

Case Of Immature Mesenteric Teratoma

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Abstract : Mesenteric teratomas are extremely rare tumor arising from totipotent primordial cells, which displays a mixture of tissues of tridermal or bidermal origin. Immature teratoma in mesentery is still rarer. Here we report a case of immature mesenteric teratoma in a two day old neonate, which is youngest such patient except for one case, which has been diagnosed prenatally with the help of ultrasonography. [Kapoor N et al NJIRM 2013; 4(4) : 151-153]

Key Words: Mesentery, Immature Teratoma, Neonate

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Introduction: Mesenteric teratoma arises from totipotent primordial cells and displays a mixture of tissues of tridermal or bidermal origin. As a rule, in children they are found in the sacrococcygeal region and less frequently in the gonads, cervical area, mediastinum, retroperitoneum, cranial cavity, nasopharynx and the upper jaw.¹

Intrabdominal positions are extremely rare and only 25 cases of mesenteric teratoma have been reported until 1999. Only three cases of immature mesenteric teratoma have been published in the literature.^{2, 3} Here, we report a case of immature mesenteric teratoma in the youngest known child i.e. second post natal day excluding a case with a prenatal ultrasonographic diagnosis.⁴

Case report : A 2 days-old male child was admitted to Pediatric surgery ward of our tertiary care hospital with the complaint of progressive abdominal distension since birth and swelling in scrotum. On examination the abdomen was massively distended, umbilicus was everted and engorged dilated superficial veins could be seen. A mass could be palpated in the entire left side of abdomen, which crossed the midline to the right. Bowel sounds could be auscultated. The neonate was passing motion and urine normally.

Computerized Tomography (CT) scan of abdomen was done two days after admission and serial helical slices of 7 mm thickness were taken. A large well defined heterogeneous mass located in the left hemi abdomen, with solid and cystic areas, measuring 7.7 X 6.3 X 12.5 cm was reported. The mass was extending from left hypochondrium up to pelvic cavity and crossing the midline, causing

compression over left kidney and displacing the bowel loops superiorly. Towards the right it was seen anterior to aorta and Inferior Vena Cava without displacing it. The solid component within the mass showed mild to moderate heterogeneous post contrast enhancement. There were multiple low density cystic areas too. Multiple areas of nodular and linear calcification within the mass with evidence of few fatty elements were also visualised.

Exploratory laprotomy done at 11th post natal day revealed a mass, which was partly solid and partly cystic. It was intraperitoneal and present in the left half of abdomen displacing entire small bowel to right side and taking feeding vessels from mesentery. The mass was surrounded by a thick fibrous capsule and was adherent to retrovesical fascia.

An encapsulated mass measuring 12 x 10 x 7cm was received for histopathological examination. On cutting it was grayish white to grayish yellow in colour and showed variegated appearance with solid and cystic areas.. Few cystic areas were filled with mucinous material. Bits were taken and were processed routinely. 3-4 micron thickness sections were cut, stained with Hematoxylin and Eosin (H&E). Microscopic examination showed heterogeneous elements, derived from all the three germ layers. Endodermal element composed of gastrointestinal glands lined by pleomorphic cells, mesenchymal element composed of mature and immature cartilage, fibromyxoid stroma, lymphoid tissue and ectodermal element formed by epithelial cells and few foci of primitive neuroepithelial tissue not exceeding three low-

magnification fields were seen. A diagnosis of immature cystic teratoma of Ihara et al grade II was made.⁵ Serum Alpha Feto Protein (AFP) was also estimated preoperatively, which was 1102.60 ng/ml. The patient was discharged after complete post operative recovery. Regular follow up was advised. Two months after removal of the teratoma Serum AFP level was rechecked and was found to be markedly reduced i.e. 116.00 ng/ml. The child recovered well and was called for monthly follow up. He was lost to follow up after six months.

