

# Bilateral Dermoid Cyst of Ovary-A Twist in Tale

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## ABSTRACT

Mature cystic teratomas also known as dermoid cysts constitute 20% of all ovarian neoplasms occurring in the reproductive years. Bilateral mature cystic teratomas account for 10-15% of all bilateral ovarian tumours. Complications which can occur in these benign mature teratomas are torsion and malignant transformation. Here, we report a case of bilateral ovarian mature cystic teratoma with malignant transformation to Squamous Cell Carcinoma (SCC) in a 45-year-old pre-menopausal woman.

**Keywords:** Bilateral ovarian cysts, Ovarian tumours, Squamous cell carcinoma antigen

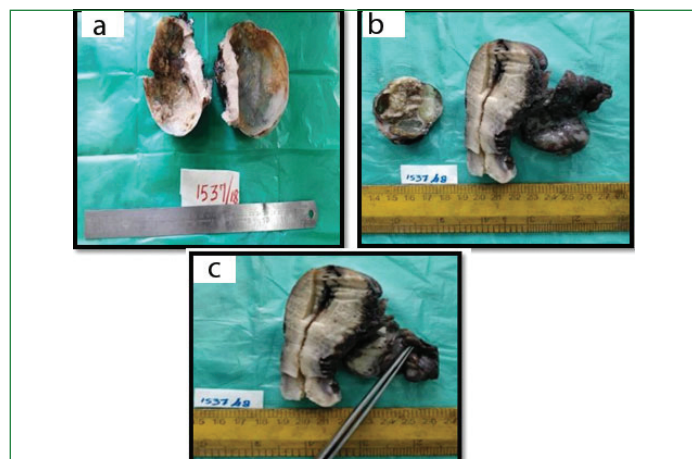
## CASE REPORT

A 45-year-old pre-menopausal lady presented to the Obstetrics and Gynaecology department of our hospital with complaints of diffuse, continuous abdominal pain and fullness of abdomen for one month duration. On clinical examination the patient was found to have an adnexal mass of 16 weeks size. No family history of malignancies or similar complaints were found. Her general physical condition was unremarkable with no significant findings. Radiological investigations revealed bilateral complex adnexal cysts with solid mural components, fatty tissue and areas of calcification in the left side (10 x 9.6 cm) and a multiloculated cyst with fluid and fatty components in the right side (5.5 x 3.7 cm). Serum levels of CA 125, Alpha fetoprotein (AFP), Carcinoembryonic antigen (CEA) and Beta-Human chorionic gonadotropin (HCG) were within normal limits. Subsequently the patient underwent hysterectomy with bilateral salpingo-oophorectomy.

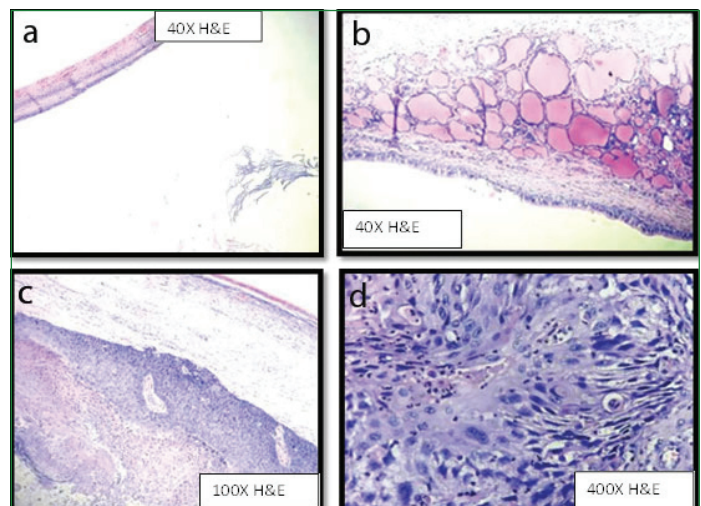
The Department of Pathology at ESIC received uterus, bilateral adnexal masses and tubes. Grossly, left adnexal mass measured 11.5x9.5x7 cm. Cut section showed solid and cystic areas. Solid component measured 8 x 3 cm and was grey white, firm admixed with focal pearly white areas. Cyst was filled with pultaceous material and contained hair [Table/Fig-1a]. Right adnexal mass measured 5 x 4 x 2 cm. Cut section showed solid and cystic areas. Solid component measured 3 x 3 cm and was dark brown. Cyst was filled with pultaceous material [Table/Fig-1b]. Grossly both the tubal walls were thickened with grey white firm areas discontinuous with the

ovarian masses [Table/Fig-1c]. Representative sections were taken from both ovaries and tubes and submitted for routine processing and staining with Haematoxylin and Eosin.

