



# Struma Ovarii in a Patient with Mature Cystic Teratoma: A Rare Case

## Matür Kistik Teratomu Olan Bir Hastada Struma Ovarii: Nadir Bir Olgu

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### Abstract / Özet

Struma ovarii is a highly specialized monodermal teratoma of the ovary. Despite its rare occurrence, it can sometimes become clinically significant. A 41-year-old woman had laparoscopic right salpingooforectomy because of a persistent adnexal mass. The pathology I result was a mature cystic teratoma with struma ovarii. In this case we have discussed the clinical importance and treatment options for struma ovarii with a brief review of the literature.

**Key Words:** Dermoid cyst, teratoma, struma ovarii

Struma ovarii overin üst düzeyde farklılaşmış bir monodermal teratomudur. Nadir görülmesine rağmen bazen klinik önemi olabilir. Kırk bir yaşındaki bir kadına persiste eden adneksiyal kitle nedeni ile laparoskopik sağ salpingooforektomi yapıldı. Patoloji sonucu matür kistik teratomla birlikte struma ovarii olarak belirtildi. Bu sunumda struma ovarii'nin klinik önemi ve tedavi seçeneklerini kısa bir literatür taraması ile birlikte tartıştık.

**Anahtar Kelimeler:** Dermoid kist, teratom, struma ovarii

### Introduction

Struma ovarii is a monodermal variant of ovarian teratoma, which was first described by Bottlin in 1888 and, later, by Pick in 1902 and 1903 (1). Although 5-37% of these cases undergo malignant transformation, this tumor is generally benign in nature (2). Most of the patients had an asymptomatic mass, and diagnosis was usually made postoperatively by histologic examination. It was described about one century ago, but there is still no consensus in the literature about the classification or treatment options because of its rare incidence.

### Case Report

A 41-year-old woman Gravida 4, Para 4 presented to our gynecology clinic with a complaint of lower quadrant pain. There was a persistent right ovarian cyst for six months in her medical history. Her laboratory tests were CA125: 22.1 IU/mL, CA19.9: 6.19 IU/mL, CEA: 0.99 ng/mL, TSH:0.98 mU/mL, Free T4:1.14 ng/dl and Free T3:1.77 pg/mL. She had right salpingoophorectomy via laparoscopy and the material was sent for frozen section investigation. The result was struma ovarii so the operation ended with this procedure. Postoperative thyroid function tests were evaluated and TSH, Free T4 and Free T3 levels were all within normal limits. Thyroid ultrasonography revealed a 0.7 cm solid nodule in the thyroid gland. The patient's postoperative course was uncomplicated and she was discharged on her second postoperative day. The patient received no adjuvant therapy and had no recurrence of the disease 6 months after the operation.

The pathology report showed a gross surgical specimen of cystic material measuring 9x9x4 cm that contained a 2x2x1.5 cm brownish nodular lesion. The cystic material was defined as mature cystic teratoma and the nodular lesion was non tumorous thyroid tissue that formed large and small follicles with ovarian stroma (Figure 1, 2).

### Discussion

Mature cystic teratomas account for approximately 20% of all ovarian tumors (3). Struma ovarii is a highly specialized monodermal teratoma which is composed predominantly (over 50%) or entirely of thyroid tissue or forms a macroscopically recognisable component of mature cystic teratoma (4). In the World Health Organization (WHO) classification, struma ovarii and malignant thyroid tumours arising within struma are included in the thyroid tumour group under the heading monodermal teratoma and somatic-type tumours associated with dermoid cysts (5). In that regard, struma ovarii is the most common type of monodermal teratoma, accounting for nearly 3% of all ovarian teratomas. Histopathologically, struma ovarii is composed of various-sized thyroid follicles filled with pink-staining, homogenous, gelatinous colloid, lined with cuboidal or

