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Case report

Keywords: Ovarian neoplasms, Collision tumor, Teratoma, Magnetic resonance imaging

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Two rare cases of ovarian collision tumor

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Abstract

Background: Collision tumor is a clinically rare disease, it is defined as two or more primary tumors from different tissues occurring at the same anatomical site. Ovarian collision tumor is more rare.

Case presentation: A patient was hospitalized with a pelvic mass. The CA125 level was 53.46U per milli liter (normal range, 0 to 30u/ml). Another patient was hospitalized with lower abdominal pain and no apparent hormonal abnormalities. Ovarian lesions were found in both patients after examination, and postoperative pathology showed that both patients were ovarian collision tumors.

Conclusion: Collision tumor composed of mature cystic teratoma, follicular membranous cell tumor and serous cystadenoma was first reported. The biological behavior of collision tumor is different due to its different components. Accurate diagnosis is of great significance to treatment.

Keywords: Ovarian neoplasms, Collision tumor, Teratoma, Magnetic resonance imaging

Background

Collision tumors refer to two or more primary tumors from different tissues that occur at the same anatomical location. Their boundaries are connected to each other but there is no organizational integration^[1]. It is rare in clinical practice, especially in the Ovary. Two cases

of collision tumor from ovary are reported in this paper. Collision tumors of serous cystadenoma, mature cystic teratoma and follicular membranous cell tumor are first reported.

Case presentation

case1

A 65-year-old woman with pelvic mass was hospitalized in our hospital. She had no specific medical history or hormonal symptoms. She has already reached menopause 11 years ago. No abnormal vaginal bleeding and fluid flow after menopause. Gynecological examination revealed lumps in the back of uterus, irregularities, poor movement, and poor borders. The CA125 level was 53.46U per milli liter (normal range, 0 to 30u/ml). Ultrasound showed two mixed echoes behind the uterus, one was 6.8 cm×5.6 cm×6.1 cm with moderately strong echoes and no echo, the other was 7.0 cm×5.4 cm×6.4 cm with no echo Mainly. In addition, a non-echo was detected above the uterus, the size was about 5.3 cm×3.8 cm×3.8 cm, and the light bands were separated inside. CDFI showed no significant blood flow signal in mixed echo. MRI revealed two solid masses in contact with a cystic lesion. One of the solid masses, approximately 5.0 cm×4.7 cm×6.1 cm, showed a high signal on both T1WI and T2WI, and a low signal on the T2WI lipid sequence. The enhanced scan showed no obvious enhancement. The other Solid mass, with approximately 5.9 cm×4.9 cm×7.3 cm, showed low signal on T1WI and equal signal on T2WI, and slightly higher signal on DWI. The enhancement scan showed uneven enhancement. Cystic lesions showed low signal on T1WI and high signal on T2WI, with a size of about 5.0 cm×4.7 cm×6.1 cm, with space between different sacs. The enhancement scan showed significant enhancement of the separation (Fig.1A) . According to the imaging data, we considered the lesion to be ovarian collision tumor (teratoma collides with fibrofollicular membrane cell tumor). The patient suffered total hysterectomy and

bilateral adnexectomy. Pathological sections revealed that the lesions consisted of cystic and solid components. The capsule wall was mostly smooth. The thickness of the large cystic lesion wall was 0.3cm, and local calcification occurred. The inside of the lesion was sebum and hair. The microcapsule showed multilocular change, with thin wall and pale yellow transparent liquid inside, which was not consistent with the large capsule. The solid section was gray-white, gray-yellow and tough. Consultation results showed that the lesions were mature cystic teratoma with follicular membrane cell tumor and serous cystadenoma (Fig.1B) . The patients were followed up for 1 year after the operation, and there was no tumor recurrence.

case2

A 52-year-old female patient was hospitalized in a local hospital for lower abdominal pain. She has already reached menopause 5 years ago. No abnormal vaginal bleeding and fluid flow after menopause. Ultrasonography and pelvic CT examination showed that the lesion originated from the gastrointestinal tract. The doctor advised the patient to go to the superior hospital for further examination. In our hospital, the gynecological examination found that uterus was enlarged, as if pregnant for 4 months. Multiple nodules can be felt on the surface. Ultrasonic examination showed mixed echo in the upper right part of the uterus, with a size of about 8.3 mm×8.9 mm×6.7 mm, clear boundary and mainly hypoecho. The upper edge of the mixed echo reached about 1.0 mm above the umbilicus. Another non-echo was detected in the upper right part of the uterus, with a size of about 7.3 mm×6.5 mm×6.8 mm. The boundary was clear, and grid like separation was found in the non-echo. CDFI indicated that blood flow signal was around mixed echo. Magnetic resonance imaging showed two circular

