MALIGNANT STRUMA OVARIUM: A CASE OF A COLUMNAR VARIANT OF PAPILLARY THYROID CARCINOMA


1. Department of Pathology, University Hospital of Fuenlabrada, Madrid, Spain.
2. Department of Medical Oncology, University Hospital of Fuenlabrada, Madrid, Spain.
3. Department of Nuclear Medicine, University Hospital of Fuenlabrada, Madrid, Spain.

BACKGROUND

- Struma ovary (SO) is a type of monodermal teratoma where the mature thyroid tissue is the predominant component.
- Only 5-10% of SO develop a thyroid carcinoma, accounting for 0.01% of all ovarian tumors. Papillary thyroid carcinoma (PTC) is the most prevalent type in SO.
- The columnar cell variant of PTC is defined by the presence of at least 30% of elongated cells with nuclear stratification and scant cytoplasm. Variants of PTC are infrequent in SO and their diagnosis is challenging. Differential diagnosis is complicated and includes endometrioid and mullerian adenosarcoma, serous-lymphoid cell tumors, and metastatic microcystic carcinoma.
- To our knowledge, this is the first case of a columnar variant of PTC reported in SO.

METHODS

A 57-year-old patient presented with a history of hypermenorrhea. Echographic images revealed a 4-cm benign cyst in her right ovary. She was lost to follow-up and, 10 years later, the lesion showed hyperintensity, the left ovary was affected, and there were multiple adhesions to the uterus and rectum. A hysterectomy and bilateral adnexitomy were decided. Despite adjuvant chemotherapy, the patient returned with peritoneal carcinomatosis and cytotoxic surgery was performed. One year later, a CT scan showed liver and peritoneal metastases refractory to radioactive iodine therapy (131I). A regime of 20 mg/kg levantinitib (a thymo kinase inhibitor) was started but within a few months the patient presented with an ischemic intestinal perforation and died. All biopsies were processed in paraffin and hematoxylin-eosin and immunohistochemistry stains were performed.

RESULTS

We received a left ovary occupied by a cystic lesion with necrotic and solid areas and a fragmented right ovarian mass. An infiltrative hypercellular neoplasm with pseudoglandular pattern and some groups of fine papillae was found. It exhibited a pseudostratified epithelium formed by cells of little cytoplasm, elongated and hypochromic nuclei and focal subnuclear vacuolization. These findings were interpreted as an endometrioid adenocarcinoma of endometroid type. A subsequent of peritoneal implants revealed a focus of classic papillary carcinoma amidst the same endometrioid-like features. Both were reviewed and tested positive for TTF-1, PAX-8, and thyroglobulin, leading to the final diagnosis of a columnar cell variant of PTC in SO. No synchronic tumors were found in the thyroid gland. The peritoneal and liver metastases (not biopsied) proved to be non-cancerous on the radioactive iodine scintigraphy.

DISCUSSION

- The columnar variant of PTC is a rare thyroid tumor whose evolution is not entirely known. It exhibits endometrioid-like features (pseudoglandular appearance, elongated and stratified nuclei, supra or subnuclear vacuolization) that makes its identification hard, specially when found in extrathyroidal locations. These tumors are positive for TTF-1, thyroglobulin and occasionally for CDX2.
- The most prevalent malignant SO are follicular thyroid carcinomas and classic PTC. The aggressive variants of PTC are uncommon in SO and it is unclear if the same criteria of malignancy apply outside the thyroid gland.

BIBLIOGRAPHY

4. Hath-Mc, Erikson M. Aggressive Variants of Papillary Thyroid Carcinoma. Adv Anot Pathol [Internet]. 2018;.