Journal of Surgery
[Jurnalul de Chirurgie]
Case Report Open Access

A Male Patient Presenting with a Giant Asymptomatic Intra Peritonial Teratoma-A Case Report

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Abstract

Teratoma is a type of germ cell tumor that may contain several different types of tissues of the body. Teratoma can be benign (mature) or malignant (immature). Abnormal differentiation of fetal germ cells that arise from the fetal yolk sac was suggested to be the origin of teratomas. Teratoma can be of germ cell origin i.e., testicular and ovarian or of embryonal cells origin. Definitive diagnosis is made by histopathological study and the treatment of choice is a complete surgical removal. We reported a case of a 53 years old male patient presented with painless asymptomatic intra-abdominal mass which causes abdominal distension. Imaging investigations showed a mass extending from the upper quadrants of the abdomen to the pelvis and it has calcifications. The other intra-abdominal organs were normal. Laparatomy was done and a tumor of 25 cm diameter and 3 kg was resