Childhood Gastric Teratoma: A Case Report

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Abstract

Gastric teratoma is relatively rare type of extra gonadal germ cell tumor which comprises ≤1% of all teratomas. It usually presents with abdominal mass and features of gastric outlet obstruction with or without gastrointestinal bleeding. Complete excision of the tumor is the best mode of treatment. Here, we report a case of gastric teratoma in a two month old male child where we had to go for partial gastrectomy owing to complete removal of the tumor.

Keywords: Congenital; Gastric; Teratoma; Melena

Abbreviations: GT: Gastric Teratoma; USG: Ultrasonography; UGI: Upper Gastrointestinal; CECT: Contrast Enhanced Computed Tomography; AFP: Alpha-Fetoprotein; SOL: Space Occupying Lesion

Introduction

Teratoma, a true neoplasmarises from totipotential cell and occurs in the ovary and testis. Extra-gonadal teratoma occurs in descending order of frequency in sacrococcygeal region, mediastinum, intracranial region & retroperitoneum respectively. Gastric teratoma (GT) is one of the rarest site for extra gonadal teratoma. Apart from clinical findings, ultrasonography (USG), upper gastrointestinal (UGI) contrast study and contrast enhanced computed tomography (CECT) do play important role in the diagnosis of gastric teratoma. However, diagnostic utility of alpha-fetoprotein (AFP) is less in young children because of normal physiological elevation [1]. GT contains both cystic and solid components with or without calcifications. As more than 90% gastric teratomas are benign, no adjuvant chemotherapy or radiotherapy is needed once the tumor is completely excised.

Case History

A 2 month old boy presented with gradually increasing abdominal mass since birth. He also had a history of nonbilious vomiting and passing black stool (melena) for 7 days. The baby was born to a primi mother by normal vaginal delivery at term. He was 3.6kg at birth. Abdominal examination revealed a nontender, mobile, firm to hard mass in the left hypochondrium and epigastrium extending up to the left iliac region across the midline. There was no evidence as cites and the bowel sounds were deviated to the left side of the abdomen. Blood hemogram, serum AFP and liver function test were within normal limit. USG showed a large multi septate cystic space occupying lesion (SOL) in the abdomen. CECT suggested a multi cystic mass (145mm x 105mm x 93mm) with calcifications in the abdomen. The stomach was shifted to the right and small gut loops were shifted inferiorly and to the left (Figure 1) by this heterogeneous mass. In accordance with the reports, we inferred it may be a case of GT.

On exploration, we found a bosselated multicystic lesion arising from the posterior wall of greater curvature of the stomach. It was sitting on the transverse colon by pushing the stomach up...
and duodenum laterally. Omentum was intimately adherent to the
tumor. We could separate the tumor from the duodenum and its
colic attachments except a portion of greater curvature. Actually,
the tumor mass was originating from the greater curvature (Figure
2). Finally, the mass was fully excised along with 5cm gastric
wall (site of origin). The stomach was repaired in two layers.
Postoperative period was uneventful. We started oral feeding
on 5th post-operative day. A repeat USG and AFP after 6 month
were normal. There was no evidence of recurrence and patient
was doing well in 2 years follow-up. Microscopically, the cyst wall
of the tumor was lined by stratified squamous epithelium, goblet
cells, ciliated columnar epithelium along with focal calcification.
There was presence of mature elements of Skin, sebaceous glands,
bone, ganglion cells, cartilage, fat, nerve bundles and hair follicles
in the tumor in addition to small and large intestine mucosa which
confirmed the diagnosis of mature cystic teratoma.

**Figure 2:** Intra-operative picture showed a huge bosselated mass (both cystic and solid) in the transverse colon pushing the
stomach and duodenum. (Before excision, excision with partial gastric resection and excised specimen).

**Discussion**

The term teratoma was derived from the Greek word teraton
meaning “a monster”. It was first described by Virchow in 1869 for
a tumor in the sacrococcygeal region. Other sites of extragonadal
teratoma are liver, kidney, vagina, stomach, mediastinum and
retroperitoneum. The first case of GT was reported in 1922 by
Eustermann and Sentry [2]. GT has been hypothesized to originate
from pluripotent cells in the gastric wall and contains all three
germs cell layers: ectoderm, endoderm, and mesoderm. Though,
monodermal type is also described in modern classification.
According to recent theories, GT may also arise from extra
embryonic cells other than embryonic stem cells, conjoined and
mal-developed twins, and undetermined cell types [3-5].

Teratomas are classified as mature or immature on the basis
of the presence of neuroectodermal elements within the tumor.
Most of the GTs are benign which contain only mature elements
as we seen in our case. Sometimes, it contains or develops foci of
malignancy. Actually, malignancy at birth is uncommon, but chances
of malignant transformation increase with age and incomplete
resection of the tumor [6]. The most common malignant component
is yolk sac tumor. Clinical differentiation of GT from retroperitoneal
teratoma, neuroblastoma, nephroblastoma and pseudocyst of
pancreas is difficult because of (i) similar presenting symptoms (ii)
Comparable calcification in X-ray or CT. (iii) Corresponding filling
defect in the stomach in upper GI contrast study [7]. However,
treatment of choice is complete surgical resection of the tumor
whenever feasible. Sometimes, a partial gastrectomy is required
for removal of entire tumor, as we did in our case. Recurrence of
tumor is not described after complete resection. Thus, adjuvant
chemotherapy or radiotherapy therapy is not recommended [8].
A grading for teratoma has been described by “Norris grading
system”. Grade 0– Mature teratoma. Grade 1-presence of immature
neuroectodermal tissue in one field of a slide. Grade 2– immature
tissue is present in more than one but less than four fields in a
slide. Grade 3- immature neuroectodermal tissue is seen more than
four fields in a slide. This grading system is not useful in children
because the management strategy is not altered by the grade of the
tumor [9].

**References**

Teratoma in an Infant: A Case Presenting with a Gastrointestinal
2. Ivascu M, Bembea M, Jurca C, Moldovan C, Buicu F (2014) Rare Case of
Stud 3: 12-16.
Perinatology 28: 786-787.