abnormal signals were on the front right and upper part of the uterus. The two lesions were closely related, and the same capsule was seen. The upper part of the lesion showed low signal on T1WI and high signal on T2WI, with a size of about 5.7 cm×6.3 cm×7.1 cm. On the T1WI and T2WI lipid sequences, the lesion signal was decreased, and nodular mixed signals were observed at the inner and posterior edges. In the DWI sequence, the lesion edge showed patchy high signal. After enhancement examination, the edge of the lesion was enhanced. In the lower part of the lesion, with a size of about 8.4 cm × 10.2 cm × 6.8 cm, the signal was mainly equal or low on T1WI, accompanied by a small amount of patchy high signal. In T2WI, the signal was high, accompanied by patchy low signal. In addition, multiple cystic structures and compartments can be seen in the lesion. High signal on DWI sequence, low signal on ADC sequence. Enhancement scan showed delayed enhancement with multiple small vascular shadows (Fig.2A) . The radiographic diagnosis revealed that the tumor originated from the right adnexal region of the pelvic cavity. This is a collision of teratoma and follicular membranytoma. The patient suffered total hysterectomy and bilateral adnexectomy plus enteroclastic lysis. The postoperative pathological diagnosis was follicular membrane tumor of the right ovary, with mature cystic teratoma (Fig.2B) . The patients were followed up for eight months after the operation, and there was no tumor recurrence.

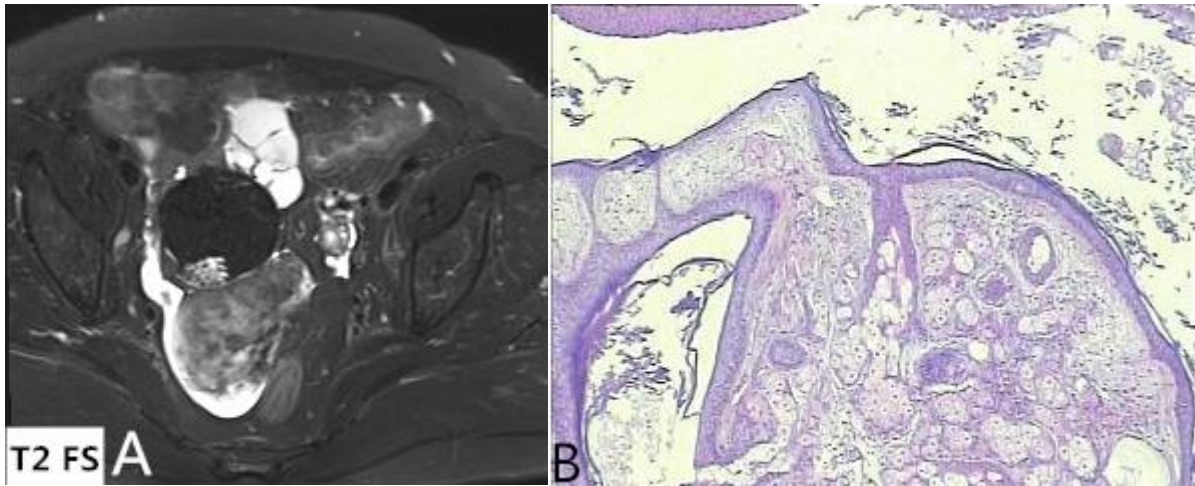


Fig1A MRI revealed three closely connected but clearly demarcated lesions in the pelvic cavity. There are fat components in the middle lesion.

Fig1B Cystic solid mass. Sebum hair is inside big sac, clear fluid is inside small sac. The solid section shows gray-white, sallow and tough (HE 4×100) .

