Case Report

Somatic Neoplasm Arising from Teratoma Ovary with Peritoneal Recurrence

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Mature cystic teratomas are the commonest germ cell tumors of the ovary. Malignant transformation is very rare in teratoma. Peritoneal involvement of this malignancy is even rarer. We are reporting a case of peritoneal involvement of squamous cell carcinoma arising from a mature cystic teratoma.

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Key words **: Teratoma, Squamous cell carcinoma, Peritoneal involvement.**

Ovarian Dermoid cysts or Mature cystic teratomas are the commonest germ cell tumors of the ovary, comprising of about 20% of all ovarian neoplasms[1]. Malignant transformation is a rare complication of mature cystic teratoma, which occurs in about 2% of the cases and is usually observed in postmenopausal patients[2]. Squamous cell carcinoma is the most common neoplasm accounting for 80% of malignant tumours within teratomas[1]. Patients with ovarian Squamous cell carcinoma often have a dismal prognosis and the stage of the disease is an important factor to the prognosis. The 5-year survival rate for all stages is around 48.4%. Prognostic factors include FIGO stage, degree of cytoreduction in surgery, tumor grade, growth patterns, capsular rupture and vascular invasion[3]. We report a case of a woman with peritoneal recurrence of Squamous cell carcinoma arising from ovarian mature cystic teratoma.

Editor's Comment :

- Malignant transformation in mature cystic teratoma is very rare. So, the pathologist should be aware of thoroughly sampling of all specimens of mature cystic teratoma, especially when there are solid areas so as not to miss this diagnosis.

Case Report

A 43-year-old female presented with lower abdominal pain of 2 weeks duration. On Clinical examination a mass measuring 10x10 cm was felt per abdomen. CT Abdomen showed a large heterogeneously enhancing lesion measuring 9.5 x 6.6 x 6 cm with fatty soft tissue component and calcified component. Minimal ascites was noted. A diagnosis of Dermoid cyst Right ovary was suggested.

Total abdominal hysterectomy with bilateral salpingo-oophorectomy and omentectomy was done. Right ovary showed a cyst measuring 12 x 8.5 x 4cm. Cut section showed a uniloculated cyst filled with cheesy material and hair. Also there were multiple grey white granular solid areas (Fig 1a,1b). Microscopy showed a cyst lined by mature squamous epithelium, with wall showing glial tissue and fat. Solid areas showed islands of tumour cells having eosinophilic cytoplasm, pleomorphic vesicular nucleus. Mitosis 5-6/hpf (Fig 1c,1d]. Immunohistochemistry showed CK strong membranous positivity and p63 nuclear positivity in tumour cells (Fig 1e,1f). A diagnosis of Squamous cell carcinoma arising from mature cystic teratoma right ovary was given. Peritoneal wash cytology was negative for malignant cells.

On follow up, 3 months later patient developed massive ascites. Ascitic fluid cytology done showed atypical squamous cells dispersed singly. Also noted tad pole and fibre cells admixed with mixed inflammatory infiltrates in a dirty, necrotic background. Smear was reported as positive for malignant cells from Squamous cell carcinoma (Fig 2). Patient succumbed to death due to metabolic derangements before initiation of chemotherapy.

Discussion

Malignant transformation in mature cystic teratoma is a rare finding which is most frequent in the elderly women. Squamous cell carcinoma is the most common type of malignant transformation in Mature cystic teratoma, consisting up to 80%-90% of cases followed by adenocarcinoma. Clinically, this tumor cannot be readily differentiated from an uncomplicated mature cystic teratoma or other ovarian tumor[4]. Evidence of rapid growth, pain and loss of weight suggest the presence of a malignant tumor. In many cases, the tumor may be an incidental finding[2]. Better prognosis has been reported when the malignant element is a squamous cell carcinoma confined to the ovary and is excised without spillage of the contents. In such cases, the reported 5-year survival is 63%[2]. But our patient inspite of being in Figo Stage I had a dismal prognosis. This is contradictory to the finding of Kim HS, *et al*, who demonstrated that

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disease confined to the ovary as clinical stage I is a clinical prognostic factor improving optimal survival[3]. Vigilant grossing and sampling need to be done as the malignant component of the tumor might be present in only part of the lesion causing difficulty in suspecting the malignancy. Cytological evidence of tumor cells in the ascitic fluid is the gold standard for diagnosing peritoneal carcinomatosis, in comparison with the physiological examination, radiological techniques, and chemical analysis. Malignant effusions are usually rare in squamous cell carcinoma[5]. In our case the patient had recurrence and presented with malignant ascites, which is rare. Primary cytology as well as secondary cytology (after treatment) of ascitic fluid is an important parameter in the diagnosis, staging, therapeutic approach, recurrence and overall survival rate[6]. Only limited data is available on reccurent and metastatic cases, rate of which can be high as a definite treatment protocol is not available due to the low incidence of the cases[7].

