

Struma Ovarii, A Rare Ovarian Tumor: Case Report

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Abstract Struma ovarii represents a rare type of teratoma that is formed entirely of thyroid tissue. In most cases, these tumors are benign; however, malignant ones have also been reported. It is usually seen between 40 and 60 years and accounts for about 5 % of all cases of ovarian teratomas. Our case was a female patient, 40 years old, who was presented with vaginal bleeding, abdominal swelling and left sided pelvic mass for six months. Clinical examination and imaging techniques showed left ovarian neoplastic lesion and small amount of fluid in Douglas pouch. After laparoscopic excision, Histopathological examination was performed, it showed ovarian tissue, predominantly formed of mature thyroid tissue which are the key features of struma ovarii. In Conclusion: Struma ovarii is a rare ovarian tumor with variable clinical presentations, even can be malignant. Pre-operative diagnosis is usually difficult and confusing, so, it should be put in consideration in differential diagnosis of ovarian masses.

Keywords: Struma ovarii, ovarian tumor, thyroid, laparoscopy, benign

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1. Introduction

Struma ovarii is a rare ovarian tumor belonging to class of monodermal, highly specialized teratoma. Usually, they are benign, unilateral, seen in the right ovary and usually not exceeding 10 cm; however, variable sizes have been reported (4-25) cm. Microscopically, this tumor is formed of benign thyroid tissues, in rare cases (5-10%), it contained thyroid carcinoma [1].

Thought, the first reported case was in 1895 by Von Kalden [2], Struma ovarii is tremendously rare in our clinical practice, as it represents only 1% of ovarian tumors. [3].

Although, nearly 15% of ovarian teratoma harbors thyroid tissue, they are not considered struma ovarii except if this tissue forms more than half of the tumor cells [4].

It is commonly presented at age range of 40-60 years, but some females have been reported with struma ovarii in broad range of age between 6-74 years [5].

The clinical presentation is non specific and like any ovarian mass or tumor, commonly, pelvic discomfort, abdominal distension and pain. Preoperative diagnosis is very hard because it is rare, and the available imaging investigations such as (Ultrasound, Computerized Tomography (CT) and Magnetic Resonance imaging (MRI) are all nonspecific and usually show only pelvic mass that can be either dermoid cyst, benign or malignant ovarian cystic tumors [5].

Most cases are hormonally inactive, but sometimes it can be active and presented by features of thyrotoxicosis.

Usually these symptoms disappear after surgical excision of the tumor mass [6]

The only preoperative way to make a diagnosis for struma ovarii is the scintigraphy Iodine 131 that can show active thyroid tissue in the pelvis. [5].

There is no agreement regarding the best method for treating struma ovarii because of its rarity, however, it is usually surgical. As most cases are benign and unilateral, simple unilateral salpingo-oophorectomy is the commonest. The choice of treatment depends on tumor extent and if the female wishes further childbearing [4].

2. Case Report

A 40 years old multiparous female, with previous 3 normal vaginal deliveries and no past medical nor surgical history, was presented to our clinic by vaginal bleeding, lower abdominal pain and discomfort.

On clinical examination, there was a left pelvic mass and abdominal swelling.

The pelvic ultrasound showed AVF uterus with normal contour, myometrium and normal endometrial thickening 5 mm. The right ovary size was 36x25x23 mm, ovarian volume was =10.5 ml. The left ovary size was 47x46x32 and volume was 35 ml. The ultrasound showed also a left heterogenous ovarian mass measuring 98x80x63 mm with mild vascularity. It indents the anterior uterine wall but sliding over the uterus and surrounded with mild vascularity (Figure 1).

The patient's tumor markers (CA125, Carcino Embryonic Antigen and Alfa Feto Protein) were all unremarkable.

