ORIGINAL RESEARCH PAPER
Volume - 11 | Issue - 09 | September - 2022 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

A CASE REPORT OF RETROPERITONEAL TERATOMA IN A 11 MONTH OLD INFANT:

General Surgery

Dr Amruth N* Resident Doctor, Dept Of General Surgery, New Civil Hospital, Surat, Gujarat. *Corresponding Author

Dr Jignesh shah Additional Professor, Dept Of General Surgery, New Civil Hospital, Surat, Gujarat

ABSTRACT

The incidence of primary retroperitoneal teratoma in infancy is rare but in children it is seen in 3-4% of overall germ cell tumors and 1-11% of primary retroperitoneal neoplasms . Most often they are asymptomatic and diagnosed incidentally and presents clinically only after attaining large size in the form of abdominal distension, abdominal mass with or without compressive symptoms. It is basically diagnosed using the help of radiological investigations like ultrasonography and contrast-enhanced computed tomography(CECT) of abdomen and final diagnosis is confirmed after a thorough histopathological examination of the specimen. The definitive treatment includes complete surgical removal of teratoma. Here we are reporting a case of primary retroperitoneal teratoma in a 11month old male infant who presented with right sided abdominal mass and treated by complete surgical resection. Histopathological examination suggested the diagnosis of mature cystic teratoma.

KEYWORDS

Teratoma , retroperitoneum ,germ cell tumors ,seminomatous and nonseminomatous, Alpha fetoprotein

INTRODUCTION:

Germ cell tumors(GCT) are congenital tumors which are basically classified into gonadal and extragonadal tumours-on the basis of their origin. They usually contain tissues from all the three germ layers-ectoderm,endoderm and mesoderm. Most common sites of GCT are gonadal i,e ovarian or testicular origin. But in children GCT are frequently seen in extragonadal sites like sacrococcygeal region,mediastinum particularly anterior mediastinum ,retroperitoneum and head and neck region particularly in the pineal gland. In retroperitoneum primary mature teratomas occurs due to failure of germ cells migration to their normal location. Teratomas may contain variable degree of mature i,e benign, immature i,e potentially malignant and pure malignant elements-commonly foci of yolk sac tumor. Mainstay of treatment is en-bloc surgical resection and the recurrence of teratoma depends on the immature components of teratoma . The prognosis of teratoma is extremely good after complete surgical removal and overall 5 year survival rate is nealy 100% in benign teratoma. In this case report we described a 11month old male infant with mature cystic teratoma and was treated by complete surgical resection.

Case Report:

A 11month old male child presented to surgical opd with chief complaints of progressive abdominal distension since 2 months. There was no history of bowel or bladder complaints and no weight loss or loss of appetite. No significant past surgical or medical history. He was the second child to the parents with history of full term normal vaginal delivery. No documentation of antenatal ultrasound available. No significant postnatal and family history found. On clinical examination patient's abdomen was distended and a mass of approximately 9*8cm2 found in right hypogastrium and right lumbar region extending towards midline-which was firm and nontender. Rest of the abdomen was normal and bilateral testes were normal in size and descended completely. Patient's complete blood count , biochemical tests and alpha-fetoprotein(AFP) were within normal limits. Ultrasonography of abdomen shows large heterogeneous solid-cystic mass with areas of echogenecity extending from right hypochondrium to right iliac fossa with possibility of origin from retroperitoneum. CECT of abdomen shows 10*9.5*12 cm3 sized peripherally enhancing fluid density lesion with evidence of fat density contents and calcifications extending from T9-L5 vertebrae on right side from right hypochondrium to right iliac fossa with possibility of origin from retroperitoneum. The lesion displaces ascending colon and gall bladder

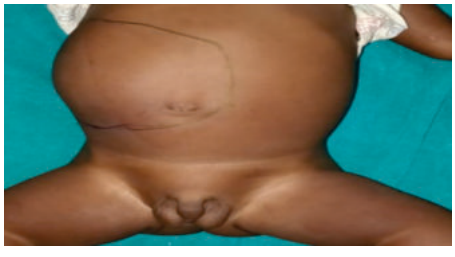

Figure 1: clinical picture showing extension

anteromedially and scalloping the segments 5 and 6 of right side of liver. It compresses the right kidney posteriorly and reaching upto midline displacing the infrahepatic IVC towards left side. The fat plane between all the above mentioned organs and the lesion is preserved. There was no significant enlarged lymph node in peritoneal and pelvis cavity. The overall features suggestive of cystic lesion of retroperitoneal origin- most likely teratoma.

