Papillary thyroid cancer found in struma ovarii: a case report

Ivan Majdevac, Dejan Lukić, Milan Ranisavljević

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*

Arch Oncol 2013;21(3-4):141-2.

UDC: 616.441-006:618.
11-006:618.14-006:616.071
DOI: https://doi.org/10.2298/AOO1304141M

Oncology Institute of Vojvodina,
Operative Oncology Department,
Sremska Kamenica, Serbia

Correspondence to:
Dr. Ivan Majdevac,
Oncology Institute of Vojvodina,
Department of Operative Oncology,
Put doktora Goldmana 4,
21204 Sremska Kamenica, Serbia

majdevac.ivan@onk.ns.ac.rs

Received: 17.12.2013
Provisionally accepted: 20.12.2013
Accepted: 23.12.2013

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.

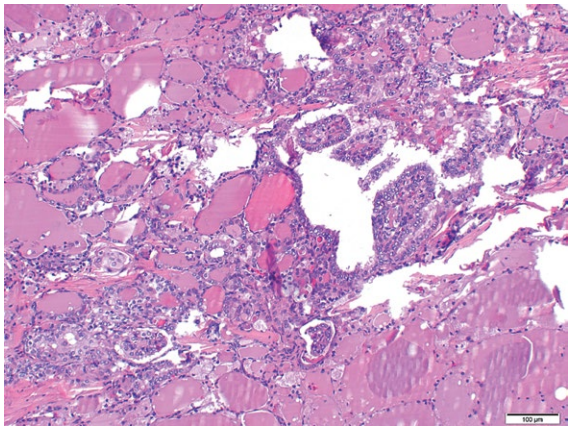

Figure 1. Focus of papillary thyroid carcinoma inside the thyroid component of ovarian teratoma

Laboratory tests for thyroid disorders were run, Serum TSH, fT3, fT4 were in the reference range, the same was for Tg and ATA. Ultrasonography 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.

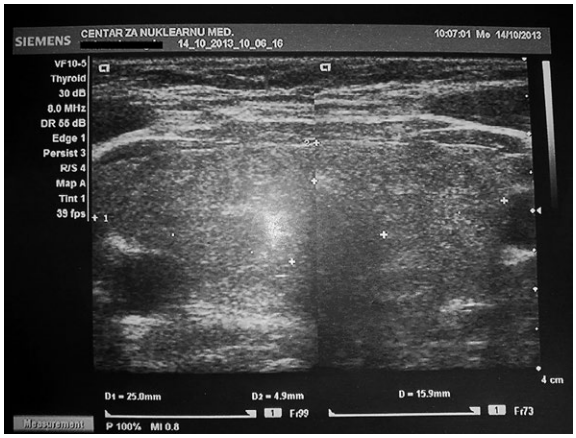

Figure 2. Nodule in the right thyroid lobe

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 ulstrasonography 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

1 Yoo SC, Chang KH, Lyu MO, Chang SJ, Ryu HS, Kim HS. Clinical characteristics of struma ovarii. *J Gynecol Oncol*. 2008;19(2):135-8.

2 Makani S, Kim W, Gaba AR. Struma Ovarii with a focus of papillary thyroid cancer: a case report and review of the literature. *Gynecol Oncol*. 2004;94(3):835-9.

3 Robboy SJ, Shaco-Levy R, Peng RY, Snyder MJ, Donahue J, Bentley RC, et. al. Malignant Struma Ovarii: An Analysis of 88 Cases, Including 27 with Extraovarian Spread. *Int J Gynecol Cancer*. 2009;28(5):405-22.

4 Zekri JM, Manifold IH, Wadsley JC. Metastatic struma ovarii: late presentation, unusual features and multiple radioactive iodine treatments. *Clin Oncol*. 2006;18(10):768-72.

5 Garg K, Soslow RA, Rivera M, Tuttle MR, Ghossein RA. Histologically bland „extremely well differentiated" thyroid carcinomas arising in struma ovarii can recur and metastasize. *Int J Gynecol Pathol*. 2009;28(3):222-30.

6 Yassa L, Sadow P, Marqusee E. Malignant struma ovarii. *Nature Clinical Practice Endocrinology & Metabolism*. 2008;4:469-72.

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 I131 therapy. *Gynecol Oncol*. 2003;89:543–8.

8 Rose PG, Arafah B, Abdul-Karim FW. Malignant struma ovarii: recurrence and response to treatment monitored by thyroglobulin levels. *Gynecol Oncol*. 1998;70:425–7.