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Case Report

Collision tumor of ovary: a case report on bilateral dermoid cyst with co-existing unilateral mucinous cystadenoma

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ABSTRACT

A collision tumor is the coexistence of two adjacent, but histologically distinct tumors without histological admixture in the same tissue or organ. Such tumors have often been reported in various organs, but location in the ovary is rare. The juxtaposition with dermoid cysts has been reported as comprising approximately 5% of benign mucinous ovarian tumors and rare examples of proliferating mucinous tumors. Authors are reporting a case of collision tumor which included benign mucinous cystadenoma and benign cystic teratoma. The gynecologists and pathologists should be aware of such combination of tumors. The case was diagnosed post-operatively. It is important to correctly diagnose the component of tumor for further management and favourable prognosis. Frozen section intra-operatively plays an important role in diagnosing such tumors.

Keywords: Benign cystic teratoma, Collision tumor, Frozen section, Mucinous cystadenoma

INTRODUCTION

Dermoid cyst is a type of germ cell tumor comprising well differentiated tissues and three germ cell layers, known as mature cystic teratoma. Peak incidence in females aged 20-40-years, comprise 10-20% of all ovarian neoplasms. Slow-growing and unilateral, bilateral incidence of 10%. Benign mucinous cystadenomas account for 80% of mucinous ovarian tumors and 20-25% of benign ovarian tumors.¹

A collision tumor is the coexistence of two adjacent, but histologically distinct tumors without histological admixture in the same tissue or organ. Such tumors have often been reported in various organs, but location in the ovary is rare.²

The juxtaposition with dermoid cysts has been reported as comprising approximately 5% of benign mucinous ovarian tumors and rare examples of proliferating mucinous tumors.³

CASE REPORT

A 25-year-old, nulligravid lady, presented with complaints of pain abdomen and fullness of lower abdomen since a week and complaints of vomiting since 1 day. General physical examination- normal, vitals-stable. RS/CVS/CNS- were normal. On per abdomen examination: a 24-week size firm cystic mass with smooth surface is palpable extending from left iliac fossa to right iliac fossa.

Upper and lateral borders well defined. Restricted mobility present, tenderness present. On bimanual examination- uterine size could not be made out, and a mass is felt in the anterior fornix of 12×10 cms, cystic in nature, mobility restricted, tenderness present.

Ultrasound findings were consistent with large right ovarian dermoid cyst. Patient was posted for emergency laparotomy i/v/o suspected torsion.

Investigations

Ultrasonography- uterus measured 6.7×3.4×1.1 cms-0.7 cms with an endometrial thickness of 0.7mm. Left ovary is normal in size and echotexture, seen posterior to the cyst in the left adnexa and measures 2.6×1.4 cms. Right ovary is not separately seen. Large cyst seen measuring 18.6×8.6×14 cms is seen in the lower abdomen and upper pelvis extending from the left flank to right flank superior to the urinary bladder and uterus. The right side of the cyst shows 12 cms locule with predominantly clear fluid and 4 cms fat containing cyst. The left side of the cyst shows 11cms locule with thick turbid fluid contents. No calcifications seen. Walls are thin. No obvious vascularity detected. Right kidney shows mild hydronephrosis.

Impression: large right ovarian dermoid cyst. Complete hemogram and other investigations are normal.

Emergency laparotomy with bilateral cystectomy done.



Figure 1: Right ovary of 2 different types of cysts.



Figure 2: Right ovary- mucinous cystadenoma.

Intra-operatively - right ovary (Figure 1, 2, 3) enlarged (12×10 cms), cystectomy done. On cut section, one of the cyst revealed clear fluid and another cyst revealed cheese like material seen with hair. In left ovary (Figure 4) a cyst of 10×5 cms noted, cyst wall excision attempted, accidental rupture revealed cheese like material with hair.

Cyst wall excision done and both the cysts sent for frozen section. Specimen is sent for frozen section followed by histopathological examination.

Frozen section showed mature cystic teratoma of left ovary. Benign ovarian cyst and mature cystic teratoma of right ovary.



Figure 3: Right ovary- benign cystic teratoma.

