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CASE REPORT **OPEN ACCESS**

Granulosa Cell Ovarian Tumor in Young Aged Females – A Case Series

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A B S T R A C T

Granulosa cell tumours of the ovary belong to the group of sex cord stromal tumours of the ovary. Adult granulosa cell tumours comprises of approximately 1% of all ovarian tumours and 95% of all granulosa cell tumours. They are seen more often in postmenopausal as compred to premenopausal women, with a peak incidence in between 50 and 55 years of age. Here, we present 5cases of young female out of which 1 was very rare for the age, diagnosed early as well conceived even after unilateral oophorectomy. The others were with acute presentation and few diagnosed incidentally came with complains of irregular menses and abdominal pain.

Keywords: Granulosa cell tumor, ovarian neoplasm.

INTRODUCTION

Granulosa Cell Tumorsare rare ovarian malignancy, constituting of about 5% malignant ovarian tumors [1-4]. Based on the histological features and clinical presentations these tumorscan be sub classified into two separate entities namely, the adult-type Granulosa cell tumors and the juvenile type Granulosa cell tumors. Adult type granulosa cell tumors may occur in women from any age group; however, patients are usually diagnosed in between 50 to 54 years of age during their perimenopausal or early postmenopausal period [2]. Surgical excision is the primary treatment for ovarian adult granulosa cell tumors. Patients with advanced stages and recurrence usually receive adjuvant therapy, along with radiotherapy, chemotherapy and hormonal therapy. However, histopathological examination is important to differentiate from other ovarian tumors.Here we report following cases.

CASE REPORT

Case 1

A 26-year-old female (nulligravida) came to surgery OPD with lump in abdomen, irregular menses and excessive bleeding during menses since 8 months. No other significant history present.On examination an abdominal lump of size 20 x 18 cm was present. The lump was firm in consistency, non-mobile and non- tender. On MRI (PLAIN + CONTRAST): A well-defined lobulated right ovarian mass measuring 22 x 18 x 14 cm. It shows intermediate signal intensity on T1WI, intermediate to high signal intensity on T2WI. It contains areas of high signal intensity on T1WI and T2WI. On DWI, this lesion shows restricted diffusion. The solid component shows moderate heterogenous enhancement on post contrast study. Imaging features were suggestive of ovarian neoplasm. Histopathological evaluation was advised. Gross examination: received a single, globular, greyish white tumor mass measuring weighing 5.5kg. It measures 27 x 23

x 15 cm. On cutting open multilocation seen. Reddish fluid (blood) drained out. Histopathological examination revealed sheets and trabeculae of tumor cells. The cells had round to oval nuclei, few cells showing nuclear grooves and scanty pale cytoplasm. The cells showed mild anisonucleosis and pleomorphism. Intervening stroma was fibrocollagenous. Few congested/dilated blood vessels and mononuclear inflammatory infiltrate were seen. Other investigations like Serum Inhibin A levels were 7.2pg/ml.

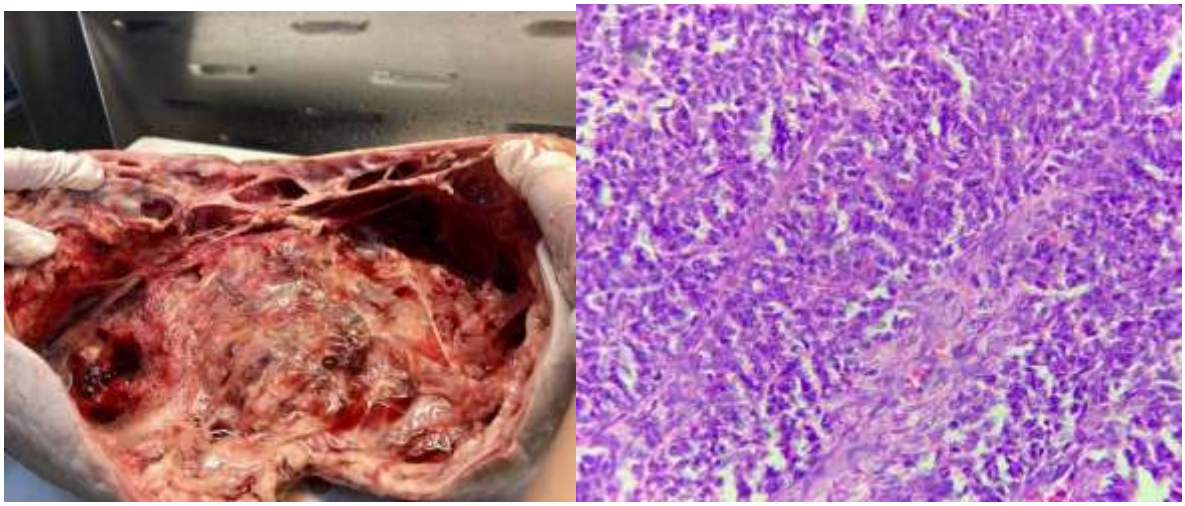

Figure 1 & 2: Gross and microscopic images of ovarian mass with multiloculations showing central grooving of nuclei

Case 2:

A 34 year old female came to gyancopd with pain in abdomen since 15 days and irregular menses. On examination a mass of 10 x 10 cm, firm in consistency was felt. Ps/pv examination was normal. Radiological examination suggested of right mucinous cystadenoma. Pap smear was inflammatory. Histopathological examination was done revealed tumor with solid and cystic areas. Tumor cells arranged in trabeculae, round to oval cells with round to oval nuclei showing central grooving suggestive of adult granulosa cell tumor.

