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Case Report

Ovarian stromal tumor with minor sex-cord element with virilizing menifestations: a rare case report

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ABSTRACT

Sex cord stromal tumor is a rare variety of ovarian tumor. These tumor have association with testosterone production which lead to virilisation in females. Here we report a case of 40yrs old female P2 L2 who presented with clinical signs and symptoms of virilisation: deepening of voice, hirsutism (Ferriman Gallwey score24), clitoromegaly, and breast atrophy. In this patient, serum testosterone and TSH levels were raised. An ovarian mass was detected on ultrasonography. Exploratory laparotomy proceeds, total abdominal hysterectomy with bilateral salpingo-opherectomy was done. On histopathological examination the ovarian mass turned out a sex-cord stromal tumor of fibroma thecoma group-cellular fibroma with minor sex-cord like elements. Post-operatively her serum testosterone level declined and signs and symptoms of virilisation started regressing.

Keywords: Virilising ovarian tumor, Sex cord stromal tumor, Hirsutism, Hysterectomy, Virilization

INTRODUCTION

Virilization is an ominous sign that suggest the possibility of an ovarian or adrenal neoplasm. Virilization refers to a condition in which the androgen levels are sufficiently high to cause additional signs and symptoms such as deepening of voice, breast atrophy, increased muscle bulk, clitoromegaly and increased libido. Hirsutism is excessive male-pattern hair growth.[1] Virilizing ovarian tumors are a rare cause of hyperandrogenism in women, and account for less than 5% of all ovarian neoplasm and those that are malignant, for less than 10% of all ovarian cancers.[2-5] In most of the cases hormonal abnormalities present in patients with virilising ovarian tumours include increased testosterone levels in the presence of normal levels of serum dehydroepiandrosterone-sulphate.[6] Most hormonally active ovarian tumours belong to the gonadal stroma category.[4] Surgery remains the mainstay in the management of these neoplasms, removal of the tumour is usually followed by near-complete regression of the presenting symptoms. Initially the signs of defeminisation, such as flattened breasts and loss of fat around hips, are reversed. Subsequent to this, the virilising effects disappear slowly; the hypertrophied clitoris and the deepening of voice, however frequently persist.[7,8]

CASE REPORT

Here we report a case of 40 years old female, P2L2, housewife reported to the Gynaecology OPD with complaints of pain lower abdomen and irregular bleeding per vaginum since 6 months. Patient also reported increased hair growth all over the body since then. There is no history of any drug intake for previous medical disorder. Menstrual history: she attained menarche at the age of 13yrs. Her previous menstrual cycle was 3-4/30day, regular, moderate flow. But since last 6 months

she was having history of spotting on and off, her LMP was 15 days back. Obstetrics History: she was married for 17 yrs, P2L2 both babies delivered by normal vaginal delivery, her last childbirth was 7 yrs back, using barrier contraception. On examination her vitals were stable; weight 60 Kg, Height 5'3", and general physical examination showed hirsutism of face and body (Ferriman Gallway score 24), deep voice and enlargement of clitoris was present. Bilateral Breasts atrophy with periareolar hair was there. Per abdomen examination, there was a mass arising from the pelvis approx. 14-16 week size deviated to right side, smooth, firm in consistency, nontender and freely mobile. On local examination, clitoromegaly was present (Figure 1). Per speculum examination was normal. On per vaginum examination, same mas felt per vaginally, uterus is multiparous size,firm, felt separately from the mass. The other system examination was unreamarkable. Hemoglobin, haematocrit, fasting blood sugar, serum electrolytes, cholesterol, triglyceride, renal and liver function tests were normal. Tumor marker levels, CA 125, CA 11-9, and AFP were normal. Her chest X-ray and ECG were normal. Endocrinological evaluation revealed an increased serum testosterone level (320 ng/dl), dehydroepiandrosterone-suphate was within normal range (315 µg/dl). Thyroid stimulating hormone (TSH) was 15 µIU/ml. Serum Prolactin, follicle stimulating hormone, luteinising hormone and estradiol were within normal range. She was put on thyroid hormone supplement 25 µg/day. On pelvic organs ultrasound (Figure 2) examination there was a rounded thin walled multiseptated lesion with heterogenous echo texture predominantly hypoechoic measuring 7.7x8.2 cm in right ovary. Right ovary is not separately visualized.