Laparotomy done using supraumbilical transverse incision. A cystic lesion of approximately 10*10*12 cm3 found in retroperitoneum displacing liver,gall bladder and ascending colon anteromedially and compressing stomach and duodenum without invasion of any structures or any major blood vessels. The lesion was excised completely and sent for histopathological examination. The postoperative period was uneventful and patient was discharged on postoperative

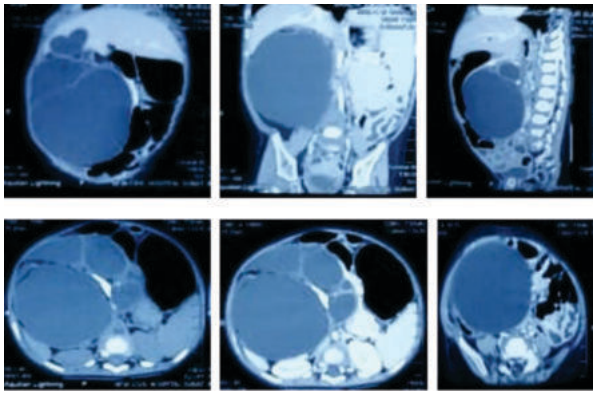

Figure 2- ct scan of large retroperitoneal mass in coronal,axial and saggital sections

day 8. The histopathological examination of specimen shows various tissues derived from all three germ layers like squamous epithelium, mature glial tissue, nerve fibres, mature cartilage, adipose tissue, blood vesssels, gastrointestinal mucosa, mucous glands, ciliated columnar respiratory epithelium, foci of keratinisation and calcification- overall features suggestive of mature teratoma.

The patient followed up after 3 months and after 1 year with normal AFP and there are no signs of recurrence.

DISCUSSION:

Being in the nonseminomatous group of germ cell tumours –Teratomas are the most common form of all GCTs. Teratomas are well encapsulated neoplasm consists of various tissues originating from more than one germ layer with varying degree of differentiation. Teratomas are classified according to their origin, content , epithelial lining and degree of maturation.

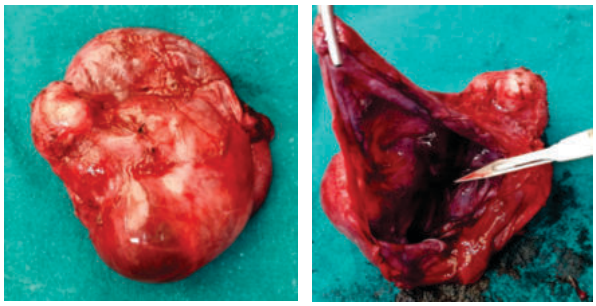

Figure 3- intact and opened specimen of retroperitoneal mass

Firstly Teratomas consists of pluripotent cells basically originating from germ cells and embryonal cells. The germ cell teratomas are gonadal in origin and can be congenital or acquired. The embryonal cell teratomas are mostly congenital and are seen in extragonadal sites like intracranial, retroperitoneal, mediastinal and sacrococcygeal regions. The primary retroperitoneal teratomas are rare and mainly seen in neonates, infants and children and seen in third or fourth decades of lives in adults. In most cases retroperitoneal teratomas are secondary neoplasms and are seen more in males. The origin of extragonadal germ cells are from totipotent germ cells precursors which had an aberrant migration and proliferation at ectopic sites during embryogenesis. They can occur anywhere along the midline of the body following the migration pattern of embryonic germ cells along the primordial urogenital ridge.

On the basis of composition teratomas classified into solid, cystic or mixed teratomas. Solid teratomas contain parenchymal tissues only, cystic teratomas contain fluid, semifluid and fat in sacs and mixed teratomas contain both solid and cystic components.

On the basis of epithelial lining and dermal contents-teratomas divided into epidermis ,dermoid and teratoid teratomas. Epidermal teratomas contain stratified squamous epithelium without any dermal elements but dermal teratomas contain stratified squamous epithelium with contents of dermal origin like hair, sebaceous and sweat glands. Teratoid teratoma show respiratory columnar epithelium and contain sebum.