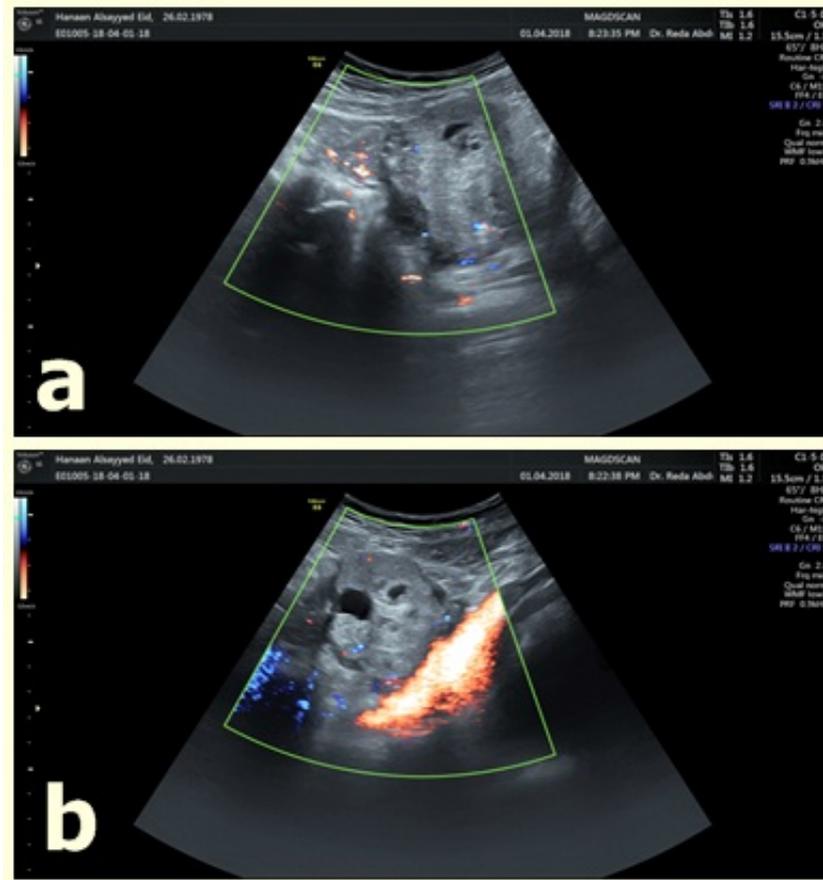


Figure 1(a,b). Doppler ultrasound showing heterogeneous mass in left pelvic region

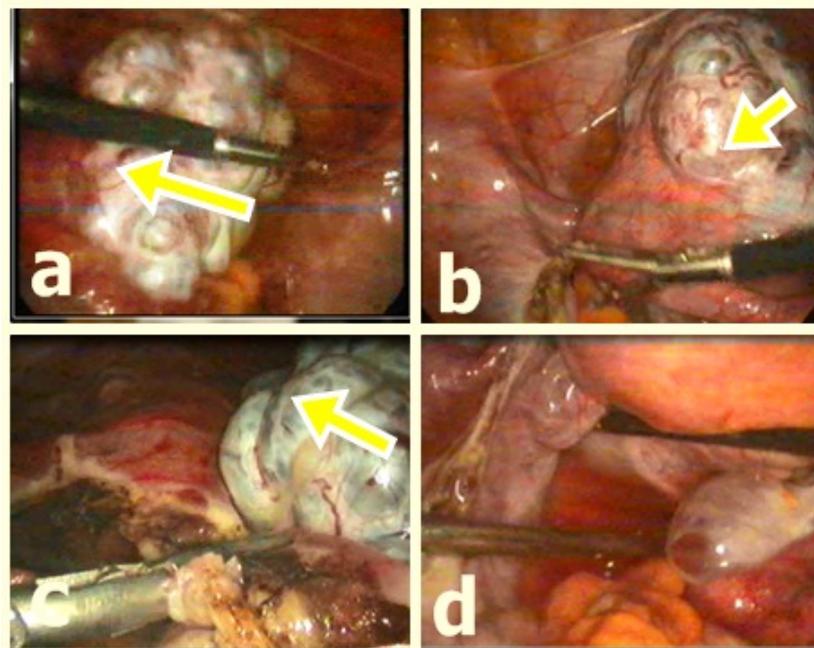


Figure 2(a,b,c,d). Laparoscopic adenectomy of the mass(yellow arrow)

We decided a laparoscopic exploration for the patient. It showed normal site and size of uterus and right normal ovary. The left ovary was enlarged, solid with multiple cysts. There was mild intra-peritoneal fluid in Douglas pouch. We performed left adenectomy and peritoneal fluid aspiration (Figure 2).

Grossly: The mass was well defined, measuring 12x8x7 cm, showing lobulated grayish tan glistening cut section

traversed by whitish bands with no extracapsular extension. 4.5 cc of turbid yellow fluid also was examined (Figure 3).

