

Case Report

Excision of intra-abdominal mesenteric immature teratoma during COVID-19 pandemic

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ABSTRACT

The world is suffering from the COVID-19 pandemic. Nature has thrown a new challenge towards the healthcare professionals in the form of this new virus. As if that was not enough, we found an extremely rare, interesting and challenging case of mesenteric immature teratoma in this pandemic. Teratomas take origin from totipotent cells and may give rise to neoplasms that contain, in a helter-skelter fashion, bits of bone, epithelium, muscles, fat, nerves and other tissues. They are usually smaller than 10 cm, with cystic space, which is filled with a thick sebaceous secretion containing matted hair and sometimes teeth protruding from a nodular projection, which are unbrushed and may be carious. Though the usual sites are ovaries, occasionally testes, extragonadal sites may be affected. Classically the teratoma originates in the midline position. But in the abdomen, it usually takes the position of one of the paravertebral gutters, as in the present case, perhaps due to its size and weight of the solid part of the constituent elements. Due to its rarity it deserves the attention of the world and therefore we present to u this interesting case.

Keywords: Extragonadal germ cell tumors, Immature teratoma, Mature teratoma

INTRODUCTION

Extra gonadal germ cell tumors represent a rare group of neoplasms, occurring more commonly in the mediastinum and retroperitoneum.¹ But intra-abdominal large immature teratoma which is mesenteric in origin in an adult is extremely rare one.

We present a case of 29-years-old female with large abdominal bulge associated with pain harbouring a large immature teratoma found mesenteric in origin on histopathology after excision, making it an extremely rare case.

CASE REPORT

A 29-year-old female, admitted to Nanavati super speciality hospital on 1st April 2020 with primary c/o visible abdominal bulge since last 10-15 days. She complains on and off abdominal dull aching pain since a month, which was mild to begin with but has increased in severity since last 15 days.

There was no associated nausea/vomiting/constipation/fever. No h/o lack of appetite/weight loss. No h/o any urinary/bowel complains. No significant past medical/surgical or family history. No other comorbidities. H/o two LSCS several years back. LMP:

10/03/2020, regular. COVID-19 report (from outside)-not detected. USG (done outside) was s/o large intra-abdominal tumour likely to be a GIST. CT guided biopsy performed (outside) diagnosed it as immature teratoma.

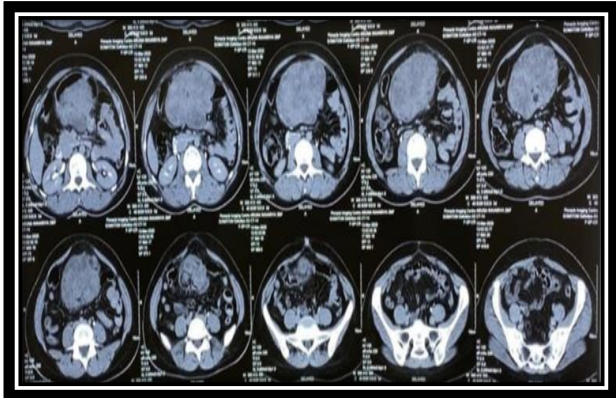


Figure 1: CT scan abdomen-pelvis of the tumor.

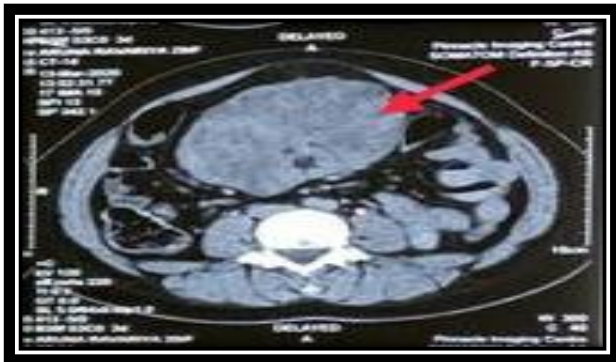


Figure 2: CT scan close up view of the tumor (marked with red arrow).

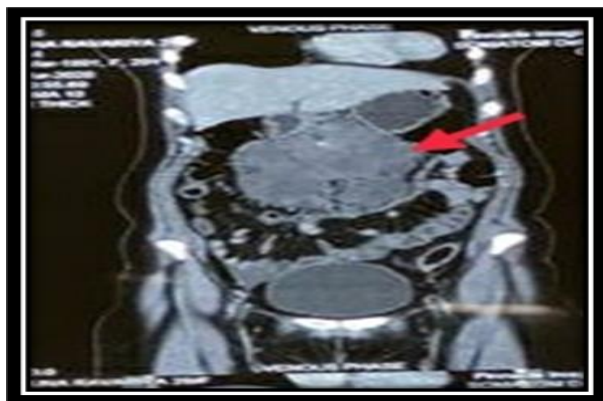


Figure 3: CT scan coronal section of the vertical extent of the tumor (marked with red arrow).

On abdominal examination-a large bulge visible in the supraumbilical region, Mass moves with respiration. Large lump palpable in the supraumbilical region extending up to the right lumbar region. Firm in consistency with smooth margins with minimal tenderness.

After obtaining due consent and pre anaesthetic check-up, she underwent exploratory laparotomy on 01/04/2020 done by Dr. MM Kamat.

Figure 4: On table marking of the extent of tumor and



the incision.

Intra op findings: Tumour approximately 12x12x10 cm dimensions, abutting transverse colon inferiorly and inferiorly border of stomach superiorly. Adhesion to mesentery seen. Entire bowel and other visceral organs were found to be normal.

