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Massive Collision Tumour of the Ovary: A Rare Case of Mature Teratoma and Serous Papillary Cystadenoma

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Authors' contributions

This work was carried out in collaboration between all authors. Author NO was the lead surgeon. He coordinated the multidisciplinary team and took part in final review and approval of manuscript. Author ZZ was support surgeon. He took part in patient follow up, manuscript writing and literature review. Author HT was involved in patient follow up. Author KMM was support surgeon and participated in patient follow up. Author SM analysed and reported the histopathology sample. Author SZO reviewed and reported the radiological investigations. All authors read and approved the final manuscript.

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Case Report

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ABSTRACT

Aims: Collision tumours of the ovary are rare. A pre-surgery diagnosis is possible when there is a high index of suspicion during patient evaluation. This case report highlights the need for this clinical care, evaluation and treatment.
Presentation of Case: A 51 year old Para 7 lady presented at two years post-menopausal with a massively distended abdomen of 4 years duration. A diagnosis of ovarian tumour (likely benign) was made. She subsequently had exploratory laparotomy, total abdominal hysterectomy and bilateral

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salpingo-oophorectomy. Histopathological assessment revealed a benign collision tumour of the ovary.

Discussion and Conclusion: The case presented had a histological diagnosis of both a mature teratoma and a serous papillary cystadenoma. These are both benign ovarian tumours (germ cell tumour and epithelial cell ovarian tumour respectively). The occurrence of two primary neoplasms in the same organ is called a collision tumour. The clinical presentation and pre surgery investigations were not helpful in making a clinical diagnosis of an ovarian collision tumour. Making a clinical preliminary diagnosis of an ovarian tumour from history and examination is usually difficult. Medical imaging is therefore a valuable key, as it provides not only the origin of the tumour but also gives a probable picture of the histological type. Collision tumours are very rare, but having a high index of suspicion is important as making the right preliminary histologic diagnosis could affect the prognosis and management plan.

Keywords: Collision tumour; ovary; mature teratoma; serous papillary cystadenoma.

1. INTRODUCTION

The histological classification of ovarian tumours is broad. Rarely more than one histological type of tumour cells will coexist side by side in the same ovary. This is referred to as a collision tumour of the ovary [1,2].

Relatively few collision tumours have been reported in the human body compared to other tumours. This is even rarer in the ovary [2,3].

The case presented is a massive collision tumour consisting of serous papillary cyst adenoma and a mature teratoma.

2. CASE REPORT

A 51 year old trader with primary level of education presented two years post-menopausal with complaints of a progressive abdominal mass.

Her problem started about 4 years before presentation when she started experiencing progressive abdominal swelling. Swelling was first noticed as a firm mass in the lower abdomen which progressively increased in size. Mass became so huge that it prevented her normal routine activities and obstructed ambulation. There was no pain, urinary symptoms, vomiting or change in bowel habit. She however noticed early satiety as the mass increased in size.

She had no personal or family history of uterine fibroids, colon cancer, breast cancer or gynaecological malignancies. She attained menarche at 13 years and was 2 years post-menopausal. She had 7 deliveries from 1992 to 2010. Her menstruation span is approximately 31 years. There was no history of post-menopausal bleeding or post coital bleeding. She was aware of cervical cancer screening but had never done any. She had occasionally used the male condom with her husband for contraception. She had never used tobacco based products and there was no history of exposure to talc or any known carcinogens.

There was no history of cough or other masses in other parts of the body. No chest pain or difficulty in breathing.

There was no history of weight loss or leg swelling.

She presented to our facility on the 30th July 2018 after alternative medical care failed. She was hypertensive at presentation. An abdominal CT scan (Fig. 1) revealed a large complex cystic mass arising from the right adnexa (likely serous or mucinous cystadenoma) and mild ascites. Other investigations carried out included Urinalysis, serum electrolyte, urea and creatinine and Liver Function Tests. These were all normal. Other investigations included CA 125 (1.19 U/mL), Full Blood Count (haematocrit-39%, White Blood Count-7.1_x 10^9/L, normal differential count). A Chest X ray revealed a splinted diaphragm with normal findings. ECG was also normal.

Four units of blood were grouped and cross matched.

She was managed by a multidisciplinary team of gynaecologists, general surgeons, cardiologists, anaesthesiologists, pathologists and nurses. She was worked up for exploratory laparotomy ± staging laparotomy for ovarian tumour (likely benign).