Conclusion

Squamous cell carcinoma arising from mature cystic teratoma is therefore a rare, lethal disease that is difficult to diagnose clinically. Extensive sampling has to be done in all cases of teratoma to exclude malignancy. Recurrence and metastasis of Squamous cell carcinoma arising from teratoma ovary can be high as no definite treatment protocol is available. Advances in chemotherapy could result in better prognosis.

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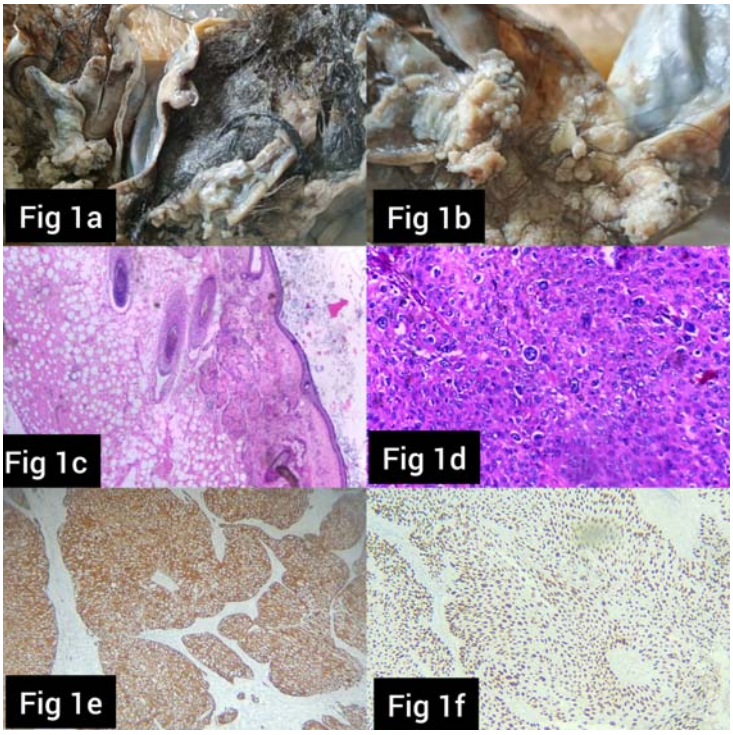

Fig 1a & b — Gross images of the cyst
Fig 1c — Cyst lined by stratified squamous epithelium [H&Ex10]
Fig 1d — Islands of malignant tumor cells [H&Ex40]
Fig 1e — Immunohistochemical staining -CK showing strong membranous positivity [x40]
Fig 1f — p63 showing nuclear positivity in tumor cells [x40]

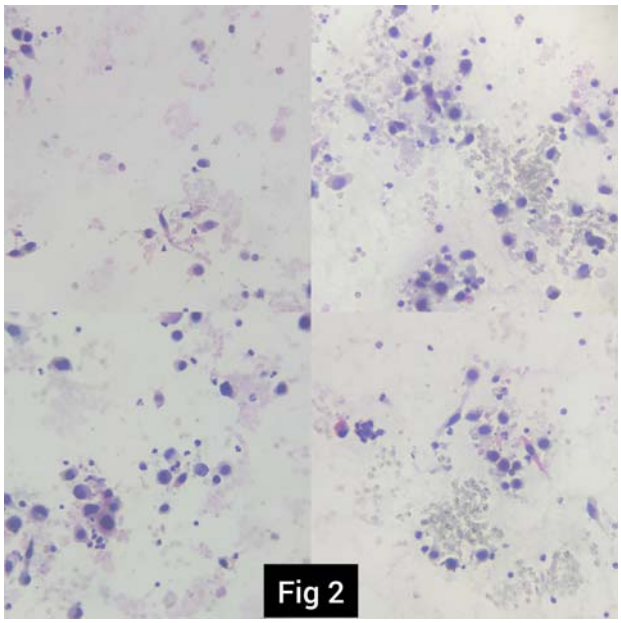

Fig 2 — Ascitic fluid cytology showing atypical squamous cells

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