Ovarian neoplasm composed of an insular carcinoid tumor and a borderline mucinous cystadenoma arising in a mature cystic teratoma: a case report

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Summary

We report the case of a 57-year-old female patient with an ovarian neoplasm of insular carcinoid and mucinous cystadenoma of low malignant potential, arising in a cystic teratoma of the right ovary. Additionally, a mature teratoma of the left ovary was present. This is an extremely rare combination of primary tumors in the ovary. The possible common histogenesis of the afore-mentioned tumors is discussed.

Key words: Carcinoid; Cystic teratoma; Mucinous cystadenoma.

Introduction

Malignant transformation of mature cystic teratoma (MCT) is an uncommon complication occurring in approximately 1-3% of patients histopathologically diagnosed with mature cystic teratoma [1, 2]. Despite the fact that any of the constituent tissues of a teratoma have the potential to undergo malignant transformation, squamous cell carcinoma is the most commonly associated cancer [1]. Primary ovarian carcinoids are frequently encountered in association with mucinous cysts and occasionally with mucinous cystadenomas [3]. The present report describes a case of primary ovarian carcinoid and mucinous cystadenoma of low malignant potential, arising in a cystic mature teratoma of the right ovary with a co-existing MCT of the left ovary.

Case Report

A 57-year-old female patient complained of abdominal swelling for six months. Laparotomy revealed a large cystic right ovary and a smaller cystic left ovary. Bilateral salpingo-oophorectomy and hysterectomy were performed. The pathologic findings were as follows: a 23 x 17 x 13 cm right ovary was composed of a multilocular cyst within which arose solid nodules of soft, yellowish tissue. The left ovary measured 7 x 5.5 x 4 cm.

On microscopic examination, the cyst with elements of mature teratoma, was lined by mucinous epithelium, showing slight to moderate cellular atypia and moderate nuclear stratification (borderline mucinous cystadenoma). The solid neoplasm was composed of nests of atypical cells with the appearance of an insular carcinoid (Figure 1). Immunohistochemically the carcinoid part was positive for the neuron-specific enolase (NSE), chromogranin and synaptophysin (Figure 2). The microscopic examination of the left ovary revealed a cystic mature teratoma.

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Discussion

Mature cystic teratoma (MTC), which is bilateral in 15-25% of cases [4], is a teratomatous cyst predominantly lined by epidermis with skin appendages. In two-thirds of such cases, mature elements reflecting differentiation into tissues normally derived from all three embryonic germ layers are present. Carcinoma may arise from any of the epithelial elements [5]. Any of these constituents has the potential to undergo benign or malignant transformation to form a tumor within a tumor. The most important secondary tumor is squamous cell carcinoma [1, 6]. The frequency of malignant transformation of MCT to adenocarcinomas is just 6.8% [7, 8]. Mucinous cystadenocarcinoma arising from MCT is very rare [8].

Ovarian carcinoids are frequently encountered in association with mucinous cysts and occasionally with mucinous cystadenomas [3]. Most ovarian carcinoids are of the insular or trabecular type. The insular type, appearing as nests or islands, has cells characterized by copious cytoplasm, polygonal and distinct borders and oval to round central nuclei with coarsely clumped chromatin. The cytoplasm on the luminal side is pale, whereas the subnuclear basal areas contain argentaffin granules. Trabecular carcinoid is charactrerized by ribbons of cells with copious cytoplasm and finely granular chromatin [9]. The coexistence of mucinous cystadenoma of low malignant potential and that of carcinoid tumor strengthens the hypothesis that carcinoid tumor arises from argentaffin cells, and is probably a constituent of the mucinous epithelium [10]. Primary carcinoids must be distinguished from metastatic carcinoid tumors. Features supporting an ovarian origin include the additional presence in the specimen of teratoma or an ovarian surface epithelial tumor, an absence of blood vessel or lymphatic space invasion, and confinement to a single ovary [11]. Primary ovarian carcinoids metastasize only occasionally

g. 1

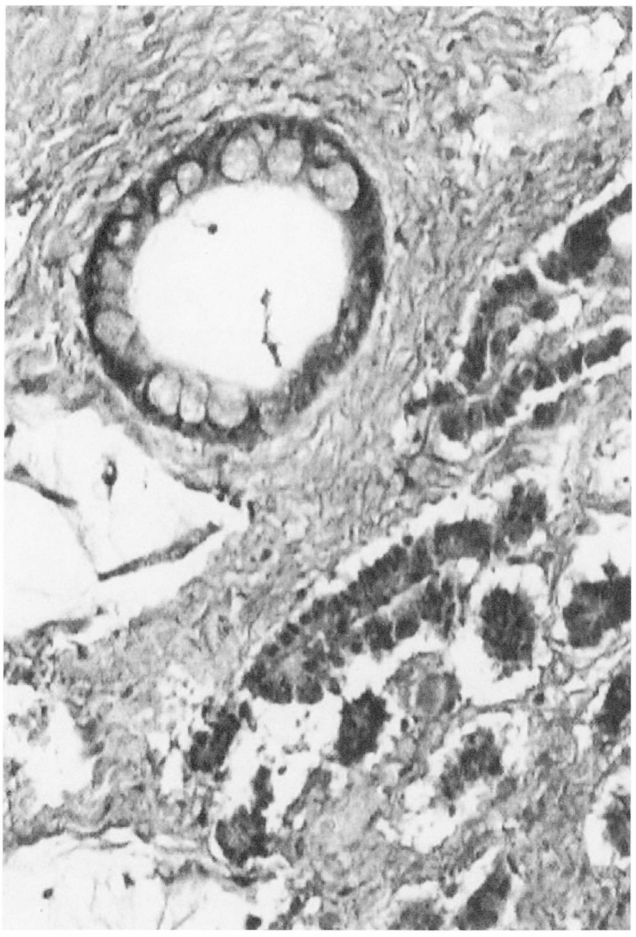

Fig. 2

Figure 1. — Borderline muscinous cystadenoma with coexistence of insular carcinoid (hematoxylin and eosin x 16).
Figure 2. — Immunohistochemical stain with chromogranin for carcinoid.

and should be treated as ovarian tumors of low malignant potential [12].

In conclusion, this case report reveals the rare occasion of malignant transformation of a mature cystic teratoma into an insular carcinoid and a mucinous cystadenoma of low malignant potential.

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