Microscopically: The mass revealed nodules formed of thyroid tissue separated by fibrous bands of various thickening. The thyroid follicles were variable sized and some were cystically dilated; all filled with colloid with areas of hyperplasia with foci of recent and old hemorrhage (Figure 4).

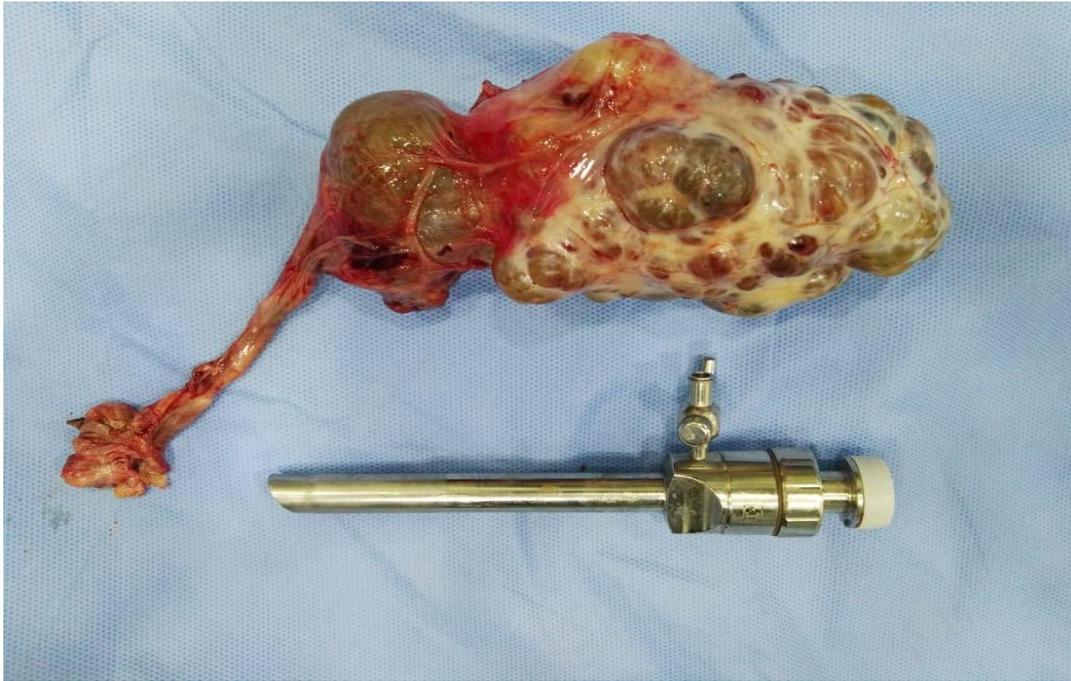


Figure 3. Gross appearance of the resected mass showing lobulated outer surface traversed by whitish fibrous bands

