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A Childhood Gastric Teratoma : A Case Report and Review of The Literature

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Abstract

Gastric teratomas are extremely rare tumors. A six year old boy presented with abdominal mass. Ultrasound of abdomen showed mixed echogenic lesion. CT scan showed a mass with solid and cystic components and internal calcifications. At operation a tumor arising from the posterior wall of the stomach was found. It was exogastric as well as endogastric in location. Histopathological examination revealed a mature teratoma.

Key words: *Gastric teratoma, Endogastric tumor, Exogastric tumor.*

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Introduction

Teratomas are infrequent germ cell tumors of childhood. They may arise from any organ but the majorities are found in the ovary, testis, sacrococcygeal region and mediastinum. Gastric teratoma is rare, accounting for less than 1% of all teratomas. [1–3] They mostly present as exogastric growths, but can occur as a mix of exogastric as well as endogastric extension. They are classified into mature and immature teratomas based upon presence and differentiation of neuroglial tissue. Mature gastric teratomas are benign and have good prognosis after complete surgical excision.[4] We report a six year old male with mature gastric teratoma of mixed variety who had a complete surgical resection.

Case Report

A six year old boy presented with mild pain in upper abdomen with feeling of mass for last six months; low grade fever and anorexia for three months. Clinical examination revealed a large nontender smoothly marginated lump in the upper abdomen occupying epigastric, left hypochondrium and upper part of left lumbar regions measuring about 10x10cm. It was suspected as a mesenteric cyst clinically. Differential diagnosis were 1) left renal mass 2) left suprarenal mass 3) Retroperitoneal tumor. Abdominal ultrasonography was done and reported as a cystic mass with internal septation and debris present in the epigastric and left hypochondriac regions mesuring about 14x13.4cm. No sonographic diagnosis was made and the radiologist advised for abdominal CT. It was done and reported as a large multiseptate cystic mass in epigastric, left lumbar and hypochondriac region anterior to the pancreas and posterior to the stomach measuring about 14x13.1x8.7cm (Fig 1). Nodular calcifications were also noted at the peripheral part of the cyst. Possibilities were 1) pancreatic pseudocyst 2) mesenteric cyst. Rest of the organ revealed no abnormality at CT. No sizable lymphadenopathy or ascites was detected. All the baseline laboratory investigations were within normal limits. Alpha fetoprotein (AFP) was 21 i.u. At exploration, a huge mass arising from the posterior wall of the stomach was found. It was dissected out from the surrounding tissues. The stomach was palpated, before excision of the mass, which revealed a small extension of the mass into the gastric lumen. The mass was excised with margins of the gastric wall all-around. During laparotomy the surgeon diagnosed the mass as gastrointestinal stromal tumor (GIST) and noted as excision of GIST from stomach wall. Specimen was sent for histopathological examination. Macroscopically the specimen consisted of a 19cm cystic mass. It contained multiple loculi filled with sebaceous material. The inner surface of the cystic wall showed solid grey brown areas and three teeth. The wall was bony in consistency at some foci. On microscopic examination, it was described as a mature cystic teratoma. The gastric mucosa was unremarkable. The submucosa and the muscle coat reveal

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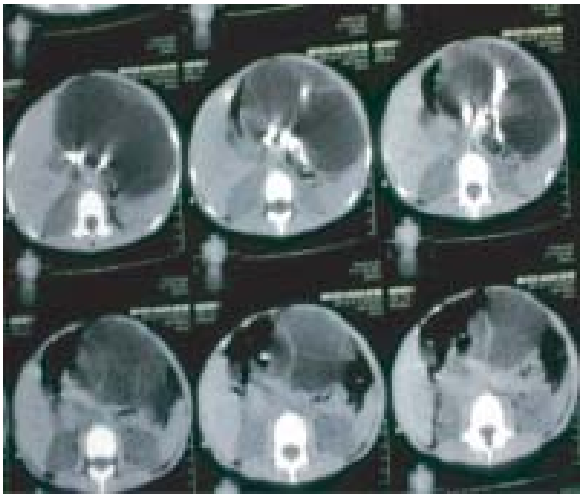

Fig.-1: *Post contrast axial Computed Tomography showing large multiseptate cystic mass with areas of calcification.*

a cystic lesion lined by stratified squamous epithelium (Fig 2). The cyst wall contained skin adnexal structure, mature adipose tissue, spaces lined by pseudostratified squamous epithelium and glial tissue. Many calcified spherules were present.

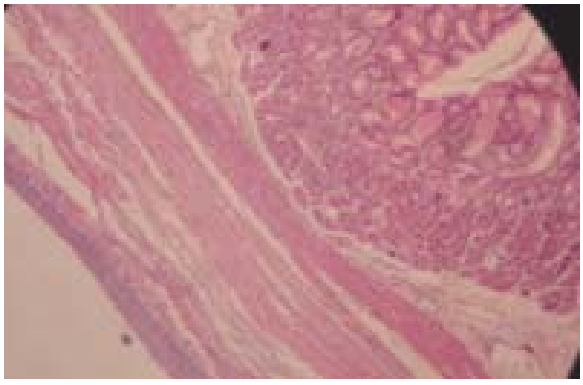

Fig.-2: *Pathological examination of the specimen demonstrating a picture of mature cystic teratoma lined by stratified squamous epithelium and unremarkable gastric mucosa (right side). (200x)*

Discussion

The word teratoma is derived from Greek word "teratomas" meaning "monstrous growth". Generally, they are composed of tissue related to all the germinal layers. Gastric teratoma was initially described by Eustermann et al in 1922. It is extremely rare tumor and forms 1% of the teratomas in the body. Gastric teratomas most commonly arise from the greater curvature and posterior wall of the stomach. [2,5,6] Typical presenting symptoms are abdominal mass, abdominal distension and vomiting, but tumors with intramural extension causing gastrointestinal bleeding and gastric perforation have also been reported. [1,3,4,7] The presented tumor had no endogastric growth pattern. Teratomas are embryonal neoplasms composed of derivates of all three germinal cell layers. [3,7] They can be classified into three types according to their histologic composition. Mature teratoma consists of well differentiated tissue, immature teratoma has varying degrees of immature fetal tissues and the malignant type contains at least one of the malignant germ cell elements.[10] Gastric teratomas may be mature and immature, based on the presence or absence of immature glial tissue. Mature gastric teratomas contain mature glial tissue along with other derivatives of all germinal layers as found in our case. Mature gastric teratomas are considered benign tumors, whereas, the malignant potential is present in immature gastric teratomas. [4,9,10,11]

Majority of gastric teratomas are exogastric (>60%); endogastric growths are present in 30% of cases. Mixed exogastric and endogastric growths are rare.[4] In our case the main component of the mass was exogastric (90%) whereas a small proportion was endogastric which was detected by palpating the gastric lumen before its excision.

In case of endogastric component there may be additional upper alimentary tract bleeding (hemetemesis and melena), and pain abdomen. [4,5,8] In our case the main presentation was a palpable abdominal mass. Abdominal radiograph, ultrasonography, CT/MRI, and endoscopy are important diagnostic tools. In most of the cases the preoperative diagnosis of gastric teratomas is difficult. However the CT- density value is very important. As most of the cystic teratoma contains fatty substances so CT density value is below '0'(zero) i.e. – (minus) in Hounsfield unit (HU). In this case, probably CT density was not measured (as not mentioned in available film).

Gastroscopy in case of endogastric component may aid in the preoperative diagnosis. Complete excision with tumor free margins is the goal. Long term follow up for recurrence is important. Recurrence in a case of completely excised mature gastric teratoma is seldom reported.[9]

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