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Case Report

Mature Cystic Teratoma harbouring Squamous Cell Carcinoma – An unusual case report

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Abstract: Most common ovarian germ cell tumors are mature cystic teratomas (MCTs), comprising 10 to 25 percent of all ovarian neoplasms. MCTs are usually benign in nature but have the potential of undergoing malignant transformation, typically in postmenopausal women, with an incidence of 0.17 to 3 percent. The most common malignant tumor arising in MCT is a squamous cell carcinoma. We present an unusual clinical entity in a 56 year old woman of a squamous cell carcinoma arising within a mature cystic teratoma**.**

Keywords: Mature Cystic Teratoma, Squamous Cell Carcinoma, Dermoid Cyst.

INTRODUCTION:

Mature cystic teratoma (MCT) is the most common germ cell tumor of the ovary comprising of 10 to 20 percent of all ovarian tumors. MCTs are usually unilateral but they can be bilateral in 9 to 16 percent cases. MCTs are commonly seen in the fifth to sixth decade of life and behave in a benign fashion. However, rare cases of malignant transformation are reported in 1 to 2 percent of MCTs.[1,2] The most common malignant transformation when it rarely occurs is squamous cell carcinoma (SCC) which comprises 70 to 80 percent of the cases followed by adenocarcinoma, melanoma, carcinoid tumors and various soft tissue sarcomas have been reported [3-6]. The prognosis of these malignant transformations depends on the surgical stage but is usually extremely poor. We present a case of squamous cell carcinoma arising in a mature cystic teratoma in a 56 year old lady along with a review of the literature.

CASE REPORT

This 56-year-old woman presented with a one-month history of progressive abdominal discomfort and pain. Transabdominal and transvaginal ultrasound revealed a 15 x 10 cm heterogenous left adnexal mass . Computed tomography (CT) of the abdomen and pelvis showed a left adnexal mass measuring 15 x 9 x 5 cm. Serum levels of CA-125 were normal. There was no ascitis. The patient underwent total abdominal hysterectomy with bilateral salpingo-oophorectomy, omentectomy and pelvic lymph node dissection. Grossly we received a smooth lobulated partly cystic oval left ovarian mass measuring 17.5x10.5x6.6 cm (Figure 1). Cut surface showed a biloculated cyst containing dirty brown material and hair with adjacent solid areas.(Figure 2). Uterus with cervix measured 7.6x4.5x2.4 cm with attached right ovary 1.0x0.8x0.8 cm and right and left fallopian tubes 4 cm and 3.5 cm long respectively. Endomyometrium measured 0.1/1.0 to 1.2cm. Frozen sections revealed a malignant epithelial tumor consistent with squamous cell carcinoma arising in a cystic teratoma. Permanent sections showed features of a mature cystic teratoma composed of keratinized squamous epithelium, hair, pilosebaceous structures, clusters of blood vessels and glands (Figure 3,4,5). Sections from the solid areas showed a moderately differentiated squamous cell carcinoma arising from the surface epithelium (Figure 6). Omentum and the pelvic lymph nodes (0/9) were free of tumor deposits. Ovarian surface was free of tumor and lymphovascular invasion was not identified. A diagnosis of mature cystic teratoma harbouring moderately differentiated Squamous cell carcinoma, left ovary (stage 1A) was reported.

