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An unusal presentation of mature ovarian teratoma in a young girl: A rare case report

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Abstract
Introduction: Solid teratomas are relatively more common in infants and children (accounting for 15% of ovarian tumor). Though the peak age incidence is at second decade [1]. Metastatic implantation of glial tissue on surfaces of visceral or parietal peritoneum is called as Gliomatosis peritonei (GP) and its occurrence is very rare.
Case Report: A 10 year old girl presented with the complaints of vague abdominal pain and discomfort for two months. Ultrasonography of the abdomen showed a heterogenous solid cystic tumor of 12 X 15 x 10 cm noted in left side of the ovary adherent to the fallopian tube. Left salpingoopherectomy was done and histopathology show features of mature solid ovarian teratoma with Gliomatosis peritonei.
Conclusion: Gliomatosis peritonei is implantation of mature glial tissue on surfaces of peritoneum. It is often associated with ovarian teratoma of any grade. This is always present with massive peritoneal implantation, optimal resection is difficult. Although residual peritoneal disease can be totally quiescent over a long period, long-term follow-up is needed for patients with residual disease. A more conservative surgical approach may be carried out in patients with massive peritoneal spread.

Keywords: Gliomatosis peritonei, mature solid ovarian teratoma.

Introduction
Solid teratomas are relatively more common in infants and children (accounting for 15% of ovarian tumor). Though the peak age incidence is at second decade [1]. Metastatic implantation of glial tissue on surfaces of visceral or parietal peritoneum is called as Gliomatosis peritonei (GP) and its occurrence is very rare.

Case Report
A 10 year old girl presented with the complaints of vague abdominal pain and discomfort for two months. On physical examination, all the vitals were stable. Ultrasonography of the abdomen showed a heterogenous solid cystic tumor of 12 X 15 x 10 cm noted in left side of the ovary adherent to the fallopian tube. So patient undergone left salpingoopherectomy along with biopsy taken from the omentum and Pouch of Douglas. The frozen section of the mass was suggestive of ovarian teratoma with cellular neuroglial tissue in omentum and peritoneum shows gliomatosis peritonei and immature component could not be ruled out. Grossly ovarian mass measuring 12 x 8 x 5 cm. External surface is boss elated, congested and no capsular breach seen. Cut surface shows predominantly solid areas.
Microscopically solid ovarian mass composed of skin with appendages, respiratory epithelium, gastro-intestinal mucosa, mature mesenchymal tissue, large areas of mature glial tissue along with various layers of cerebellum and choroid plexus. No active mitosis or necrosis seen. Omentum and Pouch of Douglas also shows mature glial tissue. Final impression was given as solid teratoma with cellular neuroglial tissue and mature glial implants in Omentum and Pouch of Douglas (Gliomatosis peritonei).

