

# Squamous Cell Carcinoma Arising in Background of Mature Cystic Teratoma

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## ABSTRACT

Mature cystic teratoma of ovary is a common benign adnexal tumor in females. Malignant transformation in a mature cystic teratoma of the ovary occurs in only 1 - 2% of cases. Most common malignant transformation is squamous cell carcinoma (70-80% of cases), occurring mostly in postmenopausal women with large sized cysts. Here, we report a case of 46-year lady who presented with pain in lower abdomen. Ultrasound and CT scan revealed complex adnexal mass measuring 16x9 cm. Size and older age of the patients should be regarded as important predictors of malignant transformation in mature cystic teratoma. Adequate sampling followed by histopathological examination has important role in diagnosis of such rare tumor.

**Key Words:** *Malignant transformation. Mature cystic teratoma. Squamous cell carcinoma.*

## INTRODUCTION

Ovarian germ-cell tumors account for 20 - 25% of ovarian neoplasms.<sup>1</sup> Mature cystic teratoma (MCT) is the most common ovarian germ cell tumor (10 - 20% of all ovarian tumors).<sup>2</sup> MCT is generally a benign tumor; but very rarely, malignant transformation can occur in 1 - 2% of cases.<sup>3</sup> The most common malignant transformation is squamous cell carcinoma (SCC) occurring in 70 - 80% of cases. Other malignancies which can occur are adenocarcinomas, melanomas, carcinoid tumors, and different soft tissue sarcomas.<sup>4</sup> Purpose of this case presentation is to incite awareness in clinicians and histopathologists while dealing with dermoid cysts of large sizes in postmenopausal women; also to emphasise the need of histopathology and further management to decrease mortality by taking timely decision for any surgical intervention, chemotherapy or radiotherapy.

## CASE REPORT

A 46-year lady presented with 3 months history of pain in lower abdomen which was initially mild but gradually increased in intensity. There was a non-tender mass palpable in lower abdomen. Her ultrasound abdomen revealed a thick walled complex cystic adnexal mass measuring 16x9 cm in size. CT scan confirmed the findings of ultrasound. Tumor marker CA-125 levels were within normal limits.

A provisional diagnosis of dermoid cyst was made and surgical excision was done. Gross examination of the specimen revealed a mass consisting of three daughter cysts collectively measuring 15x13x10 cm. It contained fibrofatty and thick cheesy material (Figure 1). The cyst wall was thickened at the junction of the daughter cyst.



Figure 1: Gross view of the adnexal mass.

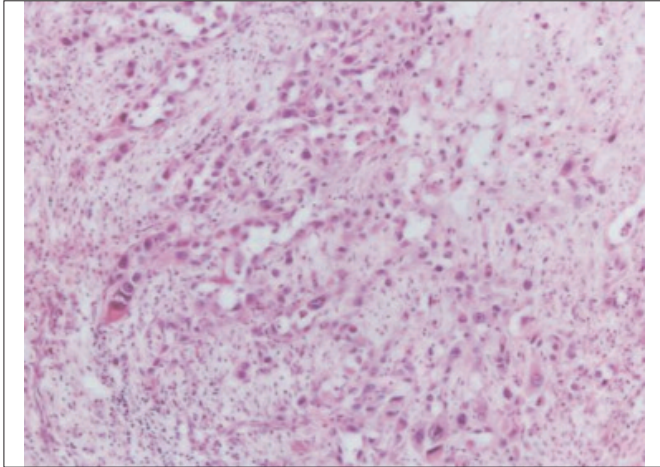
Microscopy revealed derivatives of all three germ cell layers. In the background of these benign components, there were nests and cords of neoplastic squamoid cells (Figure 2). CK5/6 and p63, which are markers for squamous neoplastic cells, were found positive. A final diagnosis of SCC arising in the background of MCT (dermoid cyst) was made. Further surgery was performed and the patient had total abdominal hysterectomy, and bilateral salpingo-oophorectomy. No other involvement by tumor was seen on histopathological examination. She was placed into stage 1A, and was advised to undergo regular follow-up with ultrasound, CT scan and serum CA-125.

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**Figure 2:** Microscopy showing nests of neoplastic squamoid cells in background of benign MCT.

### DISCUSSION

Malignant transformation in MCT of the ovary is a rare complication which occurs in only 1 - 2% of cases, with SCC being the most common type. Preoperative diagnosis of malignant transformation is difficult because there are no specific symptoms and signs to suggest malignancy.<sup>5</sup> The most common symptom is abdominal pain, and abdominal or pelvic mass. Constipation, urinary frequency, and bleeding can occur due to invasion of nearby organs, but the patients usually remain asymptomatic in the initial stages. Fever and weight loss can occur in advanced disease.<sup>6</sup> In this case, the patient presented with pain and mass in abdomen.

Preoperatively, MCT of the ovary is easily diagnosed radiologically due to presence of bony tissues, cartilage, calcification and hairs. However, preoperative diagnosis of malignant transformation is very difficult clinically. In this case, the patient was diagnosed initially as dermoid cyst on radiological investigations. According to Kikkawa *et al.*,<sup>7</sup> larger tumors with diameter of > 9.9 cm and age > 45 years (postmenopausal) are at increased risk of malignant transformation. In this case, the tumor size was 16 cm and age of patient was 46 years.

The prognosis of this tumor is usually very poor as reported in the several previous studies. The prognosis depends heavily on the stage of the disease. Patients with disease confined to the ovary have much better prognosis and their 5-year survival rates approach 95%.<sup>8</sup>

Treatment of an ovarian MCT with malignant transformation is mainly surgical. Conservative unilateral oophorectomy

without further postoperative treatment is carried out for early stage IA disease, in nulliparous women and young females who desire for future fertility. However, in the postmenopausal women, removal of the genital organs is the best choice. Postoperative treatments include single-agent or combination chemotherapy, radiotherapy, or a combination of both. Results of these treatment regimens are quite variable and have not been evaluated in large number. So, the standard adjuvant therapy for SCC arising in a MCT has not been established yet.<sup>9</sup>

SCC arising in ovarian MCT is a rare entity, occurring at a rate of 1 - 2%. Because of the rareness, an extensive sampling followed by histopathological examination has vital role in diagnosis.

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