A Case of Malignant Fibrothecoma of the Ovary

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Abstract

Fibrothecomas are mesenchymal tumors deriving from the ovarian stromal and consisting of theca-like elements and fibrous tissue. They are common, but their malignant counterpart is extraordinarily rare. Classical malignant fibrothecomas are said to show four or more mitotic figures per 10 high power fields. Here, we describe a rare case of malignant ovarian fibrothecoma in a perimenopausal woman who presented with a large pelvic mass and menorrhagia. Preoperative diagnosis was advanced ovarian malignancy. Total abdominal hysterectomy, bilateral salpingo-oophorectomy and partial omentectomy, together with resection of a length of terminal ileum was done. Patient however died 9th postoperative day from complications related to the extensive surgery. Postoperative histology revealed mitotically active intestinal secondary with primary ovarian tumour containing four mitotic figure per 10 high power fields in keeping with malignant fibrothecoma.

Keywords: Fibrothecoma, malignant neoplasm, ovarian tumours, advanced stage

Introduction

Sex cord stromal tumours account for about 6% of all ovarian tumours. They are derived from the coelomic epithelium or the mesenchymal cells of the embryonic gonads[1]. They belong to the oestrogenic group of sex cord tumours with differentiation in fibroblastic or thecal cells and exhibit a morphological spectrum from those composed entirely of fibroblasts and producing collagens (fibromas) to those with more plump spindle cells with lipid droplets (thecomas).

They may be hormonally active and thus responsible for oestrogenic manifestations. When a tumour contains a mixture of these

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cells they are called fibrothecomas which are rare ovarian neoplasms. Malignant fibrothecoma is an extremely rare entity of this tumour.[1]
Classical malignant fibrothecomas tend to show four or more mitotic figures per 10 high power field(PHPF). It occurs mostly in elderly postmenopausal patients.

We report a very rare case of malignant fibrothecoma of the ovary in 51year old perimenopausal woman.

Case Report

OI is a 51-year-old para2 (2 alive) perimenopausal woman with no significant medical history presented to our gynecology outpatient clinic with constipation and abdominal distention and menorrhagia of 2 years duration.

There is no history of fever, vomiting, or localized abdominal pain. General physical and systemic examination was normal.

On examination, she had gross abdominal distention consistent with ascitis. Complete hemogram and routine blood biochemistry of the patient were within normal limits. CA-125 was 100 U/ml. Abdominal and pelvic ultrasound demonstrated a large abdomino-pelvic mass (ovarian?) with predominantly solid areas and occasional cystic low echogenic shadows. Both ovaries could not be clearly delineated sonologically.

The patient underwent exploratory laparotomy in conjunction with the general surgeons. At surgery, a huge solid cystic mass was found with multiple metastatic deposit on the omentum, small bowels, liver surface, and under surface of the diaphragm. There were dense adhesions between the mass and the bowels. Both ovaries could not be delineated from the mass. The uterus was enlarge and contain multiple fibroids. Total abdominal hysterectomy with total removal of the mass was done after adhesiolysis. Partial omentectomy, resection and anastomosis of damaged bowels were done. Patient's postoperative recovery was turbulent. Abdominal distention did not subside despite peritoneal drainage. Entero-cutaneous fistula with evidence of peritonitis were noticed on the 8th postoperative day. Patient was placed on para-enteral nutritional support and broad spectrum antibiotics and to have a re-exploration after work up. However patient's condition deteriorated and died on the 9th postoperative day from overwhelming sepsis. Autopsy could not be done as a result of refusal from the relations and was buried within 2 hours of death.

Method

The surgical specimen was fixed in formalinand sections for histological examination were routinely processed in paraffin wax and stained with haematoxylin and eosin. Reticulin and oil-red O stains were performed on representative sections of the ovarian and small intestinal tumours. A formal mitotic count was carried out on all histological sections of the ovarian and small intestinal neoplasms. This was done by counting the number of mitotic figures in 50 high power fields (HPF) and calculating the average per 10 HPF.

Immuno-histochemistry could not be done because necessary stains and other reagents for this were not available and attempts at getting it done outside the hospital also failed.

