

# Squamous Cell Carcinoma in a Dermoid Cyst

## Abstract

Squamous cell carcinoma arising in mature cystic teratoma of the ovary is rarely diagnosed preoperatively. They are usually large tumours, occurring in the perimenopausal age group. They often present as an incidental pathological finding. This case has been presented as it is a rare finding in a middle aged woman who was found to have a dermoid cyst during evaluation of an ovarian mass.

**Keywords:** Teratoma; Dermoid cyst; Tubectomy; Hypogastrium; Iliac fossa

## Case Report

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## Introduction

Ovarian dermoid cyst is more common in the younger age group and is detected in 50% of pediatric tumours. A malignant transformation in a dermoid cyst is a rare occurrence. The presentation may not be associated with any specific symptoms or signs except for a pelvic mass on examination. It is important to be aware of such an entity especially while managing dermoid cysts in an older age group.

A 38year old lady residing in Bangalore, belonging to middle socio-economic class, presented with mass per abdomen since 3 months and continuous dull pain in the lower abdomen for the past 5 days. She had no menstrual irregularities, bowel or bladder disturbances. She did not have any medical co-morbidity. There was no significant family history of cancers or tumors. She has had four normal deliveries and the last child birth was a cesarean delivery with tubectomy. On examination, her general condition was good. Abdominal examination revealed a firm, midline mass with irregular borders arising from pelvis occupying the hypogastrium & iliac fossa extending upto the umbilicus. No tenderness could be elicited. Vagina and Cervix were healthy. Bimanual examination revealed a large irregular non-tender mass about 24 week gravid uterus size. The uterus could not be separately made out. Mobility of mass was not transmitted to cervix. There was fullness in the anterior & left fornices, right fornix free. No nodularity was felt on rectal examination. USG: Uterus normal in size and echotexture. Both ovaries were not seen separately. A complex mass of 13.2x9.5cm noted in the left side of the pelvis with fat fluid level, suggestive of dermoid cyst. No evidence of lymphadenopathy.

## Procedure

Laparotomy and cystectomy was done. Frozen section revealed invasive carcinoma in a dermoid cyst. Hence TAH with BSO and pelvic lymphadenectomy with omental biopsy was done. HPE – Invasive squamous cell carcinoma arising from mature cystic teratoma of left ovary – Stage II 2B.

## Discussion

The purpose of this case report was to create awareness among physicians while dealing with dermoid cysts of large sizes in older patients. Most dermoid cysts occur in the younger age group and a malignant transformation in them is rare, the incidence being 1-2% of cases [1]. The most common secondary malignant transformation is that of squamous-cell carcinoma which accounts for 80% followed by 5% of adenocarcinoma. Historically, these tumors have been diagnosed postoperatively; as preoperative features predicting the diagnosis are not well described [2]. They often present as an incidental pathological finding. An elevated preoperative serum level of squamous cell carcinoma antigen may indicate the need for a rapid pathologic examination of the tumor to look for malignant elements and may influence the surgical regimen [3]. Measurement of serum tumor markers and imaging are two important elements in differentiating malignant from benign ovarian tumors [4]. Higher CA-125 levels have been shown to be associated with adverse outcome. Equally, an elevated CEA level has been reported as more useful than CA-125 and CA19-9 in the diagnosis of malignant transformation of mature cystic teratoma [5]. However, our patient had a normal CA-125, in keeping with a recent meta-analysis which proved that serum markers are raised in only 70% of such patients [6].

A systematic review of this rare malignant transformation was done on 64 suitable studies provided information on 277 patients. This review showed that squamous-cell carcinoma in mature cystic teratoma was mainly found in women aged more than 50 years, with high concentrations of squamous-cell-carcinoma antigen and cancer antigen CA125, and with tumour size of more than 100 mm in size [6]. Dermoid cysts are relatively easily diagnosed using imaging modalities like CT or MRI. However, fewer reports exist regarding their usefulness in diagnosing malignant transformation. It has been reported that the size of the tumour, penetration of the septum or capsule, invasion of adjacent organs and abundance of solid areas within cysts were features suggestive of malignant transformation within cystic teratomas [7].

Laminin immunohistochemistry is useful in detecting if the basement membrane has been interrupted and thus allow detection of the in situ nature of the tumour. This is important as the prognosis of a squamous cell carcinoma in dermoid cyst depends on the degree of penetration of the tumor [8]. While the prognosis seems highly dependent on surgical stage, it is generally poor when disease has spread beyond the ovary [9]. The overall 5 year survival rate of these patients is 52%. Clinical staging (stage I versus stage II or more), histologic differentiation and the presence of vascular invasion are factors that affect the prognosis of these patients [10]. However adequately staged patients with disease confined to the ovary have a much better prognosis with a 5 year survival rate approaching 95%.

Complete resection together with hysterectomy, bilateral salpingo-oophorectomy and lymphadenectomy for patients with advanced disease, followed by adjuvant chemotherapy with an alkylating drug has been associated with higher survival, radiotherapy was not [6]. There is a lack of consensus in the literature regarding adjuvant treatment. Platinum-based chemotherapy with pelvic radiation may be a reasonable adjuvant therapy for early-stage disease [9]. Follow-up with ultrasound, CT scan and serum CA-125 is required (Figure 1 & 2).



Figure 1



Figure 2: This is the gross appearance of the left tube and ovarian mass at surgery. The solid and cystic mass was 12x12cm from left ovary and was twisted. It was adherent to the right ovary and uterus.

## Conclusion

Squamous cell carcinoma in a dermoid cyst is not very common in this age group. The purpose of this case report was to create awareness among physicians while dealing with dermoid cysts of large sizes in older patients. Complete surgical resection followed by adjuvant chemotherapy gives good results.

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