Tumour was separated from the surrounding adhesions and was completely removed achieving haemostasis.



Figure 5: Intra operative picture. Omentum separated to visualise the tumor.



Figure 6: Tumor completely separated from the mesentery and delivered out of the incision.

Gross appearance of the tumor- irregular, encapsulated bosselated soft tissue mass containing both solid and cystic spaces. Areas of haemorrhage and calcification were seen. Specimen was sent for histopathology examination.

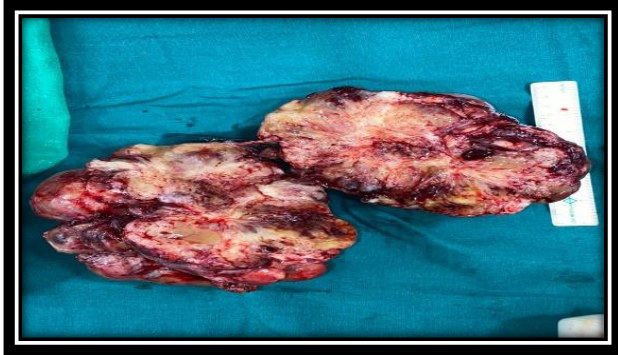


Figure 7: Cut section of the tumor of various kinds of tissue i.e. muscle, fat etc and areas of necrosis and haemorrhage.

Microscopic examination showed the following features: Immature and mature cartilage, foci of mineralization and few bony trabeculae. Immature neuroepithelium arranged as tubules. Mature and immature adipose tissue. Glial tissue, squamous epithelium, epidermal inclusion cyst, mucinous epithelium and intestinal epithelium seen. Immature ameloblastic epithelium seen. Immature loose mesenchymal tissue, immature muscle fibres, clusters of rhabdomyoblastic cells seen. Foci of necrosis and haemorrhage noted.

Features suggestive of extragonadal immature teratoma-Norris grade 2.

Post op period was uneventful. She was mobilised the next day of surgery with a binder. Was started on soft diet on POD3, tolerated well, and was discharged on POD5.

DISCUSSION

Teratomas take origin from totipotent cells and may give rise to neoplasms that contain, in a helter-skelter fashion, bits of bone, epithelium, muscles, fat, nerves and other tissues. They are usually smaller than 10cm, with cystic space, which is filled with a thick sebaceous secretion containing matted hair and sometimes teeth protruding from a nodular projection, which are unbrushed and may be carious. Though the usual sites are ovaries, occasionally testes, extragonadal sites may be affected. Classically the teratoma originates in the midline position. But in the abdomen, it usually takes the position of one of the paravertebral gutters, as in the present case, perhaps due to its size and weight of the solid part of the constituent elements. Mesenteric cystic lymphangioma may mimic cystic teratoma radiologically, when calcification is seen. An abdominal mass freely mobile at right angles to the plane of attachment of the mesentery,

being painless at presentation, is usual. Painful abdominal symptoms of the subacute type correlated with compressive phenomenon with repercussion on the excretory route viz, ureter hydronephrosis or causing chills and fever.²

Diagnosis is done by imaging modalities and examination of histological specimen. Immune histochemistry may also be required.² Ultrasound is useful and can help in the confirmation of the diagnosis but, only a few cases have been reported to make the diagnosis by ultrasound, preoperatively.³ CT scan is most useful as it detects different densities of mass. 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 teratomas occurring in the fetus and newborn are associated with a favourable prognosis.^{4,5} At MR imaging, sebaceous fat within the tumor produces characteristically high signal intensity on T1-weighted images. Hyperintense foci produced by fat within the tumors almost always allow specific diagnosis of teratomas; chemical shift between the fatty and watery contents is a diagnostic finding at MR imaging. In addition to the detection of fat, gravity-dependent layering, palm tree-like protrusions (Rokitansky protuberance and fat-fluid levels are other imaging characteristics of mature cystic teratomas. A cauliflower-like projection or thickening of the wall with an irregular margin is reported to be a sign of malignant transformation of mature teratomas.⁶

In the past, complete surgical resection of the tumoral masses was the standard therapy for extra gonadal germ cell tumors (EGGCTs) patients. But EGGCTs, particularly mediastinal EGGCTs and EGGCTs including NST components, related with a poorer prognosis when treated with surgical resection alone. Recently, the introduction of cisplatin-based chemotherapy in these clinical settings as in gonadal counterpart has dramatically improved the prognosis.⁷⁻⁹

Nonetheless, in several EGGCT patients a persistent residual mass after cisplatin-based chemotherapy and conventional selvage chemotherapy could be observed. Thus, the residual mass resection after chemotherapy is necessary in order to obtain radical control of EGGCT morbidity. The presence of residual tumor is often due to the unresponsiveness of teratoma components in EGGCTs mass.¹² Therefore, this multidimensional approach is needed to assess response, to remove residual disease and eventually to turn to additional chemotherapy.¹⁰

In the case of localized EGGCTs, patients can really benefit from radical surgery and subsequent chemotherapy. Indeed, surgical excision demonstrated advantages in order of disease free-survival, when complete excision can be performed.¹¹

CONCLUSION

Extra gonadal germ cell tumors are very rare tumors. Those arising from the mesentery is even rare therefore it needs the attention of the medical fraternity. The treatment of such tumors is early, complete excision, followed by a careful, extensive, microscopic examination, associated, if necessary, with adjuvant chemotherapy. Finally, to improve the prognosis, close, long-term clinical, laboratory and imaging surveillance is necessary, at shorter intervals during the first 5 years after the excision and annually thereafter.

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