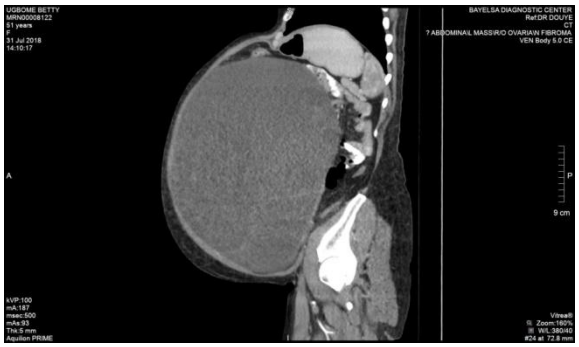

Fig. 1. Sagittal section of the CT scan of the abdomen showing abdomino-pelvic tumour

She subsequently had exploratory laparotomy, total abdominal hysterectomy and bilateral salpingo-oophorectomy under general anaesthesia with endotracheal intubation.

2.1 Intraoperative Findings

- Massively distended abdomen.
- Clear ascitic fluid.
- Clean peritoneal surfaces (pelvis, omentum, visceral, diaphragm) no grossly metastatic lesions.
- Massive right ovarian cystic tumour measuring 40 cm by 24 cm by 24 cm with intact capsule and weighing 26.95 kg (Fig. 2).
- Grossly atrophic left ovary.
- Grossly normal uterus.

Estimated blood loss was 2.4L.

2.2 Post-operative Management

Her recovery from general anaesthesia was uneventful. She had a total of 4 units of blood transfused, two units intraoperative and 2 post-operative.

She maintained steady recovery first post-operative day. Her vital signs were normal and stable.

On subsequent review on the second postoperative day, her clinical condition had improved significantly. Her packed cell volume was 31%. She was now taking semi- solid diet and had completed her parenteral medications. She was given oral antibiotics and also placed on oral haematinics.

Subsequent recovery was uneventful and the wound dressing was removed on the fifth postoperative day. The wound healed by primary intention. She was discharged from hospital on 8th day post-surgery after suture removal with a 2 week clinic appointment.

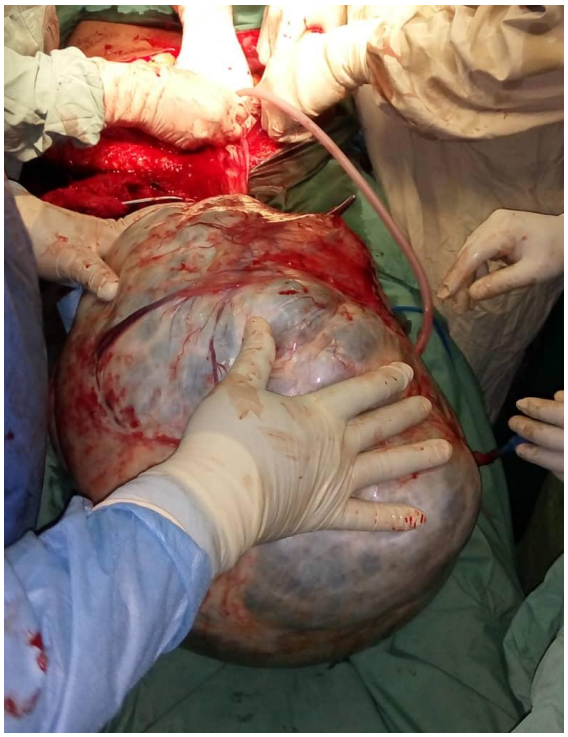

Fig 2. Massive collision tumour being delivered

2.3 Two Weeks Clinic Visit (24/09/18)

She was in good spirit and had no complaints. General physical examination revealed no abnormalities. Her weight was 73 kg and blood pressure was 130/80 mmHg. Full histology report revealed a collision tumour comprising serous papillary cystadenoma and a mature teratoma (Fig. 3).

3. DISCUSSION

Ovarian tumours are histologically classified according to the most probable cells of origin into epithelial (60%), germ cell (25%) and sex cord stroma (8%) [1].

The case presented had a histological diagnosis of both a mature teratoma and a serous papillary cystadenoma. These are both benign ovarian tumours (germ cell tumour and epithelial cell ovarian tumour respectively). The occurrence of two primary neoplasms in the same organ is called a collision tumour [2]. Ovarian collision tumours are extremely rare. Only few have been

reported in the English literature. Our case report is probably the 5th case report of an ovarian collision tumour involving a mature teratoma and serous (papillary) cystadenoma [2,3,4,5]. However, collision tumours of the gastrointestinal tract, lung, skin, adrenals, central nervous system, lymph nodes and uterus are relatively more common [2]. The most common component of the ovarian collision tumour is teratoma [2] as seen in the case presented.