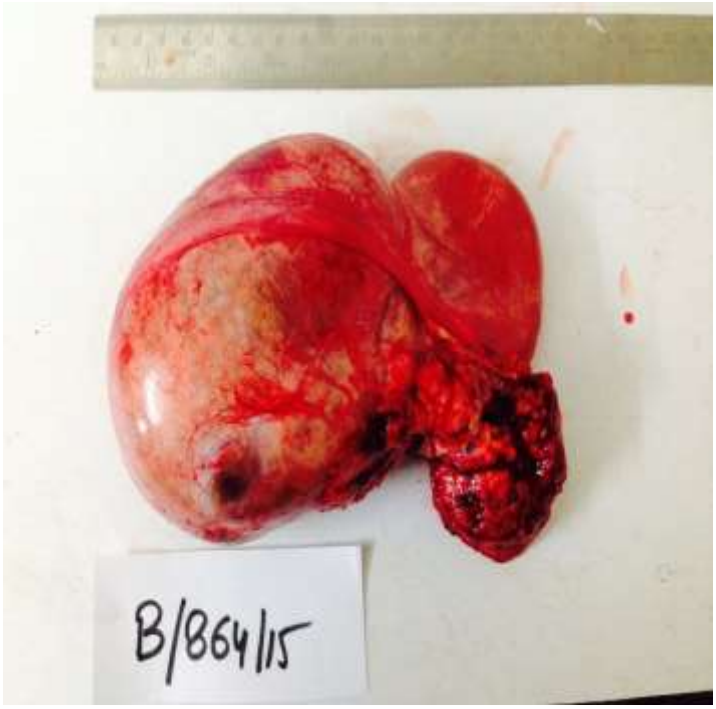

Fig-1: Smooth, lobulated and partly cystic left ovarian mass.

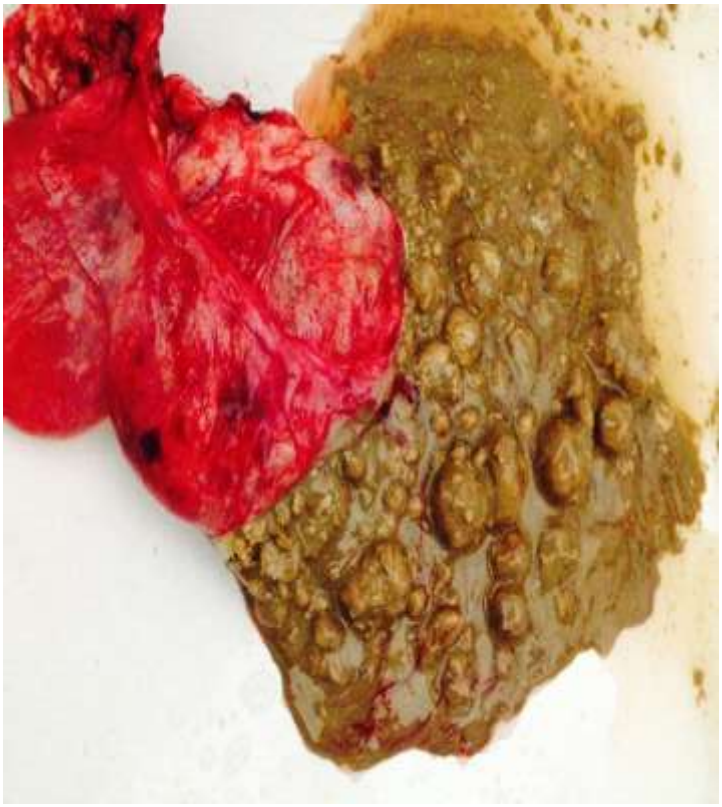

Fig-2: Cut surface shows biloculated cyst containing dirty brown material and adjacent solid areas.