Microscopy of both side adnexal masses revealed a fibro-collagenous cyst wall lined by stratified squamous epithelium exhibiting dysplastic changes [Table/Fig-2a]. The cyst wall showed infiltration by a malignant tumour composed of sheets of pleomorphic squamous epithelial cells with large areas of individual cell keratinisation and extracellular keratinisation with keratin pearl formation. Also, seen at places was cyst wall lined by pseudo-stratified ciliated columnar respiratory epithelium along with thyroid follicles of varying sizes filled with colloid [Table/Fig-2b-d]. Microscopic sections from both the tubes showed the tubal plicae with the tubal wall infiltrated with malignant squamous epithelial cells containing numerous keratin pearls [Table/Fig-3].



**[Table/Fig-1]:** a) Left adnexal solid cystic lesion with cyst wall containing pultaceous material; b) Right adnexal solid cystic lesion with grey brown solid areas and cyst containing cheesy pultaceous material with hair; c) Uterus with cervix and right tube showing wall thickening with firm grey white areas.

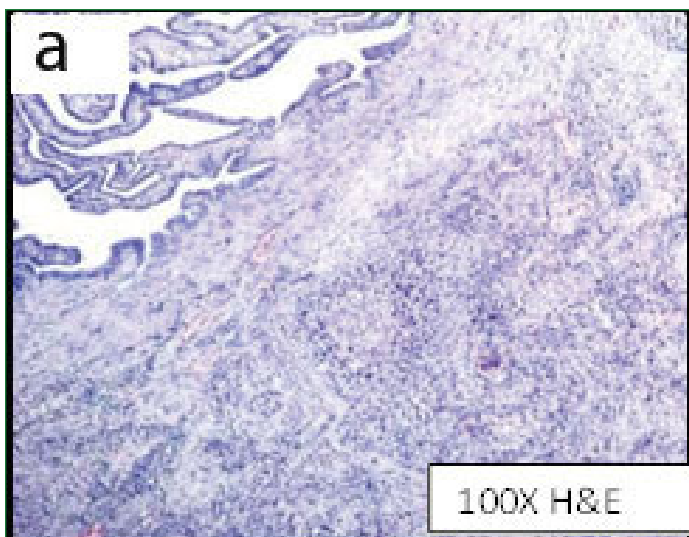


**[Table/Fig-2]:** a) A 40X view of the cyst lined by stratified squamous epithelium with keratin; b) A 40X view of another focus of the cyst wall lined by pseudostratified ciliated columnar respiratory epithelium containing thyroid follicles filled with colloid; c) Low power view 100X of cyst wall showing dysplastic changes in the squamous epithelium; d) High power view 400X of the solid area in right ovary showing pleomorphic malignant squamous epithelial cells with keratinisation (H&E).

On immunohistochemistry, the solid lesions in the ovary and both the tubes were positive for Pan CK, p40 and High Molecular Weight Keratin (HMWK). CA 125 and WT-1 were negative.

## DISCUSSION

Bilateral ovarian teratomas are rare tumours accounting for 10-15% of all bilateral tumours [1]. Complications documented in mature



**[Table/Fig-3]:** Low power view 100X view of tubal lumen with wall infiltrated by squamous cell carcinoma.

cystic teratomas in various studies are torsion, rupture of the cyst, infection and malignant transformation [2].

Malignant transformation of mature cystic teratomas is a very rare complication. Squamous Cell Carcinoma (SCC) of the ovary including malignant transformation of benign dermoid cysts and primary pure SCC account for 1.5%-2.3% of all ovarian tumours [3-5].

Malignant transformation with SCC occurring in a long standing dermoid cyst is attributed to exposure to unknown pelvic carcinogens [3]. Association with Human papilloma virus-high risk types have been established in the study conducted by Chiang A et al., [3]. It was observed in their study, that HPV capsid and HPV 16/18 was detected in 95% of the cases with malignant transformation to SCC [3,6].

Prognosis of these patients is generally poor with a five year survival rate of 15-20%. Chen R et al., have evaluated the various prognostic factors for SCC arising from a dermoid cyst [7]. In their study, they have observed that tumour stage, patients' age, tumour size and SCC antigen levels estimated preoperatively have a significant impact in the prognosis. Size of the tumour is important for prognosis of these tumours as established in the study conducted by Chen R et al., in which they have observed that dermoid cysts with a diameter of >10cm had a higher proportion of malignant transformation [5,7].

Many studies have evaluated the usefulness of serum SCC antigen as a tumour marker which supports the diagnosis which can also be used as a prognostic marker in these cases of malignant transformation to SCC in dermoid cysts. In their study, on 24,040 patients of mature cystic teratoma, with 52 cases of malignant transformation, Chiang A et al., have observed that SCC antigen levels of >2ng/ml was observed in 46.1% of the cases [3]. Primary pure SCC of the ovary is extremely rare which arises from metaplastic changes in the surface epithelium of the ovary [8].

## CONCLUSION(S)

This case is presented here for the rarity of bilateral mature cystic teratoma presenting with a complications of malignant transformation to SCC with metastatic deposits in bilateral tubes. Prognosis of these cases depends on the staging and the size of the tumour. Associated with HPV infection and the usefulness of the SCC antigen in these cases have yet to be established.

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