Result

Pathological Findings

The surgical specimen consisted of a uterus and cervix with attached ovaries and fallopian tubes. An 18 cm length of small intestine was also received (fig 2). On gross examination, the right ovary was mostly replaced by a solid mass weighing 7kg and measuring 24 ×30 cm. It is composed of yellow gray solid firm mass with focal myxoid change (Fig. 1). The left ovary was grossly unremarkable. The uterus

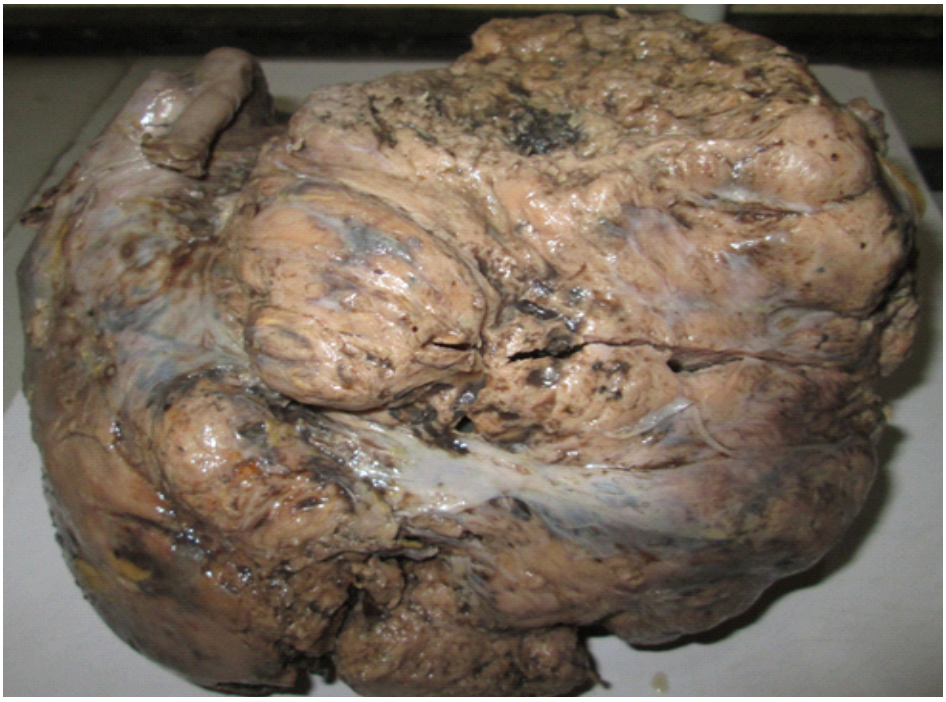

Fig. 1: Showing gross specimen of the malignant fibrothecoma

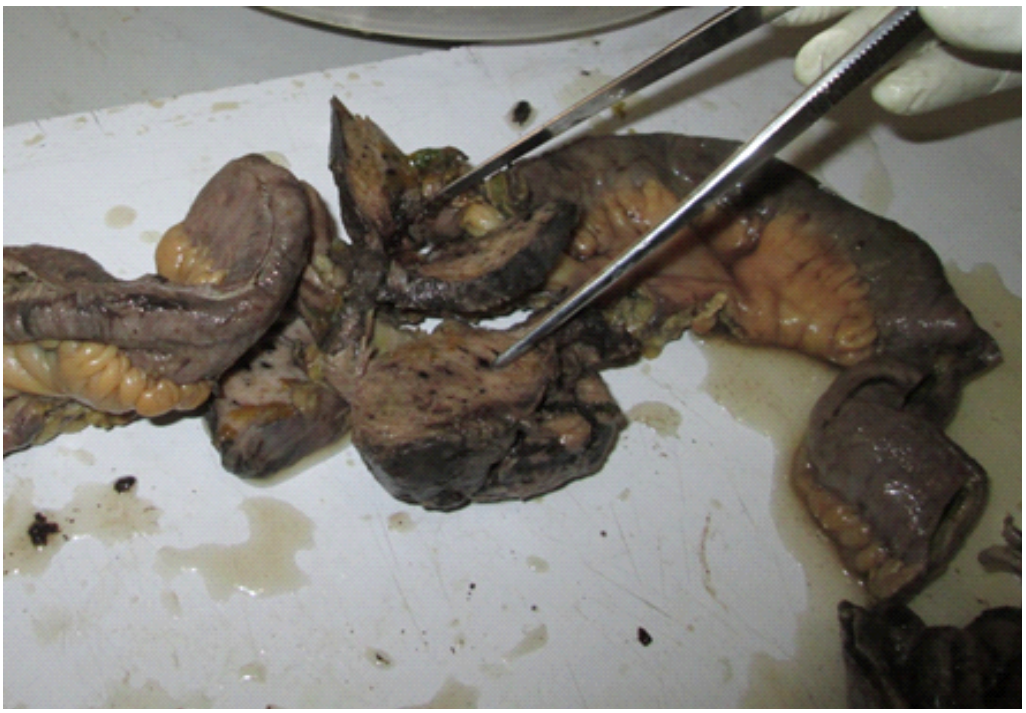

Fig. 2: Showing metastasis to the small intestine

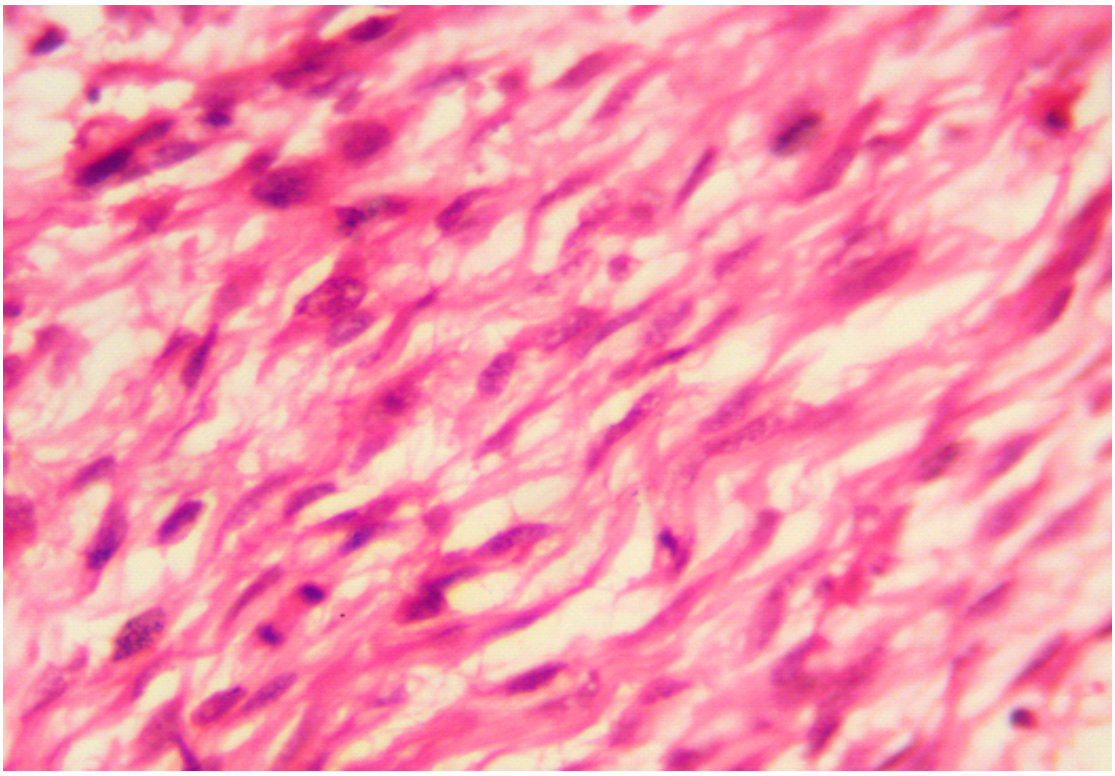

Fig 3: X400 Section shows whorls of spindle shaped fibroblast in indistinct pattern and interspersed by oval shaped luteinized theca cells. There are 4 mitotic figures per10 high power field