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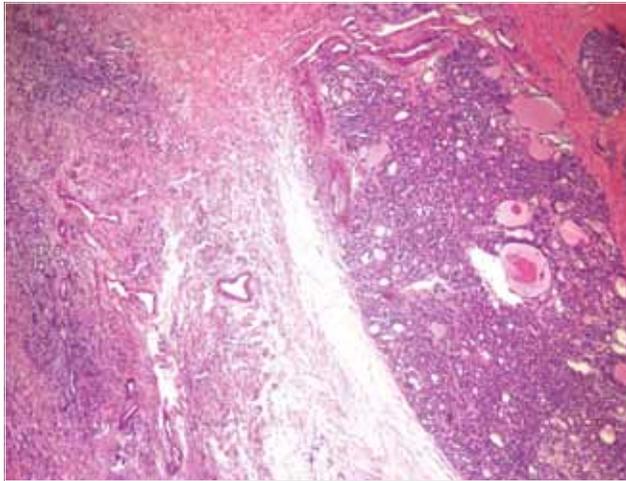
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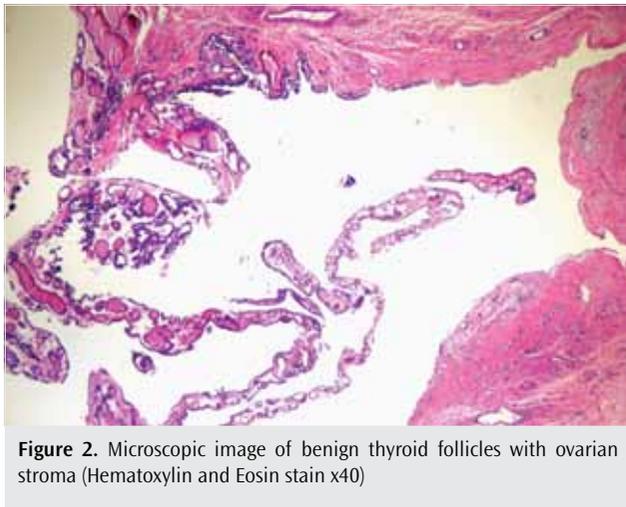
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**Figure 1.** Mature thyroid tissue with colloid-containing follicles of varying size (Hematoxylin and Eosin stain x40)



**Figure 2.** Microscopic image of benign thyroid follicles with ovarian stroma (Hematoxylin and Eosin stain x40)

columnar epithelium, and separated by internal septations (1). The rate of malignant transformation in struma ovarii is less than 5% and, even if malignancy is present histologically, the clinical behaviour of these tumours is usually benign (2). The most common thyroid-type carcinoma occurring in struma ovarii is papillary carcinoma like the thyroid gland (1).

Although the typical presentation is that of a pelvic mass, most patients are asymptomatic; unusual clinical manifestations such as hyperthyroidism (reported incidence, 5%), ascites, and Meig's Syndrome have been recognized (6). Ultrasound usually shows a complex appearance with multiple cystic and solid areas reflecting the gross pathology. Magnetic resonance imaging is more specific, with cystic spaces showing both high and low signal intensity on T1- and T2-weighted images arising from the gelatinous colloid (7).

Since it is rarely encountered, there is no consensus about the diagnosis and treatment and the prognosis is difficult to evaluate. In the literature, some authors propose that struma ovarii with metastatic

behavior should be regarded as malignant and the women diagnosed with malignant struma ovarii who have completed child-bearing should undergo hysterectomy and bilateral salpingo-oophorectomy, lymph-node dissection and omentectomy (2, 8, 9). If fertility is desired, conservative treatment such as unilateral oophorectomy should be the choice. In our case, the final pathology result was benign so we did not plan any other intervention. Although elevated levels of thyroglobulin have been demonstrated in both benign and malignant struma ovarii, after surgery it can be an important tumor marker predicting recurrence (10). An increase in serum thyroglobulin levels should alert the clinician and total body scintiscanning with I 131 should be done to confirm recurrence of the disease.

## Conclusion

In conclusion, the typical presentation of struma ovarii is a pelvic mass and it is usually diagnosed postoperatively, based on histological findings. It is difficult to decide about the universal treatment and follow-up of patients with malignant struma ovarii due to its rarity. More data are needed to determine the management protocols and prognosis.

## Conflict of Interest

No conflict of interest was declared by the authors.

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