Case Report

Struma Ovarii: Imitating Malignant Ovarian Tumour Pre-Operatively

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Abstract

Struma ovarii is a rare variety of ovarian tumour that contain thyroid component accounting for 2-4% of ovarian teratomas. It usually presents as a unilateral adnexal mass at fifth and sixth decades of life. Majority of the cases are benign and can be managed by surgical excision. Malignant change is extremely rare. Pre-operative study combines ultrasonography, computer tomography scan and use of serum biomarkers in an attempt to differentiate from malignancy, because struma ovarii is a rare tumour with non-specific clinical presentation. Here we present a case of struma ovarii that presented with misleading findings pointing towards malignancy. A 38 years old lady, para 4+1, presented to us with an abdominal lump and occasional abdominal pain for 6 months. Her ultrasonography, as well as CT scan of whole abdomen findings suggested malignancy. The tumour markers like CA-125 and CA-19-9 were also elevated. Total abdominal hysterectomy with bilateral salpingo-oophorectomy along with infracolic omentectomy was performed. Struma ovarii was diagnosed by histopathology with negative cytology for malignancy. Due to vague clinical manifestation, elevated tumour markers and imaging characteristics, pre-operative diagnosis was challenging.

Keywords: *Struma ovarii; Salpingo-oophorectomy; Omentectomy.*

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Introduction

Struma ovarii is a monodermal variant of ovarian dermoid tumour, in which thyroid components constitute more the 50% of the mass.[1] It is accounting for 2-4% of ovarian teratomas and 0.2-1.3% of all ovarian tumours.[2] Majority are benign and can be managed by surgical excision. Malignant change is extremely rare.[3] Ascites may be found in approximately 17% of cases and association with elevated CA-125 is rare.[1] We present a case of struma ovarii that presented with misleading findings pointing towards malignancy. Pre-operative study combines ultrasonography, computer tomography scan & use of serum biomarkers in an attempt to differentiate malignancy, because struma ovarii is a rare tumour with non-specific clinical presentation.[4] The treatment of struma ovarii is surgical, consistent in the removal of ovarian cyst

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Case report

A 38-year-old lady reported to our hospital with the complaints of abdominal distension and pain off and on for 6 months. On per abdominal examination, a lump of about 16x10 cm was found arising from pelvis, which was non-tender, mobile and partly solid and partly cystic in consistency. On bimanual examination a large partly solid and partly cystic abdominopelvic lump with smooth surface was felt through posterior and right fornices, which were separated from uterus. Her USG as well as CT scan of whole abdomen revealed a large lobulated mixed density mass having cystic and solid component, septation and calcification measuring about 17x11.8 cm was noted in pelvic cavity extending up to the umbilical region, possibly originating from right ovary with mild ascites. Tumour was free from other structures and there was no lymphadenopathy. Some of the tumour markers were slightly raised; CA-125: 86 U/mL, CA-19-9: 101.47 U/mL, LDH 155.95 U/L, CEA <0.50 ng/mL, Alfa-fetoprotein <1.30 ng/mL, serum TSH 1.74 µIU/ mL. All other blood parameters were within normal limit. X-ray chest revealed mild right sided pleural effusion.

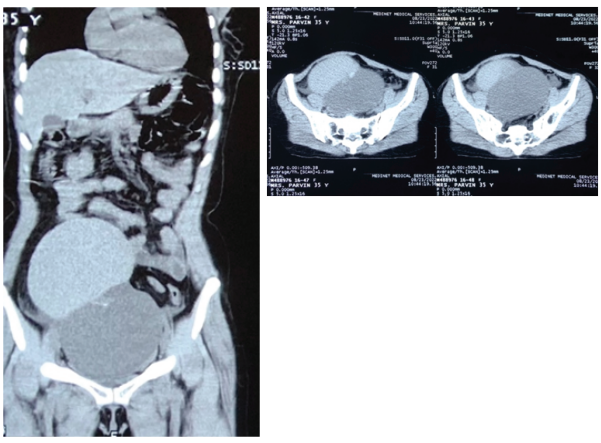

Fig. 1: Well-defined multiloculated partly solid partly cystic ovarian lesion in right ovary with mild ascites in CT scan

