Papillary thyroid cancer found in struma ovarii: a case report

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SUMMARY
Struma ovarii is composed of thyroid tissue originated from germ cells in a mature teratoma. Thyroid carcinoma found in struma ovarii is very rare. Primary thyroid carcinoma should be excluded. We present a 62-year-old female with papillary thyroid carcinoma in a mature teratoma as a incidentally found diagnosis. The patient underwent the surgery because of the endometrial carcinoma, while the histopathological examination found endometrial carcinoma as well as malignant struma ovarii. From the surgical point of view, it is very important to evaluate thyroid gland status in patients with malignant struma ovarii.

Key words: Thyroid Neoplasms; Struma Ovarii; Teratoma; Ovarian Neoplasms; Endometrial Neoplasms

INTRODUCTION
Struma ovarii is composed of thyroid tissue originated from germ cells in a mature teratoma. Malignant struma ovarii is very rare as well as metastases of this neoplasm. It is usually asymptomatic and incidentally diagnosed, involving only one ovary (1). It is important to exclude the primary thyroid cancer which metastases can be found in the ovary, although it is very rare (2).

CASE REPORT
A 62-year-old woman came for her gynecologic exam because of metrorrhagia. Pelvic ultrasonography features showed thickened endometrium (20.7 mm), left ovary size of 23.2 mm x 13.6 mm, and right ovary was not visualized. Fractionated explorative curettage was performed and histopathological examination of endometrium verified endometrial carcinoma. Operative treatment was indicated. Laparoscopic total hysterectomy and bilateral adnexectomy was performed. Histopathological examination of uterus and ovaries had confirmed endometrial carcinoma and found mature teratoma in left ovary with predominant thyroid tissue-struma ovarii. After detailed examination of struma ovarii, there was found focus of papillary thyroid carcinoma (Figure 1). Postoperative radiotherapy was indicated for endometrial carcinoma and examination of thyroid gland.

Figure 1. Focus of papillary thyroid carcinoma inside the thyroid component of ovarian teratoma

Laboratory tests for thyroid disorders were run, Serum TSH, FT3, FT4 were in the reference range, the same was for Tg and ATI. Ultrasoundography of thyroid gland showed one heterogeneous nodule in the right thyroid lobe, dimensions 22.6 mm x 15.7 mm (Figure 2). Fine needle aspiration was performed two times but cytology finding showed only erythrocytes. Surgical treatment was indicated. Right thyroid lobectomy was performed. Specimen was sent to the histopathological examination, the final diagnosis was nodal colloid struma without malignant cells.

DISCUSSION
Malignant struma ovarii is very rare, about 0.1% to 0.5% of all ovarian tumors. It involves only one ovary, appearance is very similar to thyroid tissue, red-brown (3). Metastatic disease of this malignancy can be found in the peritoneum, liver, bone, lung, and brain (4). Patients with this disease are usually asymptomatic; most of them present with a pelvic mass, which pelvic ultrasonography shows as heterogeneous, solid mass (5). Because of suspected malignancy, patients undergo surgery. Histopathological frozen section often reveals only teratoma. Further histopathological examination shows struma ovarii. Biochemical and clinical hypothyroidism is not usual but it can be found in 5% of cases (6).

The percentage of patients with coexisting primary thyroid carcinoma is unknown, because there were no systemic reviews.
Treatment and management include initial pelvic surgery, total hysterectomy, and bilateral adnexectomy. In young fertile females with this disease, often is performed unilateral adnexectomy. Thyroxin therapy could be used for patients with low risk of recurrence. Some authors suggest near-total thyroidectomy and radioactive iodine ablation for patients with high risk of recurrence or metastatic disease (7).

In the patient’s follow up, monitoring of serum thyroglobulin can be performed as a marker of metastatic disease (2). First line therapy for the recurrent disease should be near-total thyroidectomy and radioactive iodine. Patients with metastatic disease were treated with radiotherapy and chemotherapy (8).

The focus of papillary thyroid carcinoma in struma ovarii that was found in our patient was incidentally discovered after surgical treatment of endometrial carcinoma. Right thyroid lobectomy was performed and histopathological examination showed benign thyroid nodule. The follow up included pelvic and thyroid ultrasonography, and the checkups of serum thyroglobulin level.

CONCLUSION
From the surgical point of view, it is very important to evaluate thyroid gland status in patients with malignant struma ovarii.

Conflict of interest
We declare no conflicts of interest.

REFERENCES
7 DeSimone CP, Lele SM, Modesitt SC. Malignant struma ovarii: a case report and analysis of case reported in the literature with focus on survival and 1131 therapy. Gynecol Oncol. 2003;89:543-8.