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CASE REPORT

Squamous Cell Carcinoma in Dermoid Cyst

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ABSTRACT

Mature cystic teratoma or dermoid cyst constitutes about 10 to 20% of all ovarian tumors in the reproductive age group. Malignant transformation is seen in these tumors in about 1 to 2%. Squamous cell carcinoma (SCC) constitutes about 75 to 85% of malignant transformation. Imaging characters and serum tumor markers are two important modalities to differentiate benign and malignant lesions. We are presenting a rare case of SCC arising from mature teratoma. The aim of this presentation is to stress on the significance of preoperative risk assessment of SCC in mature cystic teratoma in postmenopausal age group for optimal treatment.

Keywords: Dermoid cyst, Squamous cell carcinoma and malignancy.

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INTRODUCTION

Mature cystic teratoma or dermoid cyst constitutes about 10 to 20% of all ovarian tumors in the reproductive age group. Malignant transformation is seen in these tumors in about 1 to 2%.[1] Squamous cell carcinoma (SCC) constitutes about 75 to 85% of malignant transformation.[2] Other tumors include adenocarcinoma, Paget's disease, transitional cell carcinoma, basal cell carcinoma, carcinoid tumors and sarcoma. Among all these types of malignant transformation, SCC has better prognosis.

We are presenting a rare case of SCC arising from mature teratoma. The aim of this presentation is to stress on the significance of preoperative risk assessment of SCC in mature cystic teratoma in postmenopausal age group for optimal treatment.

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CASE REPORT

A 45-year-old unmarried postmenopausal lady presented with history of pain abdomen and bowel disturbances from 4 months. Patient was apparently normal 4 months back. She gives history of mass per abdomen noticed from past 4 months and mass increased to reach the present size. She gives history of weight loss around 5 kg from past 4 months. She attained menopause 1 year back. On examination patient was pale, vitals were stable. on abdominal examination, a mass of around 20 weeks size was present in the lower abdomen, mobile, firm in consistency, smooth surface and irregular margins. Bimanual examination was not done as the patient was unmarried. On per rectal examination fullness present in the pouch of Douglass, an irregular firm mass of around 10 × 9 cm present anteriorly.

On ultrasonography a cystic lesion of around 90 × 97 × 122 mm was present in the left adnexa, volume of around 438 cc with solid and hyperechoic contents within the cyst, suggestive of dermoid cyst. Computerized tomography (CT) report showed a large mixed attenuating space occupying lesion noted in pouch of Douglas with minimal ascites. The lesion was measuring 115 × 93 mm with mixed echo pattern suggestive of dermoid cyst. There was no evidence of pelvic lymphadenopathy. Tumor markers CA 125 was normal and CEA was borderline increased. Lactate dehydrogenase (LDH) and alfafeto-protein (AFP) were normal.

Chest X-ray was normal. Ileocolonoscopy was normal. Upper GI endoscopy showed antral erosion. Oncology opinion was taken and exploratory laparotomy was planned and cyst was adherent to surrounding structures, cyst was removed *in toto* and sent for histopathology, frozen section report showed SCC in mature cystic teratoma. Debulking surgery and pelvic lymphadenectomy was done.

Macroscopic examination showed gray white cystic mass of around 10 × 9 × 8 cm external surface showed multiple vessels and inner part showed multiple gray white areas. On microscopy showed cut section showed cyst wall lined by keratinized squamous epithelium. The cyst contains tiny focus of neural tissue, hair

follicle and abortive glomerulus. Multiple sections from gray white areas showed malignant squamous cells, increased nucleocytoplasmic ratio, presence of prominent nucleoli and atypical mitosis. There was no evidence of keratin pearl. Lymphatic invasion was present. Final report moderately differentiated SCC (grade 3) arising from mature cystic teratoma (Figs 1 and 2) Later patient was referred to oncologist and was given six cycles of radiotherapy.