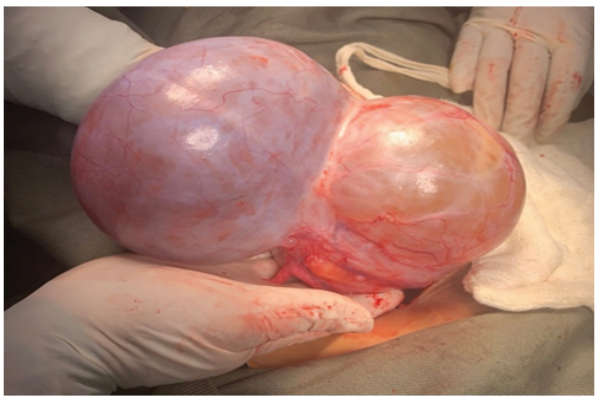

Fig. 2: Per-operative picture of right ovarian tumour

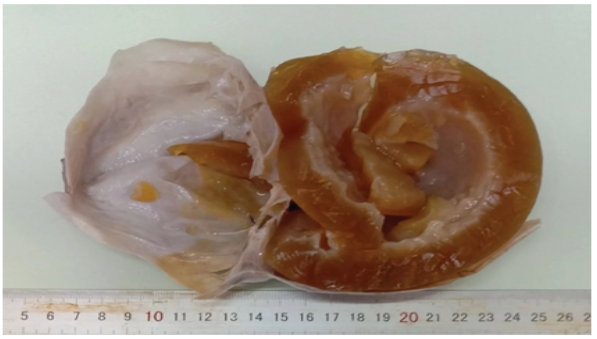

Fig. 3: Gross specimen - cut surface is multilocular containing mucoid and jelly like materials

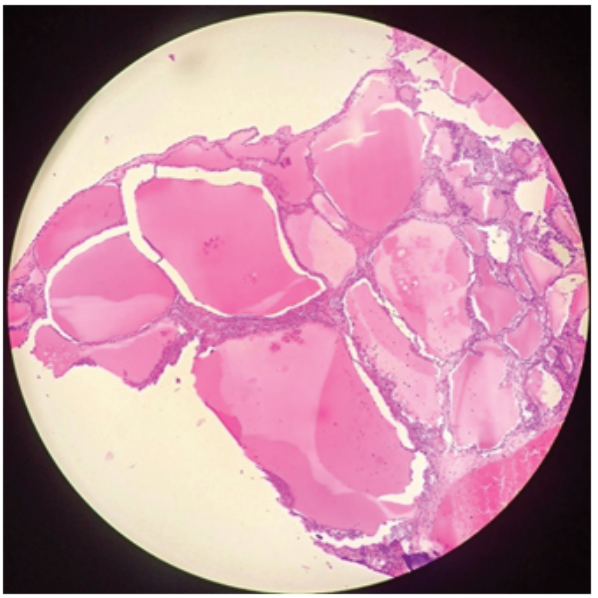

Fig. 4: Mature thyroid tissue is seen with follicles of various sizes, surrounded by cuboidal cell on slide stained with hematoxylin and eosin

Total abdominal hysterectomy with bilateral sulphingo-oophorectomy along with infracolic omentectomy was performed as there was high degree of suspicion of malignancy. On opening, mild ascites was found which was sent for cytology. There was a big multiloculated partly solid partly cystic right ovarian cyst which was free from any adhesion. Uterus was normal in size and left ovary was enlarged having multiple follicular cysts. Thorough abdomino-pelvic exploration was done. There were no metastatic deposits or any pelvic or para-aortic lymphadenopathy. Histopathological report revealed struma ovarii on right side and multiple cystic follicles with area of haemorrhage on left side. Uterine wall showed non secretory thinned out endometrium with unremarkable myometrium and evidence of chronic cervicitis with squamous metaplasia on cervix. There was no evidence of malignancy on omental tissue as well as other structures with negative fluid cytology. Postoperatively, the patient recovered uneventfully.

Discussion

Struma ovarii is a rare ovarian tumour that usually presents in the 5th decade of life.[4] Although about 15% of all ovarian teratomas contain one or more foci of thyroid tissue, only 3-5% has thyroid tissue occupying more than 50% of tumour mass, qualifying for the diagnosis of struma ovarii.[5,6] These tumours can also manifest pseudo Meig's syndrome.[7] Our case also presented with mild ascites. Pre-operative study includes various tumour markers, USG and CT scan. A study includes 68 cases of struma ovarii, about 65% of these had pre-operative diagnosis of possible ovarian malignancy, like in our case.[8] Mild elevation of tumour markers is very frequent due to peritoneal irritation of ascites. CT scan is not very useful to rule out malignancy because struma ovarii usually presents as heterogenous cysts with solid component like in our case. Hematological parameters are usually within normal range with possibility of rise of tumour marker like CA-125 but it is nonspecific.[9] That is why diagnosis of struma ovarii can not be confirmed by clinical, biochemical or imaging test. Diagnosis is confirmed by presence of mature thyroid tissue on histopathological examination following surgical excision.[10]

The management of struma ovarii depends on various factors like age of patient, desire of fertility, size of tumour, benign or malignant and peritoneal metastasis.[11] After completion of family, total abdominal hysterectomy and bilateral sulphingo-ophorectomy is done with peritoneal cytologic washing, infracolic omentectomy and sampling of pelvic and para-aortic lymph node, if possible.[12] Follow up for malignant struma ovarii is not well defined due to the fact that the disease is very rare and it is based on the follow up for ovarian and thyroid cancer guidelines.[13]

Conclusion

Struma ovarii is challenging to diagnose due to its diversity in clinical manifestation. Elevated level of tumour markers and imaging study may point towards malignancy. Final diagnosis is made by histopathology. Patients should be counselled for follow up.

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