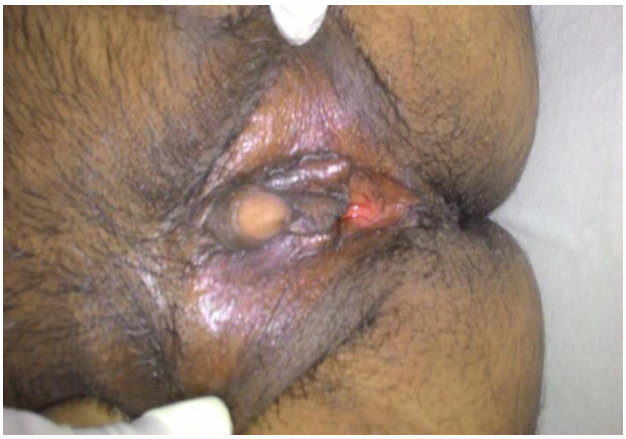

Figure 1: Clitoromegaly visualised in patient.

In view of patient age and multiparity, the management involved a staging laparotomy followed by total abdominal hysterectomy with bilateral salpingo-opherectomy and infracolic omentectomy. Intra-operatively, there was a bluish grey, highly vascular, smooth-surfaced, firm, and movable tumor of size 8x8 cm was found to originating from the right ovary (figure 3). The uterus and left ovary was grossly normal. No ascites, no pelvic adhesions and no findings of dissemination from tumor, no significant lymph nodes were observed. The tumor capsule was intact. On cut section, the right ovary was fleshy with solid-cystic areas in it, reddish brown in color with irregular yellowish areas within it (Figure 4). Peritoneal fluid cytology did not reveal any malignant cells. Histopathological examination of tumor revealed a sex-cord stromal tumor of fibroma thecoma group- cellular fibroma with minor sex cord like elements. On immunohistochemistry, it was positive for PAN Cytokeratin (IHC), Inhibin, Vimentin (IHC), MIC-2 and Calretinin.

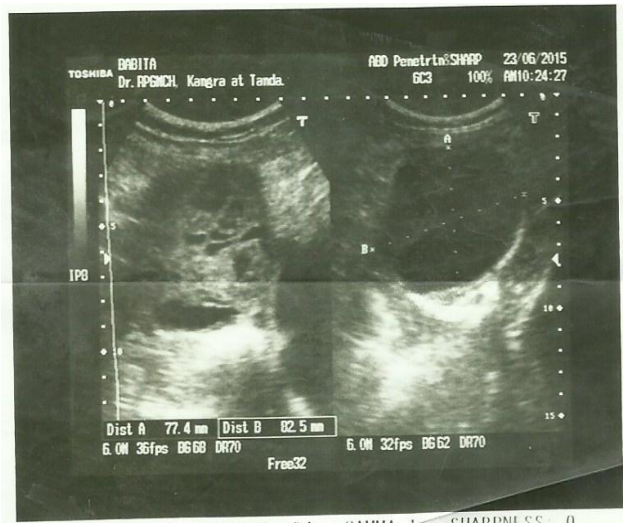

Figure 2: Ultrasound showing a rounded thin walled multiseptated lesion with heterogenous echo texture predominantly hypoechoic measuring 7.7x8.2 cm in right ovary. Right ovary is not separately visualised.

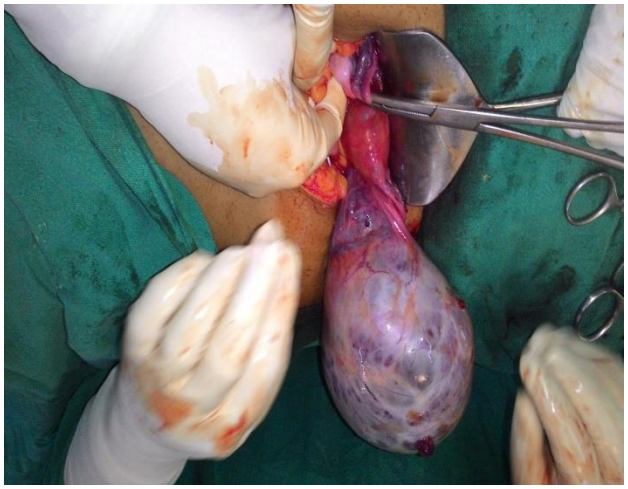

Figure 3: Intra-operatively, there was a bluish grey, highly vascular, smooth-surfaced, firm, and movable tumour of size 8x8 cm was found to originate from the right ovary.