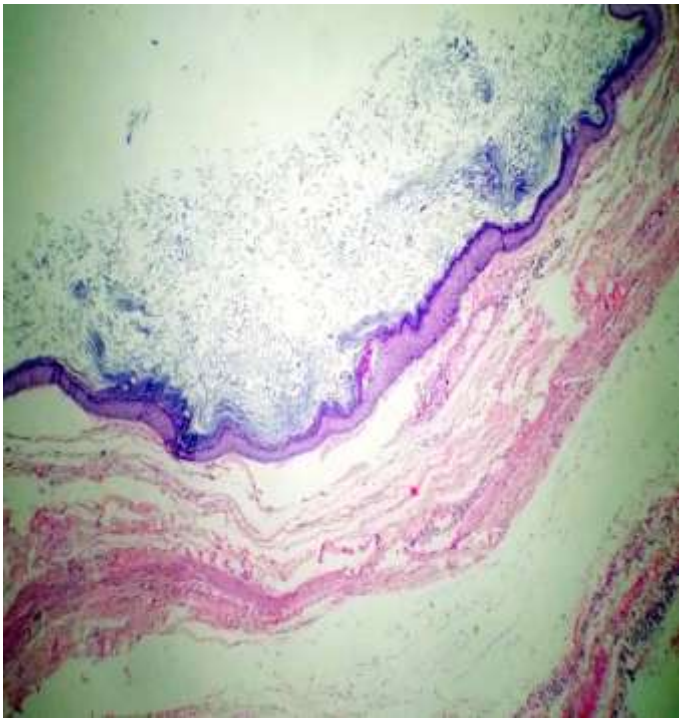

Fig- 3: Photomicrograph showing mature keratinized squamous epithelium. (H & E; 100X).

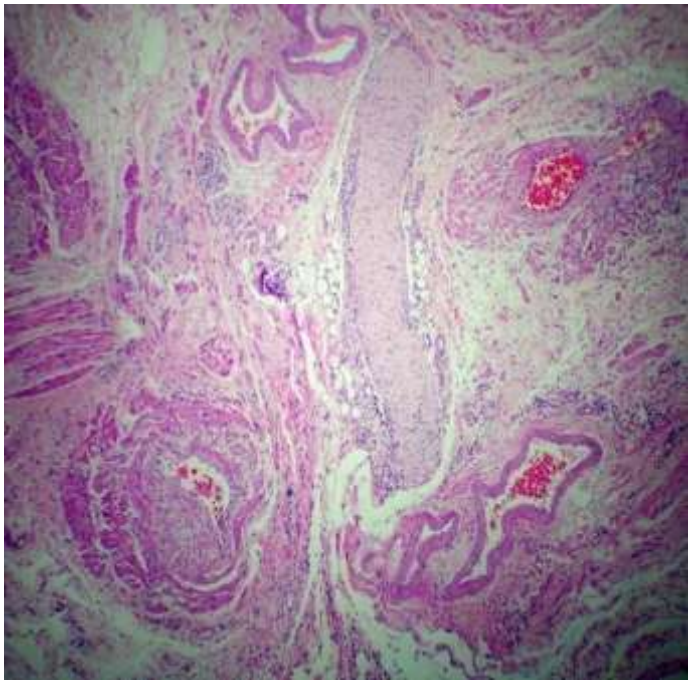

Fig-4: Photomicrograph showing bunch of blood vessels. (H & E; 400X).

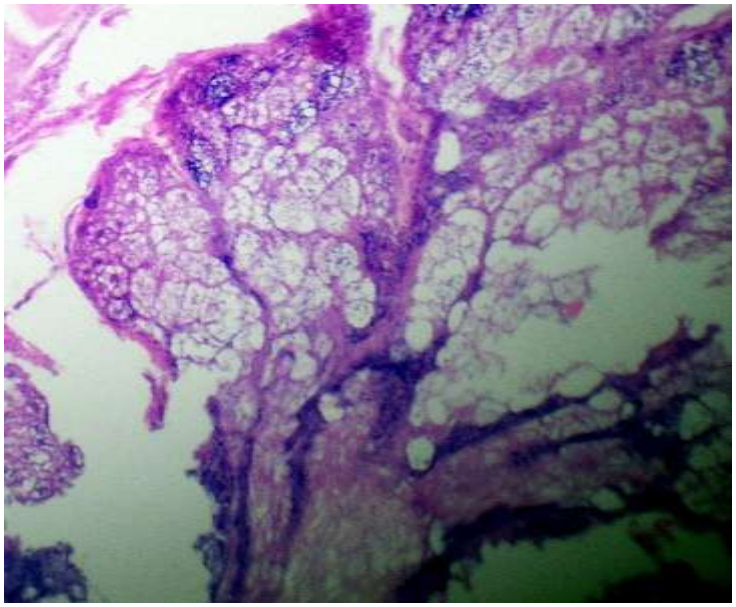

Fig-5: Photomicrograph showing pilosebaceous structure. (H & E; 400 X).