DISCUSSION

Malignant transformation of mature cystic teratoma is less than 3%. Preoperative risk assessment for malignancy is extremely difficult but very important for treatment planning.[3] Risk factors for malignant transformation include age more than 45 years, greater diameter more than 10 cm, rapid growth, low resistance intratumoral flow, imaging characters and serum tumor markers.[2]

Imaging characters and serum tumor markers are two important modalities to differentiate benign and malignant lesions. Ultrasound characters include solid areas, thick septations, areas of necrosis and hemorrhage and low resistance flow on Doppler. Computerized tomography characters include adnexal mass with fat and calcification with soft tissue component with and areas of invasion through teratoma.[3] Magnetic resonance imaging (MRI) features include solid component with contrast enhancement, transseptal and transtumoral extension, evidence of adhesion to surrounding structures and areas of necrosis and hemorrhage. Other MRI features which suggests invasion include large tumors, presence of solid friable material within cystic teratoma, penetration into the septum and capsule and features of local invasion.[4] Squamous cell carcinoma antigen and CEA antigen can be used as tumor markers in the assessment of malignancy. Among these two tumor markers SCC antigen has better correlation.[3,5,6]

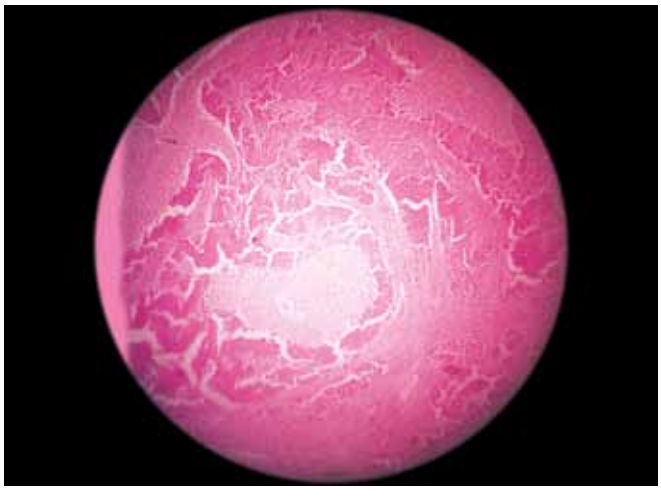

Fig. 1: Histopathology of SCC in dermoid

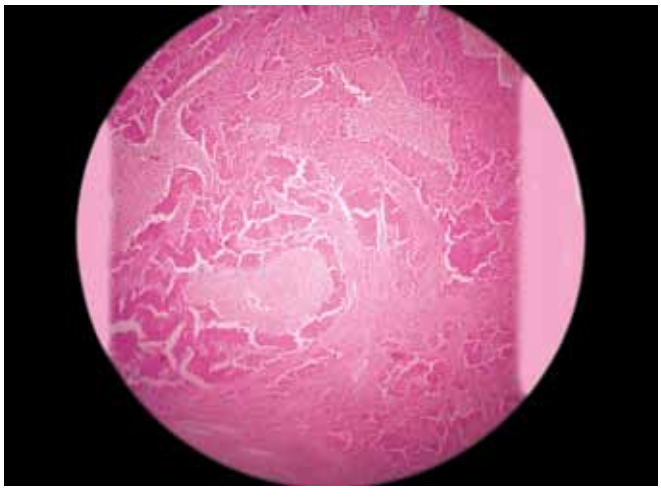

Fig. 2: Histopathological feature of SCC in dermoid

Squamous cell carcinoma arises from ectodermal component of dermoid cyst. There are two theories for origin of SCC, i.e. from epidermal and respiratory tract.[7] Montegomory protuberance at the junction between teratoma and normal ovarian tissue is the area of maximum cellular activity. Usually malignancies arise from this area. Even during histopathological examination this area has to be clearly examined to rule out malignancy.[8] Squamous cell carcinoma arising in a dermoid carries poor prognosis with 5 years survival rate of 15 to 30%. Potential predictors of bad prognosis include rupture or spillage, tumor grade, vascular involvement, infiltration of surrounding structures.[2]

There is no proven treatment modality for this condition because of rarity of the condition and incidental nature of diagnosis. Surgical management includes total abdominal hysterectomy and bilateral salpingo-oophorectomy and infracolic omentectomy followed by single or combination chemotherapy or radiotherapy or both.[9]

The aim of this presentation is to stress on the importance of preoperative risk assessment for malignant transformation before taking a dermoid cyst for surgery in postmenopausal age group.

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