On the basis of degree of maturation of tumor, teratomas classified into mature and immature teratomas. Mature teratomas are benign, asymptomatic and more commonly seen in females and are solid,cystic or mixed in nature. Immature teratomas contain undifferentiated parenchymal tissues and can be benign or possibly malignant or pure malignant and are usually solid in nature and commonly seen in males.

Clinical features of teratomas are usually asymptomatic and often detected incidentally. In symptomatic patients it may present in the form of abdominal distension, abdominal mass with or withour obstructive symptoms of gastrointestinal and urogenital system. Routine blood investigations are not helpful in diagnosing teratomas and tumor markers like AFP,CEA and CA 19-9 are raised in most cases but are not specific in teratomas. Radiological studies like xray abdomen may show calcified contents, ultrasonography differentiates between cystic and solid nature of teratomas. Mostly importantly ct scan of abdomen reveals the retroperitoneal origin, relation with adjacent structures and major vessels and helps in surgical excision of teratoma. Extent of surgical resection is the most important prognostic factor in teratoma. Only malignant teratomas are reported to recur even after complete resection and there is a risk of malignant transformation of teratoma, which may be the cause of relapse if the tumor s not excised completely. The tumors associated with increased AFP levels-normalize in around 1-2 weeks after resection and can rise again in case malignant tumor recurrence. So AFP levels are checked 3 weeks after surgery to look for recurrence. In cases where there is histopathological evidence of an immature teratoma –adjuvant therapy like chemotherapy, radiotherapy or concurrent chemoradiotherapy can be given after excision of tumor. The overall 5year survival rate of benign teratoma is 100% and malignant teratoma is around 65-68%.

CONCLUSION:

Teratomas are rare and can be considered as one of the differential diagnosis in any fat containing masses of retroperitoneum. They are diagnosed incidentally on imaging or suspected due to symptoms in the particular age group of patients. Complete diagnosis is done by their characteristic appearance on ct scan of abdomen and histopathological examination after resection of tumor. The definitive treatment is by complete removal of tumor. The presence of immature components determines the recurrence and outcome and in such cases regular followup is needed for early detection of recurrence.

Declaration of patient consent:

The authors certify that they have obtained patient's parents consent to use the images and clinical information to be reported in journal and made sure that their names and initials are not to be published.

Declaration of interest:

The authors declare that there are no conflict of interest. This case not received any financial support

REFERENCES:

1. Tapper D, Lack EE. Teratomas in infancy and childhood. A 54-year experience at the children's hospital medical center. Ann Surg 1983;198(3):398–410
2. Gatcombe HG, et al. Primary retroperitoneal teratomas: a review of the literature. J Surg Oncol 2004;86(2):107–13
3. Ding Q, Zhu Y, Liang W. Adrenal teratoma:a case report and literature review. *Chinese J Androl*. 2008;10:40–43
4. H.J. Schmoll Extragonadal germ cell tumors Ann Oncol, 13 (2002), pp. 265-272
5. J.K. McKenney, A. Heerema-McKenney, R.V. Rouse Extragonadal germ cell tumors: a review with emphasis on pathologic features, clinical prognostic variables, and differential diagnostic considerations Adv Anat Pathol, 14 (2) (2007)
6. N.M. Marina, *et al.* Complete surgical excision is effective treatment for children with immature teratomas with or without malignant elements: a Pediatric Oncology Group/Children's Cancer Group Intergroup Study J Clin Oncol, 17 (7) (1999), pp. 2137-2143,
7. Chaudhary A, Misra S, Wakhlu A, Tandon RK, Wakhlu AK. Retroperitoneal teratomas in children. Indian J Pediatr 2006;73:221-3.
8. Choudhury SR, Debnath PR, Pant N, Chowdhary L. Congenital Immature Teratoma of the Retroperitoneum. J Neonat Surg 2013;2:3
9. Annigeri VM, Bhuvanesh A, Gadgade BD, Halgeri AB. Giant Retriperitoneal Mature Cystic teratoma in an infant: A Case Report. J Pediatr Neonatal Care 2016;5:00212