Case Report

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Giant Cell Tumor of the Ovary: A Rare Entity

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Abstract

Giant cell tumor (GCT) of the ovary is a rare condition, found almost invariably in the context of a mucinous tumor and presenting a microscopic picture indistinguishable from GCT of bone. Here we describe a case arising from mature cystic teratoma of ovary. An immunohistochemical study was performed using a panel of antibodies to epithelial, mesenchymal and leukocyte antigens. CD68 and vimentin were positive. Along with morphological presence of giant cell and immunohistochemistry findings, Giant cell tumor of ovary was diagnosed arising from mature cystic teratoma of ovary.

Keywords: Giant Cell tumor; Ovary.

Introduction

Giant cell tumor (GCT) of bone is a well-defined neoplasia with a peculiar microscopic picture consisting of round or spindle-shaped mononucleated stromal cells admixed with multinucleated giant cells. Extraosseous GCTs have been reported especially in soft tissue[1] while they are relatively rare in individual organs.[2] Giant cell tumor (GCT) of the ovary is a rare condition, found almost invariably in the context of a mucinous tumor and presenting a microscopic picture indistinguishable from GCT of bone. Here we report a case of Giant cell tumor arising from mature cystic teratoma of ovary.

Case Report

A 65-year-P_7 L_7 presented to Gynae OPD with the complaint of swelling of abdomen since 3 months. She had attained her menopause 20 years back. Her bladder and bowel habits were normal. She had no other significant medical and surgical history. On per abdominal examination, there was a mass of (16 × 17) cm diameter with variegated consistency and side to side mobility. On per speculum examination, cervix and vagina was healthy. Pap smear was taken. On per vaginal examination, similar mass was felt different from uterus, uterus was atrophied. The mass was mobile from side to side. On ultrasonography, it was diagnosed as a case of mature cystic teratoma. Complete blood count, Kidney Function Test, Liver Function Test, ECG were within normal limits. Tumor markers AFP, CEA2 and OV125 g were within normal limit. Staging laparotomy was planned. On laporotomy, ovarian tumor with extraperitoneal extension

and bowel adhesion was seen. Bilateral ureters were traced up to bladder, tumor was separated from bowels and tumor mass was removed. Total abdominal hysterectomy was performed with contralateral side salpingo-oophorectomy. Infracolic omentectomy and retroperitoneal lymphadenectomy was performed. All the samples were sent for histopathological study.

Gross specimen: Outer surface is grey white to dark brown in color, irregular shape with attached fibrofatty tissue. Innerside shows presence of hair, gummous material, areas of necrosis and hemorrhage. A solid nodule seen which on cut section is grey white and homogenous and another separate nodule on cut section is greyish white to blackish colored areas.

Histopathology report: Sections studied from main ovarian mass show features consistent with ruptured mature cystic teratoma with foreign body granulomatous reaction. Also seen are areas of giant cell tumor of ovary. These areas are arranged in sheets with interspersed numerous giant cell. The tumor shows monomorphous cells with abundant cytoplasm, bland nucleus and inconspicuous nucleoli. There is presence of numerous atypical mitoses (6–10/hpf). Also seen within giant cell tumor are areas of non-specific inflammation with hemorrhage and necrosis. Ovarian capsule is not infiltrated by tumor. Fallopian tubes and omental bits are free of tumor. Lymph nodes are free from Tumor metastasis.

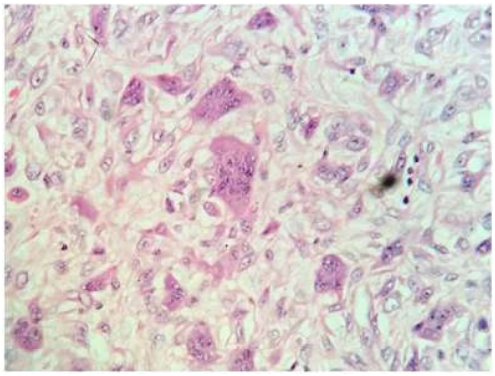

Fig. 1: GCT 40x H&E.

Immunohistochemistry findings.

CD68– positive

Vimentin diffusely positive in stromal cells and giant cells.

LCA-negative

CK-negative

CD34-Negative

S100-Negative

GFAP-Negative

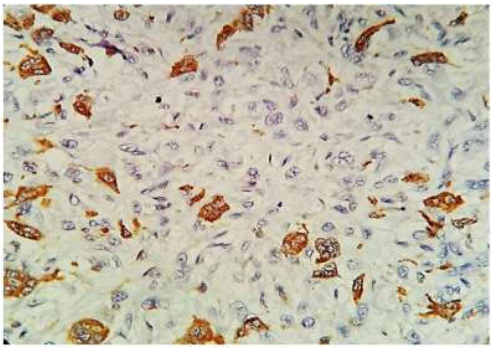

Fig. 2: CD68- positive in giant cells.

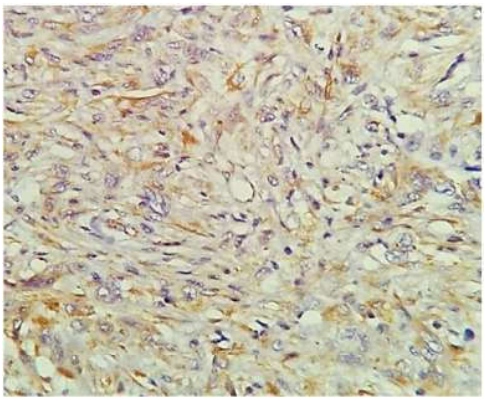

Fig. 3: Vimentin-diffuse positive in stromal cells.

In view of morphological and immunohistochemistry findings, possibility of a Giant cell tumor arising in mature cystic teratoma of ovary is considered. The patient is on follow up since two and a half years without any recurrence.

Discussion

GCT with its typical biphasic histologic feature including mononuclear cells and osteoclastic cells may be seen in different localizations and described under a variety of names such as giant cell tumor of bone, giant cell tumor of soft tissue, reparative granuloma, giant cell tumor of tendon sheath (local and diffuse), and giant cell tumor in visceral organs. GCT arising in visceral organs is uncommon and it is extremely rare in ovary. The terminology and histogenesis of the GCT in visceral organs is still unclear and somewhat controversial. Most of the tumor described in literature they

arise from mucinous cyst adenoma. Here in our case the tumor arised from mature teratoma of ovary. In immunohistochemistry, this Tumor was positive for vimentin and CD68. Franco V *et al*.[3] in his study also found mononuclear and giant tumor cells were positive for vimentin and CD68. The prognosis of pure 'de novo' GCT in visceral organs is similar to their bone counterparts and aggressive behavior is very rare, thus total excision is an adequate treatment choice. GCT is expected to be seen 'de novo' in visceral organs similar to other mesenchymal tumors located in organs other than bone and soft tissue. However, simultaneous presence of epithelial tumor whether benign or malignant is still a subject of controversy causing a diagnostic challenge. A common carcinogen affecting both epithelial and stromal cells may be a possible explanation, but in our case it was associated with benign germ cell tumor of ovary.

Conclusion

Presence of Giant cell tumor of ovary does not usually worsen the prognosis. Treatment should be focused on primary tumor from where it is originated, and of course follow-up is required for any recurrence of giant cell tumor.

Conflict of Interest: None

Financial Disclosure: None

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