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Case Report of Mixed Germ Cell Tumor of Ovary in Young Female

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Abstract: ***We want to report here a case of mixed germ cell tumor of ovary which was confirmed by histopathological examination of abdominal mass. A 9year old female child patient was admitted in our hospital with abdominal pain and lump in right side of abdomen. Abdominal CT showed large lobulated hypo dense lesion with multiple non enhancing necrotic area of inhomogeneous enhancing area. On surgical exploration, masses were found arising from right ovary. Histologically features suggestive of mixed germ cell tumor of ovary (teratoma + yolk sac tumor +embryonal carcinoma). Finally a rare case of mixed germ cell tumor of ovary has been established in this study by histopathological examination in abdominal mass arising from the right ovary.***

Keywords: Germ cell tumor, Gonadal, Extragonadal, Yolk sac tumor, Sacrococcygeal area

1. Introduction

Ovarian neoplasm are relatively rare in pediatrics population. They arises from primitive germ cells. Incidence does not exceed 2.2 cases per 100, 000 girls and only one fourth of all ovarian tumors in female younger than 16years are described to be malignant. Mixed germ cell Malignancies of ovary are rare variety of non - dysgerminomatous germ cell tumors. It contains two or more elements. The most common component is dysgerminomatous, which occurred in 80%, followed by EST in 70%, immature teratoma in 53%, choriocarcinoma in 20%, and embryonal carcinoma in 16%. The most common combination is dysgerminoma and an EST. we present a case of mixed germ cell tumor compromising mature teratoma, yolk sac tumor and embryonal carcinoma. Rare combination of uncommon germ cell component, huge size, intact capsule, very high level of tumor markers makes this case unusual and therefore, we report this case.

2. Case Report

A 9 year old girl presented with chief complain of swelling and pain in abdomen in past 30 days, which was increased rapidly in past 30 days and was associated with nausea, loss of appetite and abdominal distention. Patient has not achieved menarche. There was no family history of tuberculosis, ovarian breast, colon carcinoma. Patient has no family, drug history or any past surgery history nor a genetic predisposition to any disease. Clinical examination found child in normal general condition. On abdominal examination, right flank tenderness with solid mass measuring 17cm, reaching beyond umbilicus reaching up to right upper part of abdomen with hard with irregular surface, ill defined margin and restricted mobility was characterized. Additionally an ultra sound of abdomen was performed which showed approx 27.5 x 26.5 x 14.8 cm well defined heterogeneous lesion with internal cystic areas noted in pelvic region extending in epigastric region. Computed tomography (CT) scan revealed approximately 13.5 x 18.5 x 21.3 cm (AP X TR X CC) size multilobulated hypodesnse lesion noted in abdominal pelvic cavity, predominantly in retroperitoneal region, lesion showed inhomogeneous post contrast enhancement with multiple non enhancing areas within, lesion is displacing small bowel loop towards left side, suggestive of malignant lesion of retroperitoneal origin, On laparotomy, there was small amount of small amount of straw colored ascitic fluid. There was huge 15 x20 x 20 cm sized glistening, pink - white, bosselated mass, occupying whole abdomen, and appearing to arise from right adnexa mainly right ovary, as right ovary was not identified only pedicle was seen, mass excised and sent for histopathological examination. Intact ovarian tumor without rupture of capsule was removed and same side salpingectomy was performed, examination of contralateral ovary, liver, peritoneum done which was not significant, inspection of aorto - caval and iliac lymphnodes was done. In HPE report showed histological features of mixed germ cell tumor (Teratoma + Yolk sac tumor + embryonal carcinoma), teratoma was consisted of cartilage (mature & immature), squmous epithelium, fibromyxoid stroma, Gi epithelium, smooth muscle tissue & cyst with cuboidal epithelium. Capsule is free of tumor. Post operative serum AFP 827 ng/ml. Patient received post operative care and was given adjuvant chemotherapy after normalization of AFP. MRI control was performed and no recurrence or tumor residues after six month of follow up.

3. Discussion

Ovarian germ cell neoplasms are thought to be derived from primitive cells of the embryonic gonad. Malignant germ cell tumors comprise less than 5 percent of all ovarian neoplasms. In 1973, the World Health Organization classified germ cell tumors as dysgerminoma, yolk sac tumor, embryonal carcinoma, polyembryoma, choriocarcinoma, teratomas, mixed and gonadoblastoma. Mixed germ cell tumors are defined as those tumors composed of more than 2 types of germ cell components. Mean age of mixed germ cell tumor is 18 years. In children and adolescents more than 60% of ovarian neoplasms are of germ cell origin of which approximately one third are malignant. The most common clinical presentation includes abdominal pain and abdominal mass with or without fever.

