SUNTEXT REVIEWS

SunText Review of Virology

ISSN: 2766-5003

Open Access

Case Report

Volume 3:2

Serous Cystadenofibroma Resembling Ovarian Malignancy: A Case Report

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Received date: 02 December 2022; **Accepted date:** 15 December 2022; **Published date:** 24 December 2022

Citation: Daniyah E, Holder K (2022) Serous Cystadenofibroma Resembling Ovarian Malignancy: A Case Report. SunText Rev Virol 3(2): 135.

DOI: https://doi.org/10.51737/2766-5003.2022.035

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Abstract

Serous cystadenofibroma is a benign epithelial adnexal tumour. It is a rare tumour originates from the ovary due to unknown etiology. It is composed of cysts, glandular elements, and varying components of fibrous stroma. It is usually seen in adult women of reproductive age. Cystadenofibroma is mostly asymptomatic and often seen as incidental mass. This tumour may resemble malignant neoplasms on imaging. However, specific tumour characteristics on imaging distinguish it from malignant ovarian tumours. Therefore, MRI is the imaging modality of choice. Peritoneal implants may be seen intraoperatively making malignant neoplasm highly likely. Thus, intraoperative frozen section biopsy is the gold standard for cystadenofibroma diagnosis as it reduces unnecessary aggressive surgery. Complete surgical resection is the treatment of choice. We report a 20-year-old female diagnosed with ovarian serous cystadenofibroma with scattered lesions in the peritoneum resembling malignant dissemination.

Keywords: Benign ovarian neoplasms; Benign cystadenofibroma; Peritoneal implants

Introduction

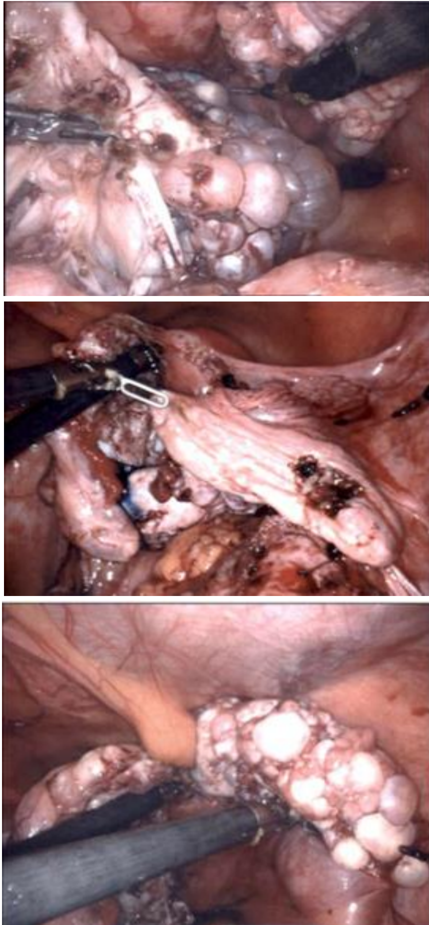
In 2020, breast cancer, cervical cancer, ovarian cancer, and uterine cancer earned positions in the top 10 most common female malignancies.1 Ovarian cancer is one of the most lethal gynecologic cancers with less than one-half of patients surviving over five years after diagnosis.2 The strongest risk factors for ovarian cancer include family history and advanced age.2 Ovarian tumors may be benign or malignant, and determining their etiology accurately and timely is essential to proper treatment. This can be especially difficult when benign tumours display features of malignancy [1]. Serous cystadenofibroma is a benign epithelial adnexal tumour. It is a rare tumour originates from the ovary and less likely the fallopian tubes due to unknown etiology. It is seen in adult women of reproductive age. Serous cystadenofibroma is composed of cysts, glandular elements, and varying components of fibrous stroma [2]. Cystadenofibroma is mostly asymptomatic and often seen as an intraoperative incidental mass.

Case Presentation

An 18-year-old nulligravid female presented with abdominal distention, secondary amenorrhea, and abnormal vaginal bleeding. Her menstrual cycle started to be irregular 3 years prior to the presentation. Vitals were within the normal range. Body mass index was 36.8 %. Physical exam showed distended, tense, non-tender abdomen. A large cystic mass was noted extending from the pelvis to the upper abdomen resembling a 30-week gravid uterus. Thinning hair over the vertex was noted. No acne, facial hair, or excessive body hair was noted. Complete blood count and serum biochemistry were unremarkable. Urine pregnancy test was negative. CA-125 was not performed. Pelvic CT scan with oral contrast demonstrated bilateral pelvic adnexal lesions suggesting a possible ovarian origin with multiple cystic masses measuring 8 cm on the left and 5.2 cm on the right. Another 1.9 cm hypodense lesion was noted in the right pelvic cul-de-sac adjacent to the rectum but separate from the right ovary.

