A RARE CASE OF GYNANDROBLASTOMA WITH JUVENILE GRANULOSA COMPONENT

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ABSTRACT

We report a case of a female aged 20yrs, with complaint of Amenorrhea for 7months, which started with oligomenorrheic cycle of 2-3days / 2-3months for 2yrs. Clinically, it presents clinically as an abdominal mass, associated with either virilizing or feminizing manifestations. Histopathological study of adnexeal mass revealed characteristic features of juvenile granulosa cell tumor, associated with sertoli-leydig cell component. The tumor consisted of substantial amount of granulosa cell elements and sertoli cell elements, with intermingled leydig cells. Immunohistochemistry revealed the tumor cells in both granulosa cell and sertoli-leydig cell elements were positive for vimentin. The prognosis depends on the individual tumor components. We report this case in view of its rarity.

Key words: *Sertoli-leydig cell tumor, Juvenile granulosa cell tumor, Gynandroblastoma.*

INTRODUCTION

The term Gynandroblastoma was first used by Robert Mayer in 1930, in the discussion of a series of Arrhenoblastoma reported by him, one of which has in part of histological similarly to granulosa cell tumor and was accompanied by uterine hypertrophy. He suggested that ovarian tumors may arise from different elements which became morphologically and functionally hermaphroditic so that they may cause both hypertrophy of the uterus and masculanization. Only scattered reports of 'true' Gynandroblastoma are present in the literature, to our knowledge. The confusion arose with collision tumors. Sertoli-leydig tumors which have focal areas resembling granulosa cell elements, and granulosa cell tumors which have focal areas lined by cell akin to sertoli cells. Historically these have led to an over diagnosis of Gynandroblastoma. Currently Gynandroblastoma is defined as an ovarian tumor with admixture of a sertoli - leydig cell tumor and either an adult or Juvenile type granulosa cell tumor (GCT). The minor component should be more than 10% of the tumor.

Gynadroblastoma is an extremely rare sex cord stromal tumor that exhibits significant ovarian and testicular differentiation. In most previously reported tumors, Adult granulosa cell tumor formed the ovarian type component and sertoli-leydig cell tumor formed the testicular type component. In contrast the ovarian type element in the current case reported, have resembled Juvenile granulosa cell tumor. The testicular type elements accounted for 20% of the tumor which resembled intermediate grade Sertoli-leydig cell tumor (SCLT).

CASE HISTORY

A female aged 20yrs presented with oligomenorrheic cycle of 2-3days / 2-3months for 2yrs gradually became Amenorrheic for 7months. On clinical examination external genitalia show clitoromegaly, labia majora and minora normal and pubic hair tanner stage III.

Left fornix: Mass of size 8X8cms was felt separately from the uterus, mobile, variable in consistency with smooth surface.

Ultrasonography revealed large well defined cystic mass of 7.3X5X3.3cms with multiple septae with a thickness of 0.2 to 0.4mm. The laboratory tests were within normal limits. Serological tests for HIV, HbsAg, and HCV were negative, clinical diagnosis of benign ovarian neoplasm possibility of cystadenoma was made. Subsequently left side oopherectomy was performed.

MORPHOLOGICAL EXAMINATION

Gross: Received a single grey white cystic mass measuring 7X5X3cms. Outer surface smooth with engorged veins.

Cut section shows predominantly cystic having multiloculations with focal grey yellow solid areas measuring 2.5x2cms. No papillary excrescence. Cyst wall thickness varies from 0.2 to 0.4cms .

MICROSCOPY

Multiple sections studied reveal nodular and diffuse cellular areas punctuated by macro follicles of varying sizes and shapes. (Fig 2 & 3) Their lumens contains eosinophilic fluid and sheets of rounded neoplastic granulosa cells which have abundant eosinophilic cytoplasm and nuclei lacking grooves. Mitotic figures are