USG and CT helps in delineating the size and complexity of tumor. Imaging modalities can be used to establish the diagnosis but different types of tumor may show overlapping features and definitive diagnosis made by histopathology. Mixed germ cell tumors of ovary contain two or more elements of the lesions described above. In our case the combination was that of Teratoma + Yolk sac tumor + embryonal carcinoma. The mixed lesions may secrete either HCG, Alfa - fetoprotein or both or neither of these markers, depending on the components. The most important prognostic features are the size of the primary tumor and the relative size of its most malignant component. Treatment consists of salpingo - oophorectomy with adjunctive chemotherapy. Chemotherapeutic regimens have evolved to combination therapy with overall disease free survival rates of greater than 95 percent. In view of malignant germ cell tumors occurring almost exclusively in young females, preservation of their ovarian function and fertility is becoming an important, although controversial issue . A study by Zanetta et al. confirmed that normal gonadal function and fertility are possible after conservative surgery for ovarian germ cell malignancies, even with adjuvant chemotherapy.

4. Conclusion

Ovarian tumors and especially mixed ovarian germ cell tumors are uncommen in children. Their management must be multidisciplinary between pediatricians, pediatric surgeons and pathologists. Surgery is the standard of care, which should be conservative to preserve reproductive function. A laparotomy approach still the decision of choice if malignancy is suspected, surgical staging is required, and in case of large tumors

References

[1] Taskinen S., Fagerholm R., Lohi J., Taskinen M. Pediatric ovarian neoplastic tumors: incidence, age at presentation, tumor markers and outcome. *Acta Obstet. Gynecol. Scand.*2015; 94 (4): 425–429. doi: 10.1111/aogs.12598. [PubMed] [CrossRef] [Google Scholar]

[2] Young J. L., Jr., Miller R. W. Incidence of malignant tumors in U. S. children. *J. Pediatr.*1975; 86 (2): 254–258. doi: 10.1016/s0022 - 3476 (75) 80484 - 7. [PubMed] [CrossRef] [Google Scholar]

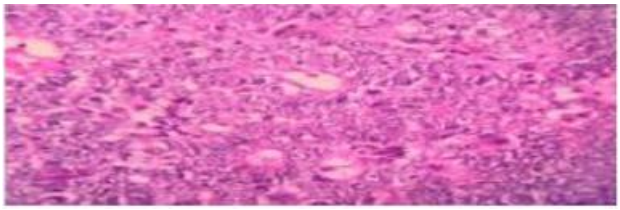


Figure 4: Embryonal Carcinoma showing large anaplastic cells with eosinophilic cytoplasm (400X H & E stain)

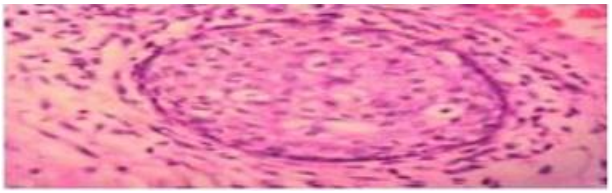
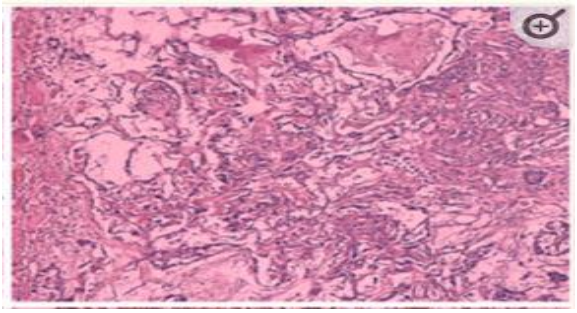
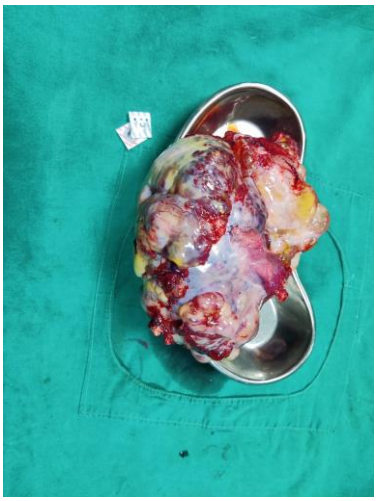


Figure 5: Mature Teratomatous (400X H & E stain)



Teratoma component of yolk sac tumor



Gross surgical specimen with right adenexa resection