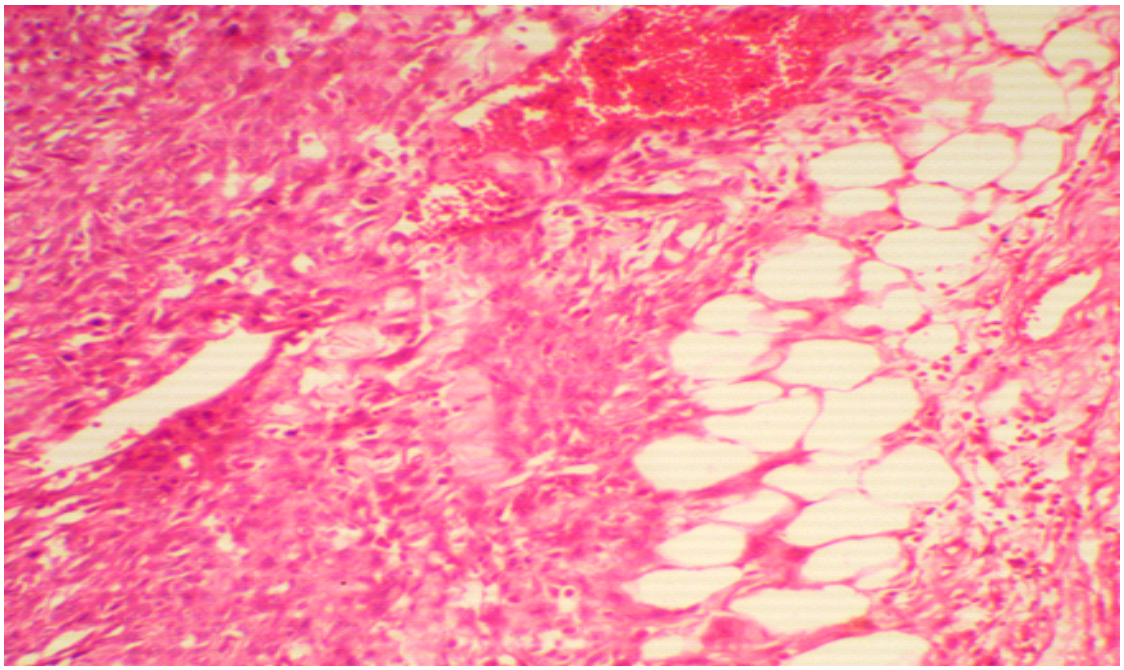

Fig 4: X100 Section shows infiltration of the serosa and omentum by malignant cells similar to that from the ovarian mass

contained multiple fibroids the largest of which was submucosal (4cm by 6cm in dimension). The small intestine contained multiple metastatic deposits largest of which was a partially necrotic tumour about 8cm in diameter in the terminal ileum. This was mainly located on the serosal surface, but infiltrated the wall and focally ulcerated the mucosa. (fig 2)

Histological examination of multiple section from the tumour in the right ovary showed a cellular lesion. Tumour cell nuclei were ovoid to spindle shaped and contained evenly dispersed chromatin. In areas, tumour cells had abundant eosinophilic cytoplasm, in keeping with luteinisation. There are 4 mitotic figures per10 high power field (fig. 3). The histological features were in keeping with a cellular fibrothecoma

The endometrium showed definite proliferative activity with nuclear stratification and mitotic activity. However, there was no hyperplasia or malignancy. Histological examination of multiple sections from the tumour in the small intestine confirmed that it was mainly located on the serosal surface. There were areas of haemorrhage and necrosis. Tumour cell nuclei were similar to those in the right ovarian neoplasm similar mitotic rate, a formal mitotic count revealing areas in which there were 4-5 mitoses per 10 HPF. Several microscopic foci of metastatic tumour were identified adjacent to the main secondary tumour mass.

Discussion

Fibrothecomas are mesenchymal tumours derived from the ovarian stroma and consisting of theca-like elements and fibrous tissue. The vast majority of fibrothecomas behave in a benign fashion and malignant variants are exceedingly rare. Occasional cases of malignant fibrothecoma have been reported [1], but there is doubt as to whether a true malignant variant of this neoplasm exists.

Malignant ovarian fibrothecoma is a very rare tumour of the ovary. This is, to the best of our knowledge, the first case report on this tumour in perimenopausal patient from our country.

Because of its histologic resemblance to fibrosarcoma and sarcomatoid granulosa cell tumor, and also distinction between fibromas and thecomas can be difficult and sometimes impossible to ascertain, Waxman *et al.*[1] proposed in 1979 that this type of tumor should be called "ovarian stromal sarcoma".

