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Follicular Variant Papillary Thyroid Carcinoma Arising within an Ovarian Teratoma

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A 49-year-old female presented to the hospital with abdominal pain and emesis. A computed tomography (CT) scan revealed a small-bowel obstruction and a right ovarian mass measuring 4.6 cm. Following oophorectomy, histopathology revealed a mature cystic teratoma with multiple foci of benign thyroid tissue, as well as a 0.9 cm focus of follicular variant papillary thyroid cancer (Figs. 1 and 2) surrounded by normal ovarian tissue (Fig. 3). Thyroid ultrasound and serum thyroid function tests were normal. A ¹³¹I diagnostic whole body scan (WBS) did not reveal any abnormal uptake in the abdomen or pelvis, and an abdominal CT was normal. A high-dose (423 mCi) ¹²³I WBS performed 6 months later was also negative. Based on the small size of the primary carcinoma and the lack of evidence of metastases on imaging, the patient received no further treatment.

Differentiated thyroid cancer (DTC) arising from ovarian teratomas is a rare occurrence, with an estimated incidence of 0.1–0.3% (1,2). Most cancers are found incidentally on histopathology. DTCs arising from ovarian teratomas can occasionally present with locally invasive disease or with distant metastases, and may be associated with recurrences in some patients (2). Following surgical resection of the lesion, the need for further therapy, including total thyroid-ectomy and radioiodine ablation, is based on the extent of the primary lesion and the evidence of persistent or meta-static disease by imaging. There is very little data on the natural history or prognosis of papillary microcarcinomas of ovarian origin. Given the similarity of their histological appearance to those arising in the thyroid, a generally favorable prognosis is anticipated.

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FIG. 1. Follicular variant papillary thyroid carcinoma within an ovarian teratoma. Normal ovarian tissue is seen on the left (N). On the right, normal-appearing thyroid tissue (T) merges with a focus of follicular variant papillary thyroid carcinoma (PTC).

FIG. 2.

High-power magnification of follicular variant papillary thyroid carcinoma arising within ovarian teratoma. The tumor has predominantly microfollicular growth pattern with occasional normal-sized follicles filled with colloid (C) and lined by cells with overlapping nuclei showing clearing of chromatin and irregularity in nuclear contours.

FIG. 3.
Normal ovarian tissue from the same ovary. Note the presence of normal ovarian stromal cells and blood vessels.