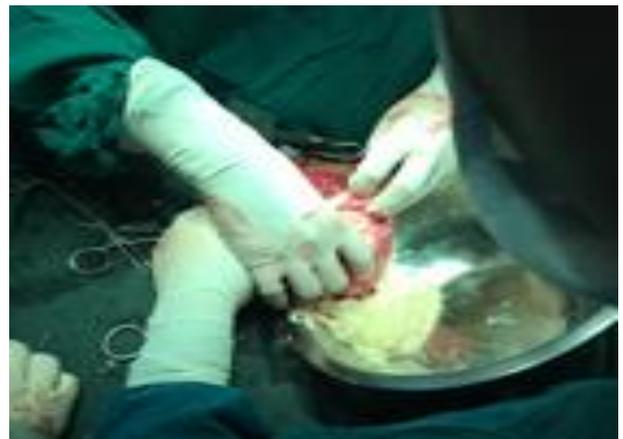


Figure 4: Left ovary- benign cystic teratoma.

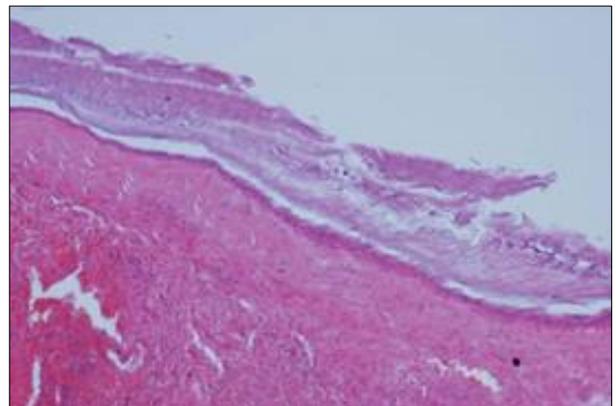


Figure 5: Mucinous cyst lined by monolayered cuboidal epithelium.

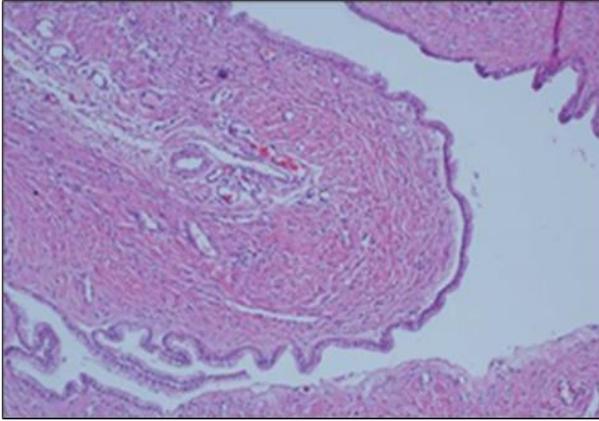


Figure 6: Dermoid cyst of the same ovary with squamous epithelium.

Post-operative period uneventful

Histopathology examination of the specimen showed benign mucinous cystadenoma lined by monolayered cuboidal epithelium and benign cystic teratoma with squamous epithelium and keratinization of right ovary (Figure 5, 6), and that of the left ovary showed benign cystic teratoma.

DISCUSSION

Collision tumor represents the coexistence of two adjacent, but histologically distinct tumors with no histologic admixture at the interface. They are most commonly composed of teratoma and cystadenoma or cystadenocarcinoma.⁴ Other histologic combinations have also been reported (e.g., teratoma and granulosa cell tumor, cystadenocarcinoma, and sarcoma). When an ovarian tumor demonstrates imaging findings that cannot be put under one histologic type, a collision tumor should be considered. Benign mucinous cystadenoma manifests as a multilocular cystic mass with a thin regular wall and septa or that contains liquids of different attenuation or signal intensity but has no endocytic or exocytic vegetation.

Mature teratoma is the most common benign ovarian tumor in women aged <45 years. When bone or teeth are present, they tend to be located within the Rokitansky nodule; ultrasonography findings in mature cystic teratomas vary from a cystic lesion with a densely echogenic tubercle (Rokitansky nodule) projecting into the cyst lumen, to a diffusely or partially echogenic mass with the echogenic area usually demonstrating sound attenuation owing to sebaceous material and hair within the cyst cavity, to multiple thin, echogenic bands caused by hair in the cyst cavity. At CT, fat attenuation within a

cyst, with or without calcification in the wall, is diagnostic for mature cystic teratoma. However, the presence of an equivocal intermediate transitional zone between the tumors may make it more difficult to differentiate between a collision tumor and a true mixed tumor. The histological combination of teratoma and mucinous cystadenoma is the most common form of collision tumors in the ovary.^{5,6}

CONCLUSION

Ovarian collision tumors are rare. The pre-operative suspicion of the existence of such tumors with increased level of surveillance and a thorough pathological examination of the excised mass, avoids misdiagnosis of a second type of tumor (usually a mucinous one), which is important in subsequent treatment, outcome and prognosis of the patient.

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