Exploratory laparotomy was performed to confirm the diagnosis. Intraoperatively, a large cystic mass was visible of 7x10x11 cm in

the abdomen. On further inspection, there was another large cystic mass filling the entire pelvis and abdomen measuring 10x18x21 cm. bilateral ovaries have multiple small cysts. The right ovary has abnormal appearing growths suspicious of neoplasm. No lymph node enlargement or regional metastasis was noted. The masses were drained and the fluid was sent out for pathology which turned out to be negative for malignancy. Cystic masses were resected sparing bilateral fallopian tubes. The fallopian tubes were reconstructed. The intraoperative frozen section of the right ovarian mass showed papillary serous cystadenofibroma.



The post-operative course was uneventful. On a follow-up appointment, she was diagnosed with polycystic ovarian syndrome and started on metformin and a combined oral contraceptive. Postoperatively, she reported constant abdominal distention, pelvic discomfort, occasional nausea, and vomiting suggestive of intermittent ovarian torsion and possibly intestinal obstruction. No abnormal vaginal bleeding, hematuria, hematochezia, and melena were reported. Pelvic ultrasound demonstrated no evidence of ovarian torsion. A Pelvic CT scan showed enlarged residual cystic mass filling the pelvis and abdomen likely originating from one of the ovaries. Although open surgery for ovarian reconstruction was the best approach, preserving fertility was a priority given the benign nature of the tumour and patient's age. The decision was made to perform mini-laparotomy procedure for the drainage of the pelvic cystic masses, resection of the ovarian cyst, and construction of both ovaries. One year later and due to persistent symptoms, the patient underwent robotic-assisted lysis of adhesions and drainage of multiple ovarian cysts which measure about 8 to 10 cm in size each. Bilateral oophoropexy was pursued for the treatment and prevention of ovarian torsion. Pelvic MRI without contrast showed T2-weighted hypointense innumerable cystic changes of varying sizes in both ovaries favouring bilateral ovarian cystadenofibroma. Evaluation for solid components was limited due to lack of intravenous contrast.

Discussion

While ovarian cystadenofibromas are benign tumours, their symptomatology and presentation may be virulent and result in significant patient morbidity. Cystadenofibromas are rare, benign ovarian tumours composed of both epithelial and fibrous stromal components that typically present in the fourth to fifth decade of life. They account for less than 2% of benign ovarian tumours. On imaging, these tumours display typical characteristics of malignancy with cystic, complex cystic, or solid components separated by irregular, thick septae with papillary projections. Even on direct visualization during surgery, these tumours grossly appear virulent due to their heterogeneous characteristics. The tumour's fibrous components may allow it to be differentiated from malignant tumours on MRI. Unlike cyst adenofibroma, serous cystadenoma has minimal connective tissue components with the cysts being the major feature [3]. Preoperative imaging is inadequate to differentiate between benign and malignant tumours. Moreover, the gross appearance of these tumours intraoperatively may lead to misdiagnosis as malignant neoplasms due to peritoneal implants, extensive dissemination, or projections as seen in this patient [4,5]. However, specific tumour characteristics on imaging distinguish it from malignant ovarian tumours. Therefore, MRI is the imaging modality of choice [6]. Given the fibrous component of these benign adnexal tumours, they demonstrate low signal intensity in T2 weighted magnetic resonance images [7]. In contrast, serous cystadenocarcinoma demonstrates a strongly enhanced solid component. Cystadenofibroma most frequently demonstrates cystic mass with multiple septae and variable amounts of solid components [8]. However, in some cases, it can demonstrate bilocular or unilocular cystic mass with partially thickened walls on MR images. In some rare cases, it demonstrates unilocular or multilocular mass with cystic components and absent connective tissue structure similar to serous tumours. MRI is the gold standard modality to further investigate the nature of the tumour. These morphological patterns will be enhanced after

administration of intravenous contrast. Knowledge of these criteria help distinguish cystadenofibroma from other malignant ovarian tumours. Frozen section biopsy is the gold standard cyst adenofibroma diagnosis as it prevents aggressive surgery. Complete surgical resection is the treatment of choice. The prognosis is favourable. To relive pelvic discomfort while preserving fertility, cyst aspiration may be pursued instead of aggressive surgical approach. Careful observation will be practiced because of the high risk of ovarian torsion. Patient education and counselling for the benign nature of cystadenofibroma alleviate the psychological burden of the disease and may prevent unnecessary surgery.

Conclusion

Serous cystadenofibroma is a benign ovarian tumour. It resembles malignant neoplasms on imaging and morphological appearance. MRI is the imaging modality of choice for pre-operative diagnosis. Frozen section biopsy is the gold standard for cystadenofibroma diagnosis. The prognosis is excellent after complete surgical resection. Patient age and fertility are taken into consideration when choosing a treatment approach.

Highlights

- Ovarian serous cystadenofibromas are rare benign epithelial ovarian tumours. These tumours may cause acute abdomen due to cyst rupture and ovarian torsion.
- Benign ovarian tumours may mimic malignant neoplasms on imaging.
- MRI is the modality of choice for further characterization of the tumour.
- Frozen sections should be performed intraoperatively to guide and prevent unnecessary aggressive surgical approach.
- Surgical resection of the tumour is a treatment of choice considering fertility in young patients.

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