Malignant struma ovarii: a rare case report

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ABSTRACT

Background: Struma ovarii is a rare ovarian tumor. Most of the cases are benign and a few cases have previously been reported with malignant transformation.

Case Presentation: A 55-year-old multiparous woman presented with excessive menstrual bleeding, lower abdominal pain, and distention. Histopathology report confirmed the presence of struma ovarii. Total abdominal hysterectomy and bilateral salpingo oophorectomy was done.

Conclusion: Recommendation for treatment is excision of the tumor (teratoma) with follow up to see any metastatic possibility.

Keywords: Struma ovarii, malignant, ovarian cancer, papillary thyroid carcinoma, case report.

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Background

Thyroid tissue is commonly observed in the ovarian teratoma. Struma ovarii is only diagnosed when the thyroid tissue is the major part (more than 50%) of the teratoma [1]. The incidence of struma ovarii is reported to be 1% of the tumor found in ovaries [2]. The peak incidence is reported in 5th decade and mostly in the left ovary [3].

It is difficult to diagnose or differentiate malignant form of struma from benign tumors as malignant form may not be hormonally active. Consequently, thyrotoxic symptoms due to this entity may not be observed. I-131 whole body scan is not included in the battery of tests for ovarian tumors. Struma ovarii may be hormonally active and may (rarely) present with symptoms of toxicity. It is mostly presented with lower abdominal discomfort, pain or pelvic mass. Most of the teratomas are unilateral and benign. Malignant changes in Struma ovarii are rare. So, the criteria for diagnosis and treatment of malignant struma ovarii are not established. The diagnosis of malignancy is based on cell atypia, baseline distortion, and involvement of vessels, lymphatics and capsule. Preoperative diagnosis is difficult. Ultrasonography (USG), computed tomography (CT), and magnetic resonance imaging (MRI) are not specific. Only preoperative iodine scan could show thyroid tissue in the pelvis (not done routinely). Treatment option may vary from unilateral oophorectomy (young patients with unilateral disease) to bilateral salpingo-oophorectomy (BSO) with total abdominal hysterectomy (TAH) (older patient, post menopause, bilateral disease) followed by total thyroidectomy followed by radioactive iodine treatment.

Here we present a case of ovarian mass proved to be a case of malignant struma ovarii.

Case Presentation

A 55-year-old multiparous woman presented with excessive menstrual bleeding, lower abdominal pain, and distention. There was no previous medical and surgical history. The patient did not respond to standard treatment for bleeding. On examination, mild tenderness was observed in the lower abdomen. Vaginal examination revealed mass in left ovarian region.

A complex mass with cystic component (73 × 49 mm) was appreciated on pelvic ultrasound. The uterus was pushed by a rounded mass (49 × 52 mm) giving an impression of calcified fibroid. On CT scan, solid cystic mass (6.4 × 5.35 cm) with post contrast enhancement and calcification was proven in left ovary. Blood reports, complete blood count, urea, creatinine, and urine were unremarkable. Her HBV, HCV, and HIV status was negative. (Pre-operative requirement). X-Ray chest was normal. (Fig 1) Urinalysis showed normal values. CA 125, the widely accepted tumor marker of ovarian cancers, was not raised (Patient 11.59 IU/ml, Normal up to 35 IU/ml).

TAH and BSO was planned. Pfannenstiel incision was given under spinal anesthesia. There were no peritoneal/visceral sign of any pathology and adhesions. Left ovary had a mass with lobulated appearance. We did TAH and BSO (removal of left adnexal mass). The patient recovery was unremarkable and was discharged on the 3rd day

with all signs of stability. The tissue sent for histopathology was found to be "malignant struma ovarii" with intact capsule. Immunohistochemistry stains thyroid transcription factor 1 and Cytokeratin 7 are positive (Fig 2). These two stains are positive in most of differentiated thyroid cancers. Thyroid function test, USG, and abdominal CT were normal. The patient was advised follow-up visit after 6 months.

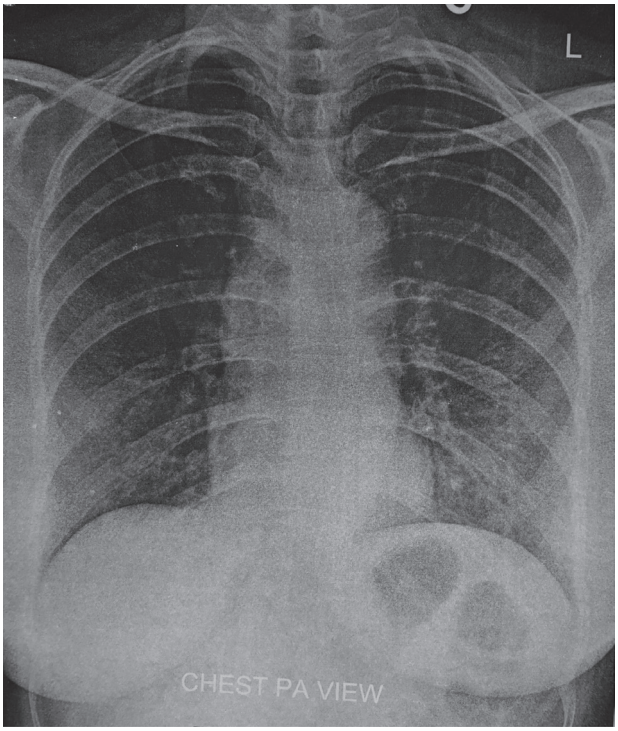


Figure 1. *X-ray chest with no mets.*

Discussion

Struma ovarii is a rare ovarian teratoma having significant thyroid tissue (more than 50% of total tumor) [4]. It usually has mature thyroid tissue. The incidence of struma ovarii is about 5%. Struma ovarii with malignant transformation is rare.

