Mature cystic teratomas (dermoid cyst) make up almost 20% of all ovarian neoplasms. Although they are almost always benign tumors, the rare development of cancer deserves emphasis. A case of carcinoid tumor of insular type is presented. The small focus of carcinoid tumor was found incidentally in a resected dermoid cyst. Histologically, the tumor had thick fibrous septa among the cell nests. The tumor revealed argyrophilia by Grimelius stain. The immunohistochemical studies demonstrated positivity for Chromogranin A, Synaptophysin, NSE, Prostatic Acid Phosphatase (PAP) and Substance-P. This case is considered to be a rare ovarian carcinoid arising from a dermoid cyst without an association of struma ovarii. Immunohistochemistry will be helpful in demonstrating the neuroendocrine nature of the tumor cells.

Key Words: Carcinoid tumor, Dermoid cyst

Mature cystic teratomas (dermoid cyst) make up almost 20% of all ovarian neoplasms. Although they are almost always benign tumors, the rare development of cancer deserves emphasis. The most common malignant change in a dermoid cyst is squamous cell carcinoma, followed by adenocarcinoma and carcinoid tumor (1-3). Primary of ovarian carcinoid tumors are uncommon and the majority of them are associated with mature cystic teratomas (4). Robboy et al (5) divided these tumors into three types: the insular type, trabecular type, and strumal carcinoid type. We report herein a case of insular carcinoid tumor arising from a mature cystic teratoma, which was examined by histological and immunohistochemical methods.

Case report

A 52 year old Turkish woman was admitted to Ibn-i Sina Hospital because of an abdominal mass which she had noticed years ago. Physical examination revealed a palpable mass in the
pelvic region. Serum tests, plain abdominal X-ray film revealed no abnormality. Ultrasonography showed a cystic lesion in the right ovary with a focal small solid area corresponding to an ovarian dermoid cyst. The tumor was extirpated and no other abnormalities were found. The patient is now alive and healthy without postoperative therapy and shows no evidence of distant metastasis.

Pathological findings

Macroscopically the tumor measured 13x9x6cm and was multilobulated. At the cut surface, the tumor had a greasy content composed of keratin, sebum and hairs and showed a focal solid area. Many sections, especially from the solid area, were taken and stained routinely with H-E. Special stains such as PAS and Grimelius were also applied. Macroscopically, the tumor was a typical dermoid cyst composed of skin and appendages, respiratory epithelium and connective tissue (Figure 1a). A small, slightly irregular lesion measured 9mm in the largest diameter was found incidentally. This focus had an appearance similar to that of carcinoid tumors elsewhere; solid nests of small, round cells (Figure 1b). There was an abundant fibrous stroma. The tumor cells had scant, slightly eosinophilic cytoplasm and round nucleus with finely dispersed chromatin. No mitotic figures were present. Grimelius stain revealed the argyrophilia in the cytoplasm of the tumor cells.

Immunohistochemically Chromogranin A, Synaptophysin, NSE, PAP and Substance-P markers have been studied. The tumor showed positivity with all of the markers with varying profile of staining. NSE, Chromogranin A and Synaptophysin showed a diffuse positivity while PAP and Substance-P were focally positive.

Discussion

Several authors have reported that cystic teratomas constitute 15 to 20 % of all ovarian tumors (6). Although dermoid cysts of the ovary are almost always benign tumors, primary malignancy arising in these cysts rarely encountered, about 1.5% (6), despite the presence of embryonic structures in these neoplasms. Primary ovarian carcinoid arising in a cystic teratoma is an uncommon neoplasm but its probably more frequent than it has been reported to be. Our case has an importance from that point of view. In this case the patient did not have any symptoms that would be related to carcinoid syndrome while all the other reported cases in the literature (6-9) up to date have presented with one or more of the characteristic symptoms related to carcinoid syndrome. The tumor has been detected incidentally in our case. The tumor showed immunoreactivity for Chromogranin A, Synaptophysin, NSE, PAP and Substance-P, a common finding for all the other classical carcinoid tumors. As this is a malignancy, it would give rise to a poorer prognosis than a mature cystic teratoma.

This experience showed us to give more importance while taking sections from the solid parts of a dermoid cyst to increase the data about primary ovarian carcinoids arising in a mature cystic teratoma and make a clear consideration about its prognosis.

Figure 1a: Low power view of the dermoid cyst with skin and appendages (H&Ex100)

Figure 1b: Solid nests of small, round cells in the carcinoid tumor focus (H&Ex250).
REFERENCES