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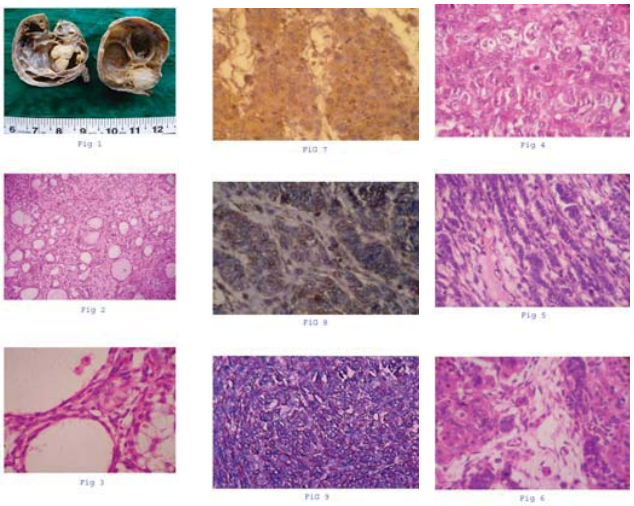
seen at places. Mitoic index <3/HPF. No atypical mitotic figures seen. (Fig 4) Intermediate sertoli-leydig cell tumor component shows sheets, nests, solid cords, trabeculae and line tubules. Mitotic index <4/HPF. No atypical mitotic figures seen. The sertoli cells show columnar to polygonal and have vesicular nuclei with small nucleoli. (Fig 5) The leydig cells were large, round and polygonal cells that have abundant eosinophilic to foamy cytoplasm. Their nuclei are centrally located and vesicular and contain prominent nucleoli. (Fig 6)



DISCUSSION

Gynandroblastoma is rare sub type of sex cord stromal tumor that posses both features of sertoli-leydig and granulosa cell components, with the second cell population comprising at least 10% of the lesion. It gradually occurs in young adult, though it may be encountered in wide age range of 10 to 70yrs[2,3,4,5]. Nearly all tumors present in stage I and may have either estrogenic or androgenic manifestations[1], variable in size. They may be massive (up to 28cms) with a predominantly solid, sectioned surface, showing a few cysts. In this case, the mass is predominantly cystic, with few solid areas, and occurred in 20yrs old female.

In most previously reported tumors, Adult granulosa cell tumor formed the ovarian type component and sertoli or sertoli-leydig cell tumor formed the testicular type[4,5]. In contrast to this, ovarian type element reported here resembled Juvenile granulosa component is 75%, and 25% of the tumor resembled intermediate grade Sertoli-leydig cell tumor (SLCT).

Study of Gynandroblastoma characteristically shows both granulosa cell component (Juvenile type) and sertoli-leydig cell tumor component (intermediate type). The minor component should account for at least 10% of the tumor[6]. On Histopathological examination Juvenile granulosa cell tumor composed of follicular or diffuse pattern or both[7,8]. The solid sheets of cells mixed with small immature follicles of varying sizes and shape, containing secretions. Granulosa cells line the follicles blending into diffusely cellular areas, and mixed with theca interna cells in the stroma. Granulosa cells have round, hyperchromatic nuclei with abundant eosinophilic or clear vacuolated cytoplasm. Nuclear atypia and mitosis seen at places. Mitotic index is <3/10 HPF. No atypical mitotic activity seen. Intermediate type Sertoli–leydig cell tumor has a lobulated appearance with dense cellular areas intersected by hypocellular fibrosis and more typically edematous stroma. Within the cellular areas there is typically a jumbled admixture of dark blue sertoli cells, which exhibit <4/10 HPF mitotic index and no atypical mitosis is seen. Leydig cells with pale, vacuolated to eosinophilic cytoplasm. The immunohistochemistry staining profile show positivity for CD99, Inhibin, calretinin and Vimentin and focal positivity for cytokeratin AE1/AE3.

Minor components of one tumor frequently occur in an otherwise typical tumor of the other type. The diagnosis of Gynandroblastoma should be reserved for neoplasm containing at least 10% of the second tumor type[9] and both components should be well differentiated to avoid lack of reproducibility of diagnosis. If this strict definition is used, the diagnosis of Gynandroblastoma is rare[7]. When less well differentiated components, such as juvenile granulosa cell tumor(JGCT) and sertoli-leydig cell tumor (SLCT) of intermediate differentiation co exist, the pathologist report is more meaningful clinically if the specific designation of each component is included in the diagnostic term.

CONCLUSION

Gynadroblastoma is thought to be a benign neoplasm. No malignant transformation has been documented and almost all patients with Gynadroblastoma have been diagnosed with stage I tumors. However the number of patients diagnosed with GA is less. The current recommendation on to report the presence of both components, sertoli-leydig cell tumor and Juvenile Granulosa Cell Tumor elements because these may affect the behavior. At this stage to our knowledge regarding this entity, complete oopherectomy may be prudent.

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