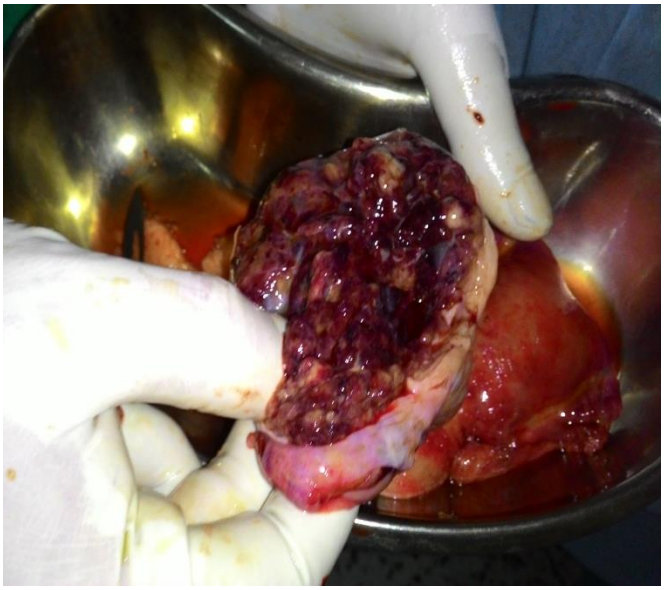

Figure 4: On cut section, the right ovary was fleshy with solid-cystic areas in it of reddish brown in colour with irregular yellowish areas within it.

Post-operative course was uncomplicated. Patient was discharged on 8th post-operative day without any complications. The preoperative elevated serum testosterone level gradually declined to normal. There was a gradual reversal of her symptoms over time; however, the deep voice remains persistant. The patient was being followed up on a regular basis.

DISCUSSION

Sex cord-stromal tumors of ovary account for approximately 5% of all ovarian tumors and 2% of malignant ovarian tumors.[9,10] They are composed of granulosa cells, theca cells, sertoli cells, leydig cells and fibroblasts singly or in various combinations, and a poorly defined tumour group referred to as an unclassified sex cord-stromal tumor.[11,12,13] The stromal component is usually fibromatous or thecomatous. Ovarian stromal tumor with minor sex cord elements is a rare neoplasm, which was first described by Young and Scully as a predominantly fibromatous or a thecomatous tumour containing scattered minor sex cord element in less than 10% of the tumour area.[14] The clinical manifestations are to a large extent determined by the age of presentation, hormonal activity, and virilising properties of the tumor.[15] During reproductive age the typical features of androgen secretion is oligomenorrhea, defeminisation and progressive masculinization (hirsutism, temporal balding, enlargement of clitoris, deepening of voice and muscular development).[5] The patient may present with symptoms of abdominal pain, abdominal distension and bloating. However the most noticieable features are due to hormonal activity and virilising tendencies of the tumor.[16] On the other hand, these tumors may produce little or no androgenic activity and could, sometime show the evidence of estrogenic effect.[8,17]

These tumors may be difficult to identify on radiological imaging, in part because they are isoechoic to the uterus on ultrasonography and isoattenuating on CT. MRI with phased array coils, or colour Doppler imaging, can possibly detect smaller tumours than more conventional imaging methods.[16,18,19] Unfortunately clinical presentation and sonographic appreance cannot predict which mass is malignant.[20]

It has been suggested that a simple clinical assessment and a single serum testosterone measurement may be sufficient to differentiate between benign and malignant virilising tumors in women presenting with hirsutism and androgenic features.[21] A dexamethasone suppression test failed to alter basal values, and 17-hydroxyprogesterone levels within normal range, ruled out a potential adrenal source of androgens.[22,23]

The main treatment of the sex cord-stromal ovarian tumours is surgery. These tumours often are diagnosed via surgery; a correct frozen-section diagnosis seems to be difficult. More than 90% of neoplasms are unilateral and confined to the ovary. In advanced disease or bilateral ovarian tumor or patients who don't want to preserve her fertility, abdominal hysterectomy with bilateral salpingo-opherectomy with surgical staging is necessary which include thorough exploration of abdominal cavity, washing for cytologic analysis, multiple biopsies, omentectomy, and pelvic or para-aortic lymph node sampling or dissection.[11]

A conservative surgery with unilateral salpingo-opherectomy and a careful staging is justified for patients who want to preserve their fertility with absence of extraovarian spread.[11]

Ovarian sex-cord tumor with minor sex cord elements is a rare neoplasm. They are firm, solid grey white to grey yellow in colour. Microscopically they are composed of spindle cells, arranged in intersecting fascicles with variable amount of collagen deposition. The term minor component of sex-cord elements is defined as sex-cord elements occupying not more than 10% area of the tumor on any slide.[14] the individual aggregates of these minor sex-cord elements should not be greater than 0.45 mm. Immunohistochemically, the minor sex cord elements are positive for inhibin, calretinin, CD99,CD56, antikeratin antibody KL1 and MIC.[24,25]

After surgery, symptoms of defeminisation may disappear. Four months after the surgery, menstruation begins and other symptoms disappear in order of their appearance but enlargement of clitoris may last for 20 years.[26]

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