

Case Report

# Struma Ovarii: A Case Report of a Rare Teratoma of the Ovary in Vietnam

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## Abstract

Struma ovarii is a rare type of ovarian teratoma, characterized by the predominance of thyroid tissue. The definitive diagnosis of struma ovarii is established by histopathology. The disease typically affects women between the ages of 40 and 50 and is often unilateral. Struma ovarii rarely presents before puberty and exhibits very slow growth. In most cases, the clinical presentation of struma ovarii is similar to mature teratoma. Preoperative diagnosis is difficult because the clinical symptoms, imaging findings, and serum markers are non-specific. In a few cases, struma ovarii can present with symptoms mimicking ovarian cancer. However, even with the presence of ascites and hyperthyroidism, the majority of cases are benign. Ovarian cystectomy or oophorectomy is appropriate for most cases. The majority of symptoms will resolve post-surgery. The prognosis is generally favorable.

## Keywords

Struma Ovarii, Teratoma, Dermoid Cyst, Ovarian Tumor

## 1. Introduction

Struma ovarii is an uncommon ovarian tumor first described in 1889 by Boettlin, who identified the presence of thyroid tissue in the ovary, with more comprehensive reports later published by Gottschalk. The diagnosis of struma ovarii is made when thyroid tissue constitutes more than 50% of the tumor mass [1, 2]. Struma ovarii accounts for approximately 1% of all ovarian tumors and 2.7% of all ovarian teratomas, affects women between the ages of 40 and 50 and is often unilateral [3, 4]. Due to its low incidence, data in the medical literature regarding the diagnosis and management of this tumor type are limited [5]. Struma ovarii rarely secretes a sufficient amount of thyroid hormone to cause hyperthyroidism.

## 2. Case Presentation

A 61-year-old woman, G3P3, postmenopausal for 12 years, presented to the gynecology clinic for lower abdominal discomfort. For approximately one month, she had experienced a dull pain in the hypogastric region, rapid abdominal distention, and constipation. A pelvic examination revealed an atrophic uterus. The right adnexa was not palpable, while a mobile mass approximately 12cm in diameter was palpated in the left adnexa. The patient had been diagnosed with hypertension one year prior and type 2 diabetes mellitus five years prior, for which she was receiving medical treatment. Other systems were unremarkable, and she had no symptoms of hyperthyroidism. Her family history was negative for similar conditions or cancer.

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Ultrasound revealed a multiloculated ovarian cyst with a solid component. Magnetic Resonance Imaging (MRI) suggested a mixed left ovarian tumor measuring 10.5 x 12 x 17cm, comprising a mucinous cystadenoma and a mature teratoma. Tumor markers were within normal limits (AFP=2.02ng/mL; CA-125=21.2U/mL; HE4=89.1pmol/L; ROMA VALUE=23.41%;  $\beta$ -hCG negative).

The patient underwent a laparotomy. Intraoperatively, 20 ml of clear, yellow ascitic fluid was found in the abdominal

cavity. The uterus and right adnexa were atrophic. The left ovary contained a mobile, multilobulated tumor measuring 18 x 12 x 12cm. The surface was smooth, without papillations or neovascularization. The liver, stomach, and omentum appeared normal. Peritoneal fluid was collected for cytology, and a left salpingo-oophorectomy was performed for histological diagnosis. On gross examination, one locule of the tumor contained hair, sebaceous material, and scalp fragments (\*). The remaining locules were filled with mucinous fluid.



(\*) A locule containing hair, sebaceous material, and scalp fragments.

**Figure 1.** Gross image of a resected multi-lobulated struma ovarii.

Histopathological examination confirmed a benign struma ovarii, and no malignant cells were found in the ascitic fluid. The patient had a swift recovery and was discharged in stable condition four days post-surgery.

### 3. Discussion

Germ cell tumors account for 15-20% of all ovarian neoplasms, the majority of which are mature teratomas. Among ovarian teratomas, struma ovarii constitutes only 2.7%. Struma ovarii is typically benign, with a malignancy rate of only 0.3-5%, and even when malignant, metastasis is rare [6]. The reported metastasis rate for malignant struma ovarii is between 5-6% [7]. Clinical symptoms are often nonspecific, and preoperative diagnosis remains a significant challenge. The definitive diagnosis is usually based on histopathology [8, 9].

The clinical presentation of struma ovarii is similar to that of other ovarian tumors. Yoo SC et al. (2008) reported that common clinical symptoms include abdominal pain, abdominal distention, a palpable hypogastric mass, and abnormal uterine bleeding [5]. Symptoms of hyperthyroidism are infrequent, occurring in only 5-8% of struma ovarii cases [8].

The diverse, variable, and nonspecific symptoms make struma ovarii difficult to diagnose based solely on clinical and imaging findings. Surgical resection of the tumor or adnexa is the appropriate treatment for benign struma ovarii, even in

cases with hyperthyroidism, ascites, or pleural effusion. These symptoms typically resolve spontaneously after the tumor is removed.

The malignancy rate of struma ovarii is less than 5%, and the histological criteria for diagnosis are similar to those for thyroid carcinoma [10]. Malignant struma ovarii requires postoperative adjuvant therapy, including total thyroidectomy and radioactive iodine-131 therapy, to reduce mortality and recurrence rates [11]. Serum thyroglobulin levels can be used as a marker for tumor recurrence [10]. Side effects of I-131 include amenorrhea, premature menopause, and an increased risk of miscarriage. Women of reproductive age treated with I-131 should be advised to delay pregnancy for at least 6 months after the final treatment course [12].

### 4. Conclusions

Struma ovarii is a rare type of ovarian tumor. Its clinical, laboratory, and imaging presentations vary widely among patients. The standard treatment for benign struma ovarii is surgical resection. Malignant struma ovarii requires additional adjuvant therapies, but the rate of malignancy is quite low [5].

### Abbreviations

MRI    Magnetic Resonance Imaging

## Author Contributions

**Tuan Ho:** Data curation, Formal Analysis, Funding acquisition, Investigation, Project administration, Resources, Software, Supervision, Validation, Visualization

**Yen Nguyen:** Conceptualization, Formal Analysis, Funding acquisition, Project administration, Resources, Software, Validation, Visualization

## Conflicts of Interest

The authors declare no conflicts of interest.

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## Biography



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## Research Field

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