These tumors occur generally in older menopausal patient. However, some authors report 2 peaks of frequency: the first peak of onset is after menopause and the second is between 20 and 40years. The occurrence of these tumors before the age of 20 is extremely rare[2]. The tumor is unilateral in 90 per cent of cases and with an average diameter of 6 cm. In 4.5 per cent of cases it may be more than 20 cm^3. Just as seen in this case review.

The reported incidence is between 0.4% and 8.0% of all ovarian tumors, and this wide variability can be attributed to the difficulty in differentiating fibrothecoma from ovarian fibromas or hyperplastic stromal nodules [4].

The clinical presentation in fibrothecomas are usually non-specific namely pelvic pain and menorrhagia. Our patient had menorrhagia which may be due to the presence of submucous fibroids.

The definitive diagnosis of fibrothecoma is histologic. However, Conte *et al.*[5] have described the presence of characteristic sonographic patterns of fibrothecoma. The presence of a homogenous echogenic pattern, with marked posterior acoustic absorption, is highly suggestive of a predominantly fibrous ovarian fibrothecoma; an echogenic pattern, with no posterior acoustic shadowing appears to be correlated with the presence of a mixed fibrothecoma.

Furthermore, the finding of a diffusely hypoechoic mass, with no posterior echo enhancement, is characteristic of pure ovarian thecomas.

Sonographic findings, even though nonspecific, can provide the clinician with useful information which permits detection of these rare neoplasms preoperatively.

Mak *et al.*[6] have described the presence of characteristic computed tomography (CT) patterns of fibrothecoma. Fibrothecomas usually appear as a homogeneous solid tumor with varying degrees of enhancement. Calcification may be present and, as these tumors enlarge, myxoid or cystic degeneration may occur, resulting in a heterogeneous pattern. Our patient could not get CT Scanning done because the equipment is presently faulty in most centers in our vicinity. This painted the picture of the health care delivery in resource-poor countries like ours.

Though CA-125 is usually normal in fibrothecomas, it was elevated in our patient probably due to irritation of the peritoneum as a result of the ascitis.

According to Prat and Scully[7], malignant fibrothecomas are said to show four or more mitotic figures per 10 HPF.

Treatment of these ovarian tumors is mainly surgical and involves complete resection of the mass with en bloc resection of adjacent or infiltrated organs andstructures. For all patients with a potentially resectable tumour, thesurgical access we prefer is a long midline ventral incision with thepatients in the supine position. An additional, transverse incisionwas sometimes adopted in huge tumours in order to provide maximum exposure. Factors influencing survival outcome of tumorous mass includes, location, tumor size, involvement adjacent structures and mitotic index. However, it is generally agreed that the most important factor influencing survival outcome of malignancies is the surgeon'skill in resecting the tumor[8].

The mortality in this case was as a result of metabolic derangement from iatrogenic extensive entero-cutaneous fistula and overwhelming sepsis from peritonitis possibly due to anastomotic leak in our patient. Cause of death could not be ascertained in this patient because autopsy was not done. The relations refused autopsy and buried the corpse within 2 hours of death according to her religious rites.

Recently, immunohistochemical staining with anti-inhibin has been performed on tissue sections, and the antibodies (especially against the á subunit) have been found to be good markers of ovarian sex cord–stromal tumours[9] Although mostly investigated in granulosa cell tumours, positivity has also consistently been demonstrated in fibrothecomas and other sex cord–stromal tumours. Positive staining with antibodies against á inhibin assist in confirming a sex cord–stromal tumour and in excluding other lesions which may enter into the differential diagnosis, including carcinomas with a sex cord pattern. Leiomyomatous tumours have been reported to be negative.[9] In our patient Immuno-histochemistry could not be done because necessary stains and other reagents for this were not available and attempts at getting it done outside the hospital also failed.

In conclusion, we have experienced a very rare case of advanced stage of malignant fibrothecoma of the ovary in a 51 year old woman. Late presentation in this case gave room to spread of the disease that necessitated very extensive surgical procedure, hence the poor outcome in our patient. High index of suspicion with proper preoperative assessment will reduce morbidity and possibly prevent mortality. Peri menopausal women with complaints of menorrhagia, abdominal distention and non specific symptoms should be promptly investigated and counseled for oophorectomy if need be. Also, because of the

mimic of ovarian carcinoma there is a need to encourage perimenopuasal women to do ultrasound screening which may detect a small ovarian growth

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