Fig. 3. The section show gross dissected tumor mass received with tan coloured and smooth external surface with prominent vascular markings. The cyst cavity is multiloculated and are of varying sizes and wall thickness. The cyst cavities contains serous to pasty yellow materials. The internal surface is smooth

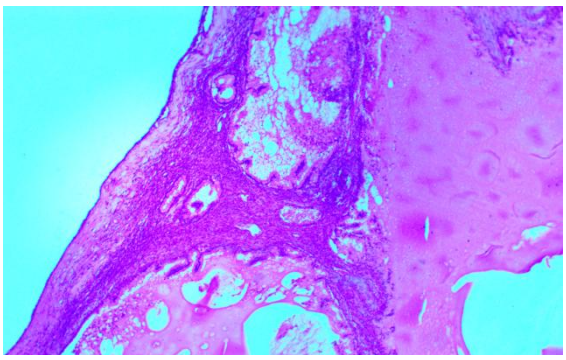

Fig. 4. The histologic section of tissue from the same ovarian tumour show small to large tortous glands some of which are cystically enlarged, forming papillary infoldings and dilated by eosinophilic secretions, though with minimal arhitectural complexity. The cysts are lined by a single layer of tall, columnar, ciliated cells . the nuclei are benign and the stroma contains spindly fibroblasts, consistent with serous cyst adenoma.(H & E x 100)

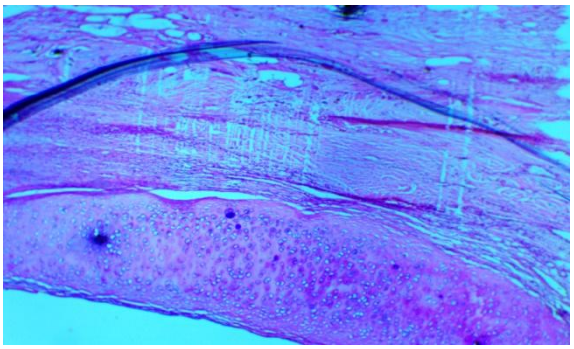

Fig. 5. The photomicrograph sections of tissue from the same ovarian tumour showing island of mature cartillage. The stroma contains fibroblast.The figure is consistent with mature cystic teratoma. (H & E x 100)

The mature teratoma accounts for at least 10% of all ovarian neoplasm and 60% of all benign ovarian tumours. They are typically slow growing, most measure between 5 to 10 cm in size and are bilateral in about 10% of cases. Malignant transformation is rare occurring in about 1% of cases [1,6,7].

The serous papillary cystadenomas are a common group of benign epithelial neoplasm. In up to 20% of patients, benign serous tumours are bilateral, occurring simultaneously in both ovaries [1].

The clinical presentation of Mrs U.B was unremarkable with unspecific symptoms as with other ovarian tumours [8]. The pelvic mass was however slow growing as she failed to seek orthodox help, rather preferring alternative medical healing, the mass became massive. The weight of 26.95kg to our understanding, after thorough review of the English literature, is the largest collision tumour ever reported.

Pre surgery investigations carried out were also not helpful in making a clinical diagnosis of an ovarian collision tumour. The CA 125 was normal. However, Singh and Singh reported an increased CA 125 in their case report [2], While Choudhary and Adisesha did not report CA 125 [3]. Mishra and colleagues reported normal CA 125 in their case report of a collision ovarian tumour (fibrothecoma with serous cystadenoma) [9].

We made a preliminary diagnosis of a complex ovarian tumour likely serous or mucinous cystadenoma on the basis of CT scan findings.

However, in making a pre surgical assessment of a collision tumour, it has been advised that when an ovarian tumour demonstrates imaging findings that cannot be subsumed under one histologic type, especially in cases of ovarian teratoma, a collision tumour should be considered [10,11]. A high index of suspicion should therefore be entertained when reviewing radiological imaging of ovarian tumours.

Intra operative findings were consistent with the benign nature of the pathology.

4. CONCLUSION

Making a clinical preliminary diagnosis of an ovarian tumour from history and examination is usually difficult. Medical imaging is therefore very key, as it provides not only the origin of the tumour but also gives a probable picture of the histological type. Collision tumours are very rare, but having a high index of suspicion is important as making the right preliminary histologic diagnosis could affect the prognosis and management plan.

CONSENT

All authors declare that 'written informed consent' was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editorial office/Chief Editor/Editorial Board members of this journal.

ETHICAL APPROVAL

As per international standard, written approval of ethics committee has been collected and preserved by the authors.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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