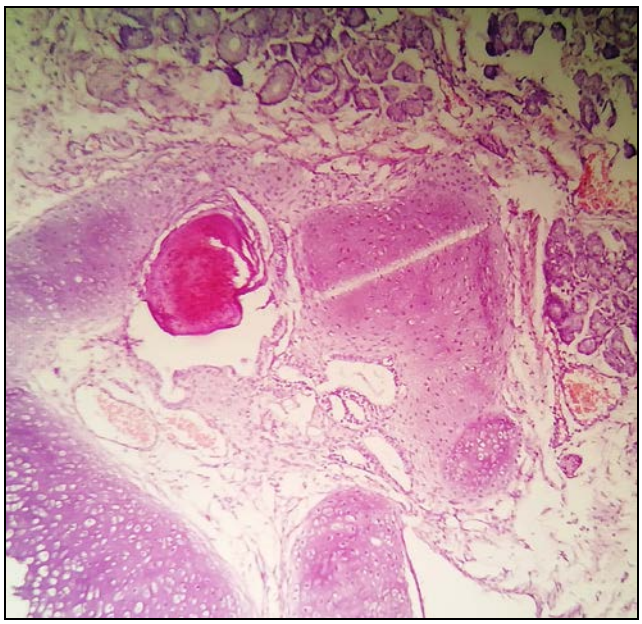

Fig 1: H & E 4 X shows mature cartilagenous tissue and mucous secreting glands

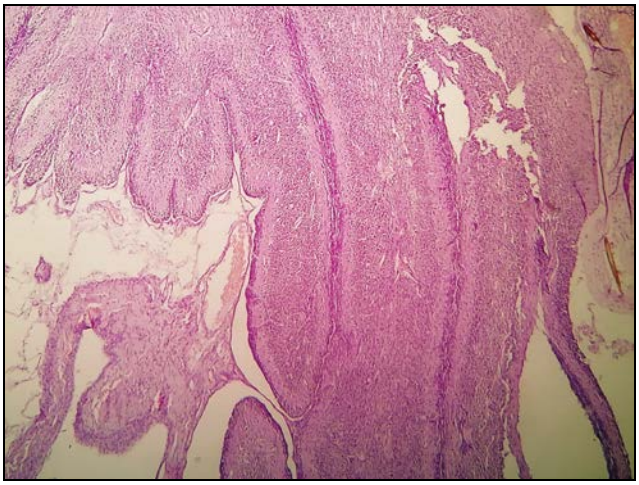

Fig 2: H & E 4 X shows varying layers of cerebellum

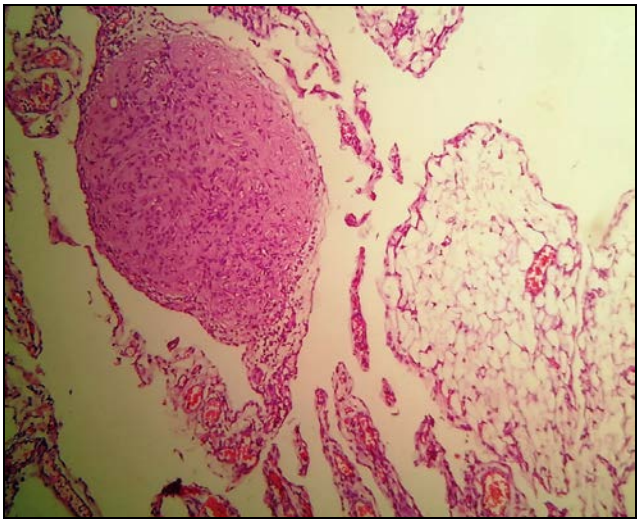

Fig 3: H & E 10 X shows Gliomatosis peritonei

Discussion

A mature teratoma is a grade 0 teratoma. They are highly variable in form and histology, and may be solid, cystic, or a combination of the two. A mature teratoma often contains several different types of tissue such as skin, muscle and bone. Skin may surround a cyst and grow abundant hair). Mature teratomas generally are benign, with 0.17-2% of mature cystic teratomas becoming malignant [2].

Immature teratoma is the malignant counterpart of the mature teratoma and contains immature tissues which typically show primitive or embryonal neuroectodermal histopathology. Immature teratoma has one of the lowest rates of somatic mutation of any tumor type and results from one of five mechanisms of meiotic failure [3].

Gliomatosis peritoneii, which presents as a deposition of mature glial cells in the peritoneum, is almost exclusively seen in conjunction with cases of ovarian teratoma. Through genetic studies of exome sequence, it was found that gliomatosis is genetically identical to the parent ovarian tumor and developed from cells that disseminate from the ovarian teratoma. Clinically, gliomatosis peritonei is considered grade 0 teratoma and is usually associated with favorable prognosis and managed conservatively. However, several conditions must be considered before such a diagnosis is made: First, one must consider the coexistence of metastatic immature and/or mature teratoma before making such a diagnosis. Therefore, carefully examining all specimens is important, as the presence of metastatic immature teratoma affects prognosis and alters the treatment course. Second, on rare occasions, maligant transformation of glioma should be also considered. Third, gliomatosis peritonei can be part of growing teratoma syndrome, characterized by increasing growth of metastatic mass that is composed mature teratoma especially in patients who have received chemotherapy for malignant germ cell tumor [3, 4].

Conclusion

Gliomatosis peritonei is implantation of mature glial tissue on surfaces of peritoneum. It is often associated with ovarian teratoma of any grade. This is always present with massive peritoneal implantation, optimal resection is difficult. Although residual peritoneal disease can be totally quiescent over a long period, long-term follow-up is needed for patients with residual disease. A more conservative surgical approach may be carried out in patients with massive peritoneal spread.

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