

Papillary thyroid microcarcinoma in *struma ovarii*

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A 62-year-old woman presented abdominal pain and a right-sided pelvic mass. Ultrasonography showed a large, thick-walled, cystic ovarian mass with solid components. The patient underwent laparotomic monolateral annessectomy. Histology showed an endometriotic cyst, with a 17-cm *struma ovarii* containing a 3-mm single papillary thyroid carcinoma. Pelvic ultrasonography showed a normal left ovary, abdomino-pelvic CT scan showed only two renal cysts. The patient had no previous history of thyroid disease. Thyroid evaluation showed a 12 × 17 mm hypoechoic nodule with benign cytological findings in the right thyroid lobe. Serum TSH was 4.8 mIU/l, thyroglobulin concentration was 126 ng/ml, and both thyroglobulin and TPO antibodies were undetectable. Because of persisting slightly increased TSH levels, L-thyroxine (75 µg/die) administration was started 2 months after pelvic surgery. Serum TSH and thyroglobulin levels decreased to 0.5 mIU/l and 1.5 ng/dl, respectively.

The definition of *struma ovarii* applies to ovarian teratomas consisting of 50% or more thyroid tissue [1]. Its presentation usually resembles a solid tumor and the patients are readily addressed to surgery. Less than 5% of *struma ovarii* cases may also show hyperthyroidism. Occasionally, the diagnosis is made during the follow up of differentiated thyroid carcinoma, due to increased serum thyroglobulin levels and/or focal pelvic uptake at whole-body scan. Histological features of thyroid carcinoma are

found in 5–37% of *struma ovarii* cases (malignant *struma ovarii*). Most reported cases are classical or follicular variant of papillary carcinomas [1–4]. Individual cases of follicular and mixed (follicular and papillary) carcinoma have been described [3]. Ovarian metastasis of primary thyroid carcinoma may rarely occur [2].

The clinical behavior of malignant *struma ovarii* is based on single case reports. Metastases, mainly to the adjacent pelvic occur in up to 23% cases. Distant metastases (lungs, bone, liver, and brain) have occasionally been reported [2].

There is no consensus on the surgical approach and postoperative management of malignant *struma ovarii* patients. A total abdominal hysterectomy is usually performed with mono/bilateral salpingo-oophorectomy. When extra-ovarian invasion is present, omentectomy, peritoneal washings and lymph node sampling can be associated. If histology shows a malignant *struma ovarii*, a risk stratification similar to that used in thyroid carcinoma should be performed. PTCs larger than 20 mm, disease extension outside the *struma ovarii*, or aggressive histological variants should be considered high risk. In such cases total thyroidectomy and radioactive iodine ablation are required [4]. This would allow both serum thyroglobulin monitoring and radioactive iodine treatment of recurrent disease [5]. The case patient was 62 years old and presented a unique papillary microcarcinoma in her *struma ovarii*, with no evidence of either carcinoma in the thyroid gland or metastases at pelvic imaging studies. For these reasons, we excluded thyroidectomy. L-thyroxine therapy was administered to normalize serum TSH levels, so minimizing serum thyroglobulin fluctuations. We also recommended periodic pelvic imaging and measurements of serum thyroglobulin. After 1 year follow up, the thyroid nodule remained unchanged and both pelvic ultrasonography and

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abdomino-pelvic CT scan did not show any evidence of tumor relapse. Serum TSH and thyroglobulin levels were stable.

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