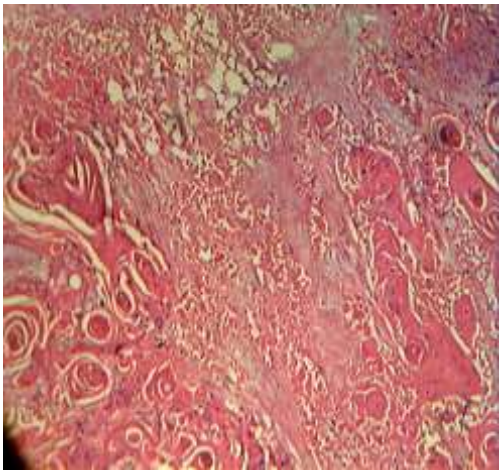

Fig. 2A: Shows shows mature cystic teratoma 40x H and E

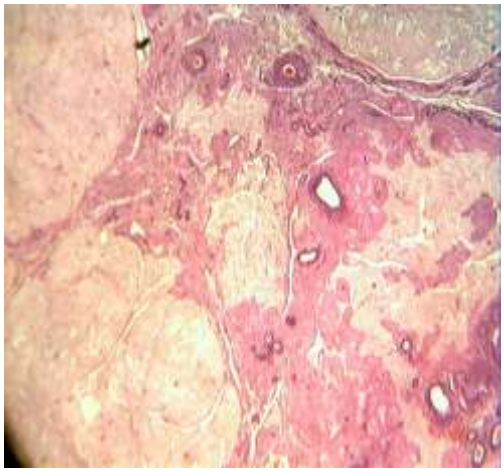

Fig. 2B: Shows Metastasis of squamous cell carcinoma in the myometrium 100x H and E

DISCUSSION

Malignant change in a MCT is very rare, seen in 1-3% of cases. It is usually seen in unilateral ovary, in post menopausal patients with distinctive clinical features as seen in our case. The usual clinical features are same like other ovarian tumors i.e abdominal pain and swelling [3, 4]. Pre-operative diagnosis of malignant change in MCT is difficult due to vague symptoms, non specific findings with imaging studies and tumor marker study [2]. Modern imaging studies may help to give proper pre-operative assessment of these patients [1]. Several studies have revealed that to some extent Ca125 levels can help to distinguish squamous cell carcinoma in a MCT from benign MCT. However the mean level was lower than expected level in ovarian surface epithelial tumors [5].

Amongst the malignancies which develop in a mature MCT, the commonest is squamous cell carcinoma followed by adenocarcinoma [2, 3]. MCT with a tumor size more than 10 cms has an increased

risk of squamous cell carcinoma. The overall outcome of these patients is poor [3]. The patients with tumor confined to the ovary have a better outcome than one with peritoneal extension [6]. The tumor size in our case was also large viz. 15x15x10 cms involving the myometrium and the lateral wall of cervix.

Grossly cystic part shows pultaceous material with hair tufts, cartilage, tooth etc as seen in MCT. Squamous cell carcinoma in this MCT is in the form of solid grey white friable growth with papillary/polypoidal areas. Microscopy shows round to polygonal cells arranged in nests, sheets and cords with nuclear atypia. Malignant change arises either from bronchial lining or epithelial element of MCT [4]. Mode of infiltration is a good indicator of recurrence and prognosis [6]. Also well defined area between the stroma and tumor is thought to be a good prognostic sign [4]. Other poor prognostic factors include dissemination, cyst wall invasion, spontaneous rupture, ascities and adhesions [3].

In our case the squamous cell carcinoma was arising from dysplastic epithelial lining and had no clear distinction between invading cells and stroma. Also there was spread to the myometrium and lateral wall of cervix rendering poor prognosis.

The differential diagnoses of this entity are metastatic squamous cell carcinoma, immature teratoma, carcinosarcoma and Sertoli-Leydig cell tumor with heterogeneous elements [3].

Total abdominal hysterectomy with bilateral salphingo-ophorectomy and omentectomy is the most widely accepted approach. The role of radiotherapy and chemotherapy remains unclear [1].

CONCLUSION

- Squamous cell carcinoma in a MCT is rare and is observed in older age. Pre-operative diagnosis is difficult due to non specific features. Modern imaging techniques may be helpful.
- Staging, vascular involvement and mode of infiltration are good predictors of recurrence and prognosis.
- Clinicians should keep this rare type of tumor in mind when a post menopausal women presents with a large ovarian cyst.

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