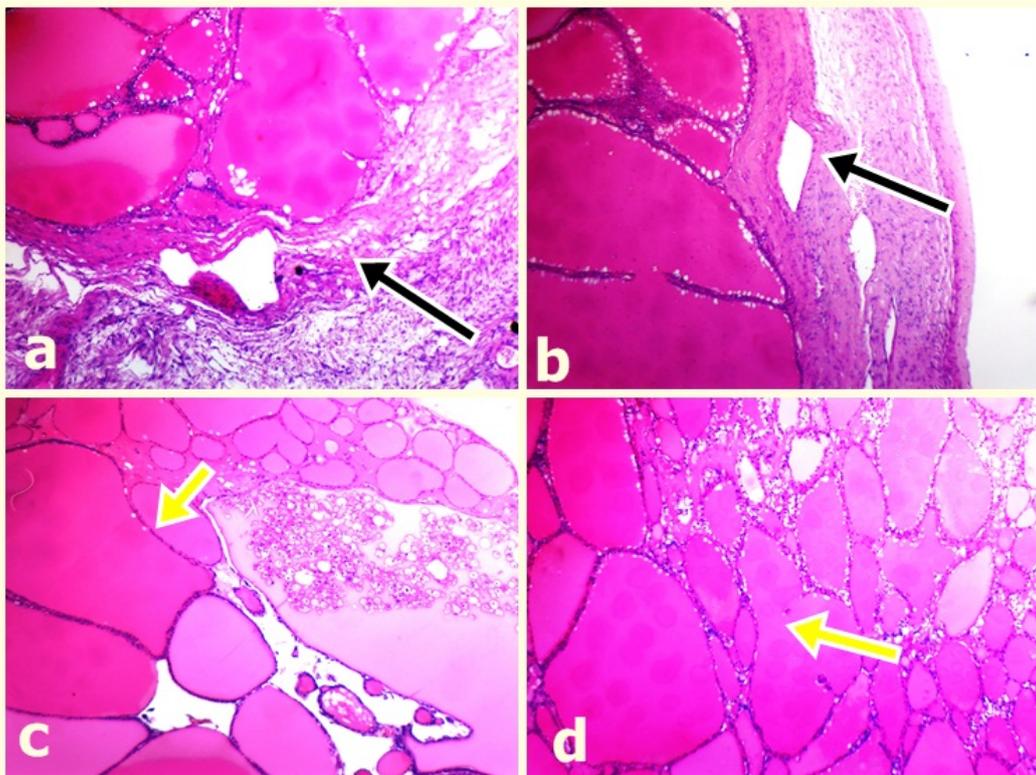


Figure 4. Histopathological examination of the mass revealed thyroid tissue in contact with the ovarian parenchyma (black arrow)(a,b).The tumor is formed of variable sized thyroid follicles , lined by flattened cuboidal epithelium and distended with colloid(yellow arrow)(c,d)

Cytological examination of the peritoneal fluid revealed strips and individually scattered bland mesothelial cells and negligible inflammatory cells.

The specimens showed no evidence of immature tissue or malignancy.

Postoperative follow up period was uneventful and the case was discharged from hospital to home two days after operation. Patient was tested for CA125 level and thyroid functions three months later and all were within normal.

3. Discussion

Struma ovarii is one of the rare ovarian tumors which is formed of mature thyroid tissue About fifteen percent of all ovarian teratomas harbors one focus or more of thyroid tissue, however, thyroid tissue occupy most of the tumor in 3-5% only [7]

Different studies showed variable incidences of struma ovarii. Its incidence varies in different studies.

Higuchi et al, reported in 1960, 3 cases from 1000 solid ovarian tumors (0.3%). A more recent review, reported 2 cases of struma ovarii among 282 ovarian tumors (0.7%). [8]

It is commonly presented as a mass in the pelvis, that can be palpable on examination, according to size and site of the tumor [9] In most circumstances, the condition is incidentally discovered during imaging and clinical examination or during laparotomy, as in our case, that was only diagnosed after the histopathology result has proved the condition.

The preoperative diagnosis of this tumor is rare because the imaging studies that are used are non-specific, the only method for preoperative diagnosis is by scintigraphy with iodine (131) that show active thyroid tissue in pelvis. [5]

Struma ovarii can also be presented by manifestations of hyperthyroidism in addition to pelvic mass, if it is hormonally active. [10] Not all cases are benign, about 5-10% of struma ovarii can show malignant transformation [11].

As this tumor is rare, there is no consensus on its management and every case is managed individually. The appropriate management of struma ovarii depends on many factors including age, fertility desire, type of tumor whether benign or malignant, size of the mass, and peritoneal metastasis [12].

Unilateral struma ovarii in young females at reproductive age is usually treated by unilateral adnexectomy, while total abdominal hysterectomy with bilateral salpingo-oophorectomy is better recommended for female patients with bilateral struma and in postmenopausal women [13].

In malignant transformation cases, a combined complete resection of the tumor, total thyroidectomy and adjuvant ablation is a must mandatory; as there is support that struma ovarii behaves like the thyroid counterparts [14].

In our case, left adnexectomy was carried out, and the thyroid functions were within normal after operation. Struma ovarii cases are commonly nonfunctional, only minority of diagnosed cases manifest hyperthyroidism, as a result of autoimmune activation of the thyroid tissue. However, surgical removal of the mass in these cases typically results in disappearance of symptoms.

In rare cases, surgical resection can cause exacerbation of hyperthyroidism due to release of TSH receptors stimulating antibodies after operation.

We present this case because it is rare, and despite of clinical and radiological data suggested malignant nature,

Histopathologically, it was proved to be benign struma ovarii.

4. Conclusion

Struma ovarii is a rare ovarian tumor with variable clinical presentations, even can be malignant. Pre-operative diagnosis is usually difficult and confusing, so, it should be put in consideration in differential diagnosis of ovarian mass.

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