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Squamous Cell Carcinoma Arising from Mature Cystic Teratoma of Ovary

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Abstract

Squamous cell carcinoma of the ovary is a rare condition and usually arises in mature cystic teratoma (MCT) or dermoid cyst of the ovary. 0.17%-0.2% of mature cystic teratoma of the ovary (MCTO) undergo malignant transformation of which 80% are squamous cell carcinoma (SCC) transformation in MCTO. A case of SCC arising in a dermoid cyst of the ovary is being presented here. A 65-year-old post-menopausal lady presented with the complaints of pain and lump in the lower abdomen since 5 months. According to examination made on women and pelvic scanning, a 15 cm complex mass was found in the left adenexa of the patient. Final histopathology was reported as squamous cell carcinoma of left ovary arising from dermoid cyst. The prognosis of the malignant transformation of MCT depends on surgery stage; however it is extremely poor. The patient should receive chemotherapy regardless of stage.

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Introduction

MCT is the most common germ cell tumor of the ovary. Mature cyctic teratoma (MCT; also called dermoid cyst) account for about 30-45% of all ovarian neoplasm and around 60% of all benign tumors arising in the ovary[1] with a 0.17%-14% reported incidence of malignant transformation.[2,3] MCT diagnosed as bilateral is roughly 9-16% .MCT is most commonly seen in postmenopausal women.[4] There are no definitive clinical features, tumor markers are not often raised and imaging methods are many times not helpful. The mechanism of malignant transformation has not been completely understood. It is often challenging to diagnose ovarian squamous cell carcinoma arising in a teratoma preoperatively due to its rarity, vague symptoms and aggressive course. Hence most of the cases are diagnosed postoperatively.[5] Tumors confined to ovary usually have a better prognosis and patient with stage III and IV disease rarely survive 5 years.[6]

Case Summary

A 65-year-old postmenopausal lady had complaints of discomfort and lump in lower abdomen for 10 years. There was no history of pain, anorexia but she gave history of loss of weight. Her bowel and bladder habits were normal. There was no significant clinical or family history. Her per abdominal examination revealed a large firm to hard, fixed, tender mass, occupying almost whole of the abdomen. Her pelvic examination revealed cervix atrophied, uterus could not be delineated due to large mass. Routine and specific investigations were carried

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out. An ultrasonogram of whole abdomen suggested the possibility of dermoid cyst measuring about 21cmx15cm of the left ovary. MRI of abdomen reported a large complex multicystic abdominopelvic mass with fat fluid levels. A large solid component along left side of lesion was seen extending in right iliac fossa. Tumor markers like CA125 was found 57U/ml and serum β-HCG was normal. The patient underwent transabdominal hysterectomy with bilateral salpingo-oophorectomy under general anesthesia. In par operative period, mild ascitic fluid was observed, which was clear. A large mass about 12 cm × 10 cm × 7 cm was identified in the left ovary. The surface was uneven. Cut section showed partly solid partly cystic space containing hair and cheesy materials (Fig. 1).

Fig. 1: Surgical removal of the uterus, ovaries, fallopian tubes and cut section showed partly solid and partly cystic space containing hair and cheesy materials.

Uterus was atrophied but both fallopian tubes and right ovary were found normal. Microscopic findings revealed sections from the submitted specimen show a cyst wall composed of fibro-collagenous s glands tissue, skin, adnexal structures. The wall is partially lined by stratified squamous epithelium. Multiple foci shows invasion by atypical squamous cells arranged in nests and cords. Large areas of coagulative necrosis are seen (Fig. 2). Both fallopian tubes, uterus, cervix were unremarkable. Peritoneal fluid was negative for malignant cells. For management, the patient was assigned to squamous cell carcinoma of the ovary arising in a MCT surgical stage IA. Her postoperative period was uneventful. In view of poor prognosis, adjuvant chemotherapy was started.

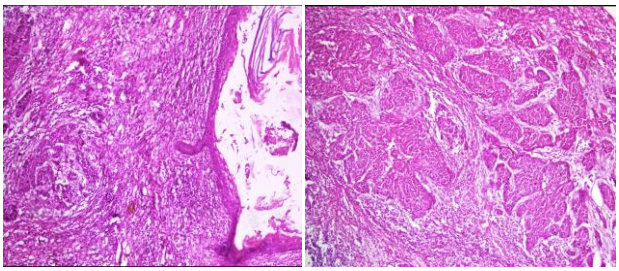

Fig. 2: Histopathological examination revealed an invasive squamous cell carcinoma arising from preexisting MCT (teratoma with somatic type malignancy)

Discussion

MCT also called dermoid cysts are the most common begin germ cell tumor of the ovary. The incidence of malignant ovarian squamous cell carcinoma arising in MCT is rare (up to 2%).[7] It is mostly observed in postmenopausal women with an average age of 58.2 years as compared to 37.5 years in MCT.[8] Some cases of malignant transformation of MCT have been reported in younger patients.[9-11] Preoperative detection of malignant transformation of MCT is difficult and challenging due to non specific tumor and imaging findings.[12] The patients are usually asymptomatic; they may complain heaviness or mass in lower abdomen, similar to this case. Sometime mass may be discovered accidentally during gynecological exam.[13] Advance cases may develop anorexia, weight loss. A variety of

symptoms may be presented secondary to the invasion of nearby organs.[14]

Kikkawa *et al.*[13] mentioned tumor size as the major factor for ruling out malignancy arising from MCT. They reported an average size of 152.3 mm in SCC arising in MCT in comparison to MCT with an average size of 48.2 mm; and the cut off size of between these was 99 mm. Maximal diameter of the mass was 10cm (100 mm) in the present study. Development of malignancy in MCT is usually predicted by factors like old age, large tumor size, level of serum tumor markers (SCC antigen, CA125, CA19-9 and CEA)[15] and larger solid component in MCT. If tumor spreads beyond the ovary, SCC arising from MCT has poor prognosis.[16]

A 5-year survival rate is found in 95% of cases if tumors are limited to the ovary.[17] According to Tseng et al.18, 5-year survival rate is 48.4% among overall stages of diseases, whereas individual stages had the 5-year survival rates of 75.7%, 33.8%, 20.6% and 0% for stages I, II, III and IV, respectively. The appropriate treatment of choice for malignant ovarian tumor arising in MCT is complete surgical excision. It is justifiable to perform unilateral oophorectomy, if the patient is nulliparous or young woman who wants to preserve fertility, especially in stage IA disease; however, the choice of treatment in the postmenopausal women would be total abdominal hysterectomy with bilateral oophorectomy.[18] Hackethal *et al.*[4] found that malignant SCC arising in MCT in patients above 50 years old have a high concentration of CA 125 and tumor size of more than 10 cm. They also observed a better survival rate in stage IA disease.

Conclusion

Our case report suggests that a suspicion of malignancy arising from MCT should be raised if the patient is elderly, the tumor size is huge and the tumor has larger solid component. It is very essential for gynecology oncologist to be aware of this condition & be equipped to deal with it. This case report is being presented with proper inform consent given by the patient and solely for medical education purposes.

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