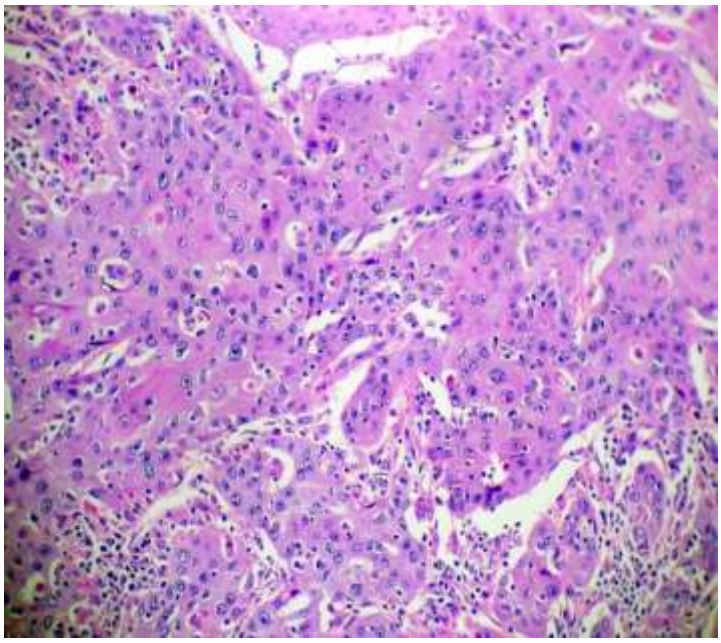

Fig-6 : Photomicrograph showing varying degree of dysplasia & invasive Keratinizing Squamous Cell Carcinoma. (H & E; 400X)

DISCUSSION

Squamous cell carcinoma arising in MCTs is extremely rare and is considered to be one of the serious complications of this benign neoplastic lesion. Although MCTs can be bilateral, malignant change has been reported almost always in one side. SCC arising in MCT most probably develops from the epidermal elements (80%), although an origin from bronchial epithelium has been reported as a possibility [7]. Most frequently the carcinoma arises at or near dermoid protuberance and continues to grow without any clinical manifestations. Eventually it may penetrate the full thickness of the cystic wall and develop direct extension and malignant adhesions to the adjacent organs [8]. In two-third of cases, invasion or metastasis have occurred before the diagnosis [7]. Spread beyond the capsule can produce peritoneal seeding and symptoms such as pain, ascitis and signs of peritoneal irritation, such cases have very poor prognosis. Several authors stress the prognostic importance of an intact capsule when the tumor is confined to the cyst [9]. The diagnosis is frequently made unexpectedly intraoperatively as in the present case or after final pathological examination. Preoperative diagnosis of malignant transformation within a MCT is extremely difficult, poses a great challenge and dilemma regarding a need for surgical staging and adjuvant therapy [10]. Risk factors for malignancy in MCTs include patient

age, tumor size, imaging characteristics and serum tumor markers. It has been observed that compared to benign MCTs, malignant transformation occurs in relatively older women with a mean age between 45 to 60 years. Frequency of malignant transformation increases with rising age and 19 percent of postmenopausal women with MCTs have a malignant transformation [10, 11] Thus there is a need for thorough search for malignant change in dermoid cyst after the age of 45 years.

CONCLUSION

In conclusion, clinicians should keep this rare type of tumour in mind when faced with a dermoid cyst, especially in older postmenopausal women or in patients with larger cystic teratomas. SCC arising from a mature cystic teratoma is a rare pathologic event and in most instances not diagnosed preoperatively. There are no particular signs or symptoms which are characteristic of malignancy arising in a dermoid cyst. The risk factors for malignancy in mature cystic teratoma include age, tumor size and presence of adhesions. These patients with metastasis have a very poor prognosis.

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