

# Gastric immature teratoma

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## ABSTRACT

Gastric teratoma (GT) is a rare neoplasm which accounts for less than 1% of all teratomas in children. Little more than 100 cases of GT are reported in the literature out of which, about a dozen cases are of immature variety. We present a case of immature gastric teratoma in a 7-month-old male baby.

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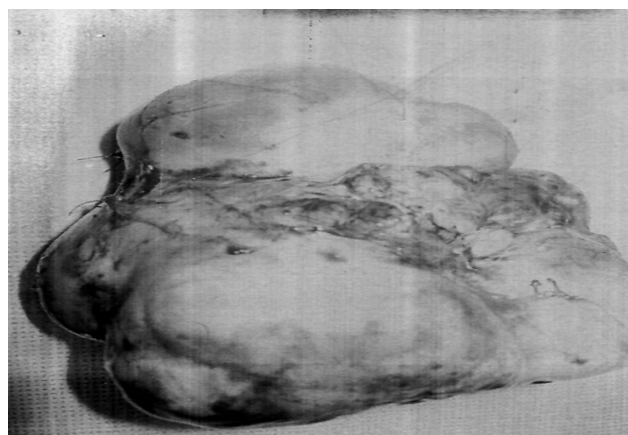
Teratomas are embryonal neoplasm, derived from the tissues of all 3 germ layers. Although teratomas may occur anywhere in the body, they are found in order of frequency, in the ovary, testis, sacrococcygeal region and mediastinum.<sup>1</sup> The stomach is an unusual site for teratoma comprising less than 1% of all teratomas.<sup>2</sup> They occur predominantly in males and generally present as a palpable abdominal mass. Gastric teratoma is usually benign, however its malignant transformation is reported. Prognosis is excellent after complete excision. Recurrence of gastric teratoma in the presence of immature neuroepithelial element is considered and a periodic follow-up check with  $\alpha$ -fetoprotein monitoring is mandatory.

**Case Report.** A 7-month-old male baby was presented with an incidental findings of an upper abdominal mass of one day duration. This mass was discovered at a well baby clinic during a routine physical examination at the time of immunization. The baby was asymptomatic, a routine abdominal examination

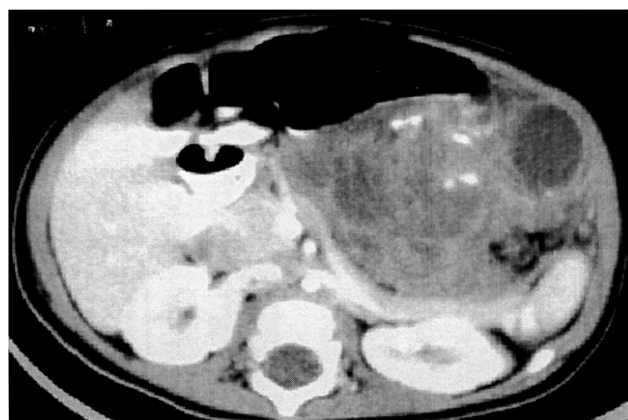
revealed a mass that was large, mobile, painless, globular, of a varied consistency occupying the left hypogastrium and epigastrium. Abdominal ultrasonography showed a large intra-abdominal solid and cystic lesion with calcification and continuous with the gastric outline. These findings were confirmed on computed tomography (CT) scan. All blood investigations were normal except for raised  $\alpha$ -fetoprotein (154 ng/ml).

Laparotomy showed a large, well capsulated mass, measuring approximately 8.5 x 8 cm arising from the greater curvature of the stomach and filling lesser sac. The tumor was removed and enblocked with the involved portion of greater curvature of the stomach. A primary closure of stomach was performed in 2 layers after excision. Postoperative period was uneventful; oral feeding was resumed on the 5th postoperative day and the child was discharged on the 7th day. Repeat  $\alpha$ -fetoprotein in the immediate postoperative period was normal. Histologic examination revealed an immature gastric teratoma (Grade II-III) with extensive neuroepithelial component.

**Discussion.** Gastric teratomas are amongst the rare childhood tumors that constitute less than 1% of all teratomas.<sup>2,3,4</sup> Since the first case of gastric teratoma was reported by Eusterman and Sentry in 1922,<sup>5</sup> a little more than 100 cases are recorded in literature. Unlike teratomas of other sites, gastric teratoma occurs mainly in boys,<sup>3,6</sup> and only a few number of instances have been reported in girls.<sup>2,3,7,8</sup> Gastric teratoma is known to be usually benign;<sup>3,6,9</sup> its other categories include immature gastric teratoma and teratoma with evidence of malignancy.<sup>2</sup> Benign gastric teratoma contains all the mature elements namely the tooth, bone, cartilage, adipose tissue, smooth and striated muscle, mucin secreting glands, and a well-defined epithelial lining such as the squamous or ciliated. The immature teratoma contains immature components from all the 3 germ layers, including neuroepithelial elements. This category of immature teratoma has been subdivided further into 3 grades depending upon the proportion and type of mature tissues or other components.<sup>10</sup> Our patient would be in grade II-III lesion. Only a dozen cases of immature gastric teratoma



**Figure 1-** Gross specimen of the exogastric mass (8.5 x 8 cm)



**Figure 2 -** Enhanced abdominal CT scan shows a large exogastric, heterogenous, mass with calcification and fat component, arising from the greater curvature of the stomach.

are documented in the literature from 1977 onwards.<sup>2</sup> Gastric teratoma usually presents in the first year of life with a palpable abdominal mass of varied consistency or with abdominal distension.<sup>11</sup> Other presentations are upper gastrointestinal bleeding and anemia,<sup>12,13</sup> rupture of the stomach,<sup>4</sup> premature labor and dystocia due to a large tumor.<sup>9</sup> The GT may exhibit exogastric or endogastric growth and could arise from any part of the stomach including gastroesophageal junction,<sup>14</sup> but generally the origin is from greater curvature of the stomach as an exogastric growth<sup>2,3,6</sup> that was found in our case. Plain abdominal radiograph shows a large soft tissue mass with irregular calcification in 50% of cases.<sup>11</sup> The presence of teeth or bone is pathognomic for the teratoma. Various diagnostic modalities such

as ultrasonography, computed tomography (CT) and magnetic resonance imaging (MRI), shows a solid and cystic component with areas of calcification; it further delineates the mass and its extension into surrounding structures. The total excision with primary closure of gastric wall gives recurrence a free survival without adjuvant chemotherapy and radiotherapy. Few cases of malignant teratoma have been described in the literature.<sup>2,15</sup> Immature GT is potentially a malignant tumor; it is important to have regular follow-up with a close watch on periodic  $\alpha$ -fetoprotein titers to monitor recurrence or malignant transformation.

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