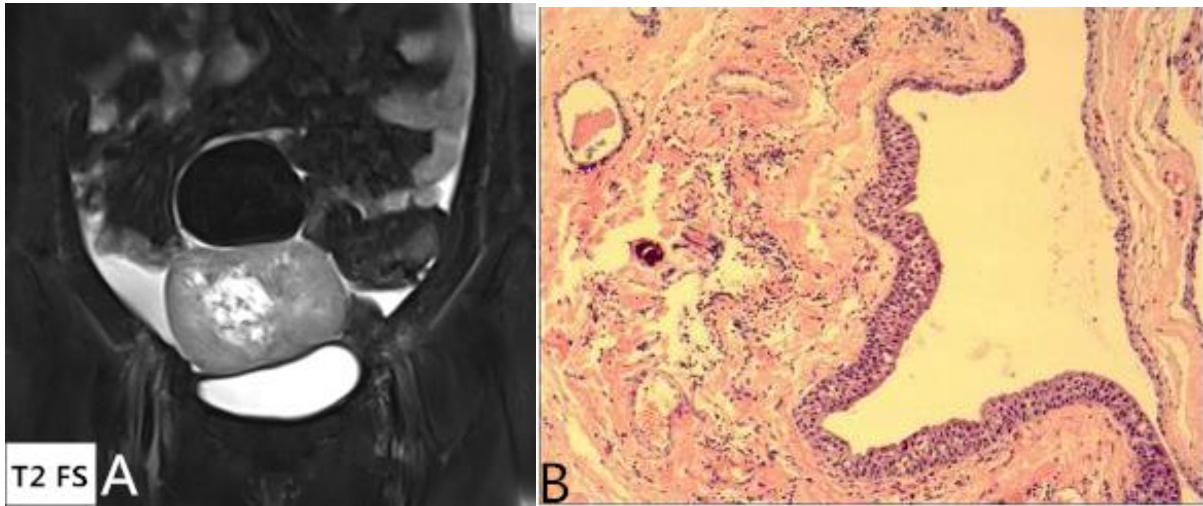


Fig2A Cystic changes and adipose tissue were seen in the lesion.

Fig2B Cystic lesions contain hair and grease. The solid component sections appear to be grayish red and soft.

Discussion

Collision tumor, also known as encounter tumor. It is defined as two or more primary tumors from different tissues occurring at the same anatomical site. Tumors exist independently of each other, and their biological behavior depends on their individual tumor characteristics. Colliding tumors that occur in the testis, skin, adrenal gland^[2], pancreas^[3] etc. have been reported in different forms, but collisional tumors occurring on the ovary are extremely rare. The following forms of ovarian collision tumors have been reported in individual cases, for example endometrioid carcinoma and granulosa cell tumor^[4], myxocystadenoma and mature embryonal teratoma^[5], endometrial large cell neuroendocrine carcinoma and low grade endometrial stromal sarcoma^[6], ovarian sclerosing stromal tumor collides with sig-ring stromal tumor^[7]. In the reported cases, the most common combinations are epithelial and germ cell tumors, followed by germ cell tumors and sex-cord-stromal tumors, but the three combinations are rare. Moid reported a case of ovarian collision tumor consisting of serous cystadenoma, mature cystic teratoma, and granulosa cell tumor. It is the only case of ovarian collision tumor composed of three different components reported so far^[8]. One of the two cases of ovarian collision tumor was a rare ovarian collision tumor composed of three different components. It consists of cystic teratoma, fibrofollicular membrane tumor and serous cystadenoma. Collision tumors should be identified with collision phenomena. Two or more tumors from different tissues occur at the same anatomical site, but the tumor is not a primary tumor. This is a collision phenomenon, not a collision tumor. Ovarian cancer and secondary lymphoma, for example. In addition, it is not a collision tumor when some tumors with multidirectional differentiation function deteriorate and form new tumors. For example, secondary exacerbations of mature teratomas form squamous cell carcinoma and

osteosarcoma. Ovary is a rare site for collision tumors. When ovarian tumors have two distinct tumor forms, their origin should be clearly assessed. To determine whether it was a collision of the primary tumor, a product of metastatic disease, or a secondary tumor in teratoma. It has been reported that if there are multiple tumor forms in ovarian tumors, one of which is mature teratoma, the possibility of tumor collision is great^[9]. Some lesions are small in size and prone to misdiagnosis when attached to the teratoma wall. Therefore, the possibility of collision tumor should be considered when abnormal signals in mature teratomas can not be explained by teratomas alone. As a common way of preoperative examination, imaging examination can assist in clinical diagnosis and guide later biopsy sampling. The biological behavior of collision tumor is different due to its different components, and its diagnosis should be carried out in a multidisciplinary manner. Early and accurate diagnosis is of great significance for treatment plan and prognosis.

Conclusion

In conclusion, ovarian colliding tumor is an extremely rare disease. Surgical excision is a common treatment. The degree of benign and malignant is related to the composition of the tumor itself. Clear diagnosis is of great significance for follow-up treatment.

Abbreviations

CA125: Cancer antigen 125; MRI: magnetic resonance imaging; DWI:diffusion weighted imaging.

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Availability of data and materials

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Authors' contributions

YT and MM drafted the manuscript, XC designed and revised the manuscript, YC and QM collected clinical data and participated in the analysis

Ethics approval and consent to participate

The authors have no ethical conflicts to disclose, and this report has been approved by institutional review boards of our hospital.

Consent for publication

Informed written consent was obtained from the patient for publication of this case report and accompanying images.

Competing interests

The authors declare that they have no conflict of interests.

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