The tumor may present as pelvic discomfort, with a pelvic mass on abdominal imaging, (USG, CT, MRI) or during laparotomy for any other reason [4]. The presence of thyroid tissue may show the pathology ranging from thyroiditis, adenoma, Grave's disease, and even carcinoma as in our case [5]. Preoperative definitive diagnosis of stroma ovarii is not possible. The only possibility of preoperative diagnosis is by radioactive iodine scan (not done routinely). Despite being a rare tumor, the treatment options for Struma ovarii with malignant tissue have long been debated [6]. The treatment plan may vary with reference to tumor size, age of the patient, need to preserve fertility and metastasis. Hence, the patient may benefit from simple oophorectomy (to preserve fertility) to TAH and BSO [7]. Thyroid is usually observed by investigations like hormone level, USG, and iodine scan (rarely). This opinion is based on the idea that thyroid in the ovary is not the same as thyroid in neck and it is exposed to different environments in the abdomen where TG and anti TG are not routinely required. Metastasis is not so common. Thyroglobulin (Tg) is a sensitive marker for monitoring

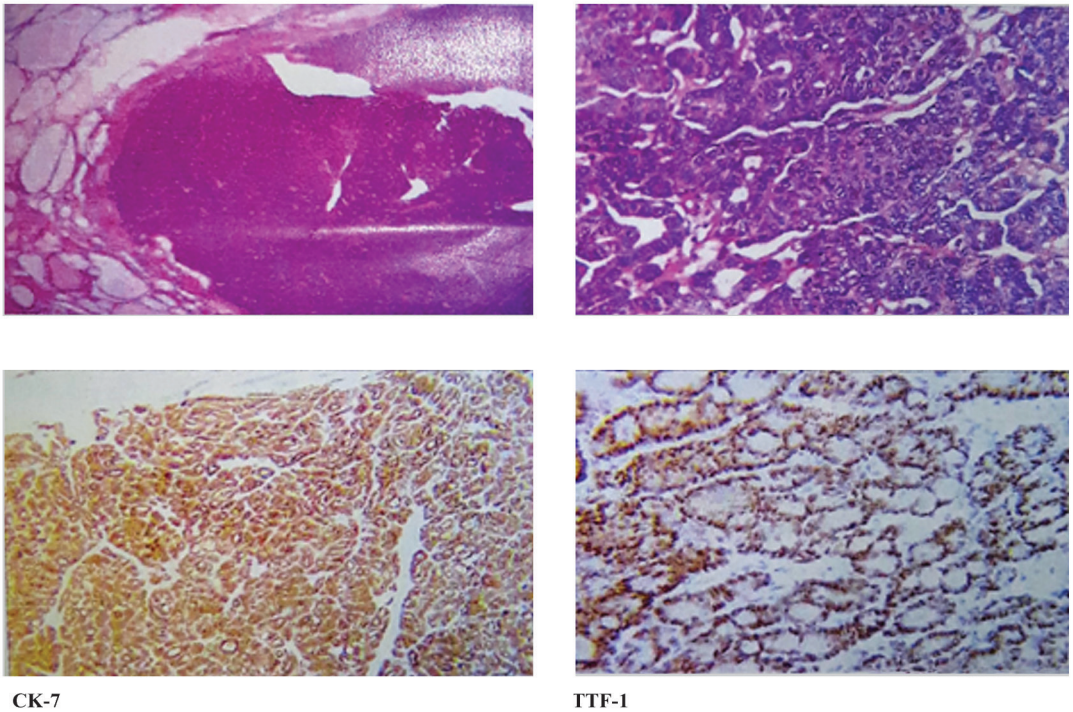


Figure 2. *Histopathology with thyroid transcription factor 1 and Cytokeratin 7 staining.*

cases of struma ovarii, both benign and malignant, during treatment and follow-up [8].

Conclusion

Recommendation for treatment of struma ovarii is excision of the tumor (teratoma) follow up is done to see any local recurrence or metastasis (Distant spread by thyroglobulin level i-e very rare).

Acknowledgement

None

List of Abbreviations

BSO	Bilateral salpingo-oophorectomy
CT scan	Computerized tomographic axial scan
GA	General Anesthesia
Mm	Millimeter
MRI	Magnetic Resonance imaging
TAH	Total abdominal hysterectomy
USG	Ultrasonography

Consent for publication

Informed written consent was taken from the patient to publish this case report in a medical journal.

Ethical approval

Ethical approval to publish a case report is not required at our institution.

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Summary of the case

Patient (gender, age)	1	55 year female
Final Diagnosis	2	Malignant stroma ovarri
Symptoms	3	abdominal distention with bleeding PV
Medications	4	N/A
Clinical Procedure	5	Surgery under spinal anesthesia
Specialty	6	Surgery