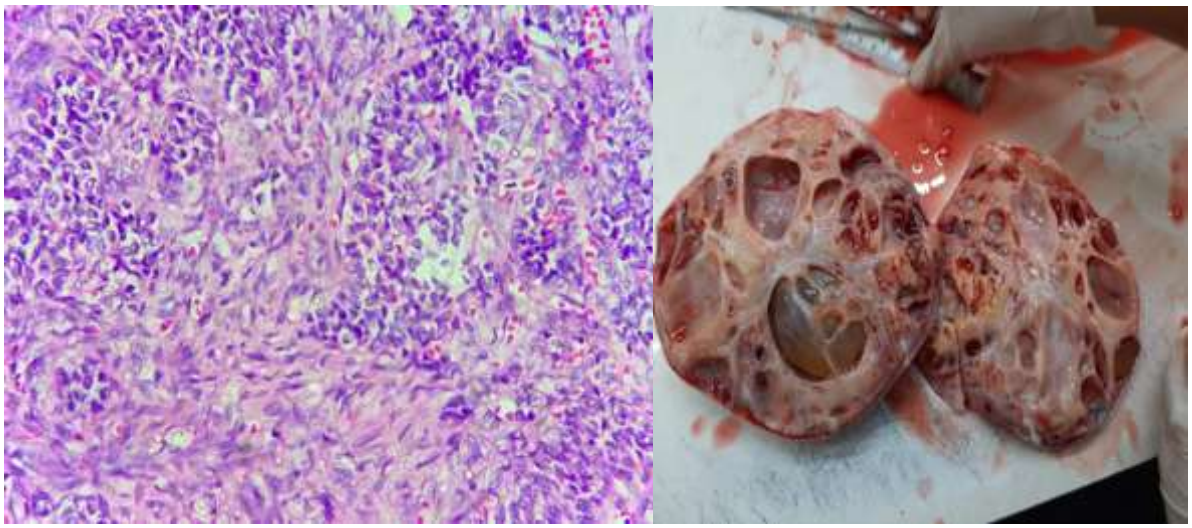

Figure 3 & 4: High power view of tumor cells arranged in trabeculae with grooving and gross image of ovarian mass with solid cystic areas

Case 3:

A21 year old unmarried female came to gynac OPD with c/o pain in abdomen since 8 days with distention of abdomen. She also c/o vomiting and constipation since 6 days. On examination a mass of 10 x 7 cm was felt, hard in consistency. On USG a heterogenous lesion of 11.5 x 7.5 x 14 cm (630cc) was found in infraumbilical region involving the lt ovary. Rt ovary was normal. LDH levels were raised (1961 U/L). Unilateral oophorectomy was done and on histopathological examination, a tumor mass with necrotic areas with nuclear grooving suggestive of granulosa cell tumor.Patient was advised regular follow up.

Case 4:

A33 year old female came to OPD with complains of pain in abdomen. On per vaginal examination a mass of 14 weeks size felt with b/lfornicial tenderness. On USG a large well defined heterogenoushypoechoic solid cystic mass of size 13 x 11 x 8 cm noted in the pelvis. Right ovary could not be separated from the lesion. Lt ovary was normal. CA-125 levels were 248.6 U/ml. On frozen section diagnosis of sex cord stromal tumor was made and specimen for Histopathological examination was sent. On gross a specimen weighing 500gms was sent and on cutting open greyish, white solid cystic areas were seen. Histopathological diagnosis of granulosa cell tumor was given.

Case 5:

A 40-year-old female presented to the causalty with excessive bleeding per vaginum. USG revealed ovarian solid mass and a diagnosis of ovarian malignancy was made. Pateint underwent total abdominal hysterectomy with bilateral salpingoophrectomy and specimen was sent for histopathological examination. On HPE the ovary showed encapsulated lesion composed of cells arranged in trabecular pattern and in sheets. Nuclei showed central grooving with mitotic figures. Diagnosis of adult granulosa cell tumor was given. Patient was advised follow up.

DISCUSSION

Granulosa cell tumors originate from granulosa cell layer of the ovary. The tumors are extremely scarce, comes under sex cord stromal tumours consisting of about 1 percent to 2 percent of all ovarian tumors (malignant). Based on the age of beginning, clinical and pathological features, they can be divided into 2 subtypes, the adult type GCT and the Juvenile type GCT (granulosa cell tumors) consisting of 95 percent and 5 percent of the tumours, appropriately [5]. However, the adult Granulosa cell tumors are seen mostly in postmenopausal women, but women aged in between 50 to 55 years of age show peak incidence [6]. However, in our case series,all the patientsare less than 50 years of age.

Clinical symptoms are unspecific for these tumors, mostly patients present with increase in abdominal size with abdominopelvic discomfort along withmenstrualirregularities, post-menopausal bleeding and unable to conceive too for young patients [7]. These tumors are mostly determined by a histopathology specimen although diagnosis before the surgery can bebuildedupon the presence of an abdominal mass with investigations showing decreased oestrogen levels, thick endometrium and increased levels of serum inhibin [8]. Spread of these tumors are indigenous, through direct as well as intra-peritoneal spreading. The tumors can also spread through hematogenousroute.It may metastasize to the lungs most commonly, liver as well as brain despite of many years of the initial diagnosis [9].

CONCLUSION

Granulosa cell tumors are mostly amongst scarce tumors of the ovary. Full examination of the patients, radiological findings as well as complete investigations can help to reach up to the final diagnosis. The first line therapy is surgical removal and it is evident towards the direction of histopathological evaluation and to stage & grade the tumor. The tumor markers like inhibin levels are important for confirmation of these granulosa cell tumors. Although,thesetumorsare considered tumors with low potential for malignancy, chances of recurrence are high even after days of surgical removal. Clinical evaluation and follow up of the patients are a must. For the patients who desirefertility, (fertility preserving surgery) is the safest option.

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