Discussion: Teratoma takes origin from totipotent cells and may give rise to neoplasm that contains bits of bone, epithelium, muscles, fat, nerves and other tissues.² These primitive cells possess all the deoxyribonucleic acid (DNA) necessary for the evolution of any cell type, which explains the multiplicity of tissues encountered in teratoma.¹

Classically the teratoma originates in the midline position. But in the abdomen, it usually takes the position of one of the Para vertebral gutters, as in the present case, perhaps due to its size and weight of the solid part of the constituent elements.² The anatomy of the mesentery usually offers sufficient space for considerable growth before symptoms can appear. The more peripheral at the mesentery a lesion is located; earlier the symptoms may develop.¹ The teratomas present frequently, as in our case, with a palpable mass or an increasing abdominal girth.

Immature teratoma is characterized by the presence of elements that resemble embryonic tissues, including neuroglial or neuro-epithelial components that may coexist along with mature tissues. In most instances, immature teratoma occurring in the fetus and newborn are associated with a favourable prognosis.^{6,7} The behavior of immature teratoma in adolescents and adults is less predictable and may be associated with poor clinical outcome.⁶

Diagnosis is done by imaging modalities and examination of histological specimen. Although ultrasound is helpful but CT scan especially spiral

computed tomography with three dimensional reconstructions is more helpful as it detects different densities of mass.^{2,8} Histopathological examination of the resected mass is diagnostic and also helps to distinguish between mature and immature teratoma.

The differential diagnosis includes neuroblastoma, hemangioendothelioma, hepatoblastoma and hepatocellular carcinoma, but these tumors are usually solid. Nephroblastoma may be predominantly cystic and mesenteric lymphangioma is primarily cystic but the first is intrarenal and the latter does not contain fat or calcification.⁹ In conclusion it can be said that while making the differential diagnosis of abdominal and mesenteric masses in pediatric age group the entity of teratoma should not be forgotten. During prenatal ultrasonography teratoma should also be kept in mind so that after parturition such cases can be managed immediately as a high risk neonate to provide them with appropriate longevity.

References

1. Abdullatif A, Al-Arfaj, Mohammad A, El-Shawarby, Fatma A, Al-Mulhim, Amer A Lardhi. Mesenteric cystic teratoma in children. Saudi Med J. 2003; 24: 1388-90.
2. Raychaudhari C, Prajapati H, Shah HK. Ind J Radiol Imag. 2006;16: 567- 70.
3. Rattan KN, Ratan SK, Jhanwar A, Kaushik V, Magu S. Immature mesenteric teratoma causing intestinal obstruction. Indian J Pediatr 2007; 74: 207-8.
4. Marcolongo A, Divirgilio G, Bettilli G, Camoglio FS, Fasoli L, Marradi P et al. Immature mesenteric teratoma in a male new born infant: prenatal ultrasonographic diagnosis and surgical treatment. Prenatal diagnosis 1997; 17: 686- 88.
5. 10. Ihara T, Ohama K, Satoh H, Fujii TV, Nomura K, Fujiwara A. histologic grade and karyotype of immature teratoma of the ovary. Cancer. 1984; 54: 2988-994.
6. Carter D, Bibro MC, Touloukian RJ. Benign clinical behavior of immature mediastinal teratomas in infancy and childhood; Report of two

cases and review of the literature. *Cancer*. 1982; 49: 398 - 402.

7. Isaacs H Hr. Perinatal (Congenital and neonatal) neoplasms: A report of 110 cases. *Pediatr Pathol*. 1985; 3: 165-216.

8. Okada T, Sasaki F, Onodera Y, Oonishi S, Ichikawa N, Itoh T et al. Multiple mesenteric teratoms: usefulness of spiral computed

tomography with 3-dimensional reconstruction. *J Pediatr Surg* 2006; 41: 868-71.

9. 6. Bowen B, Ros PR, McCarthy MJ, Olmsted WW, Hjernstad. Gastrointestinal teratomas: CT and US appearance with pathologic correlation. *Radiology*. 1987;162: 431- 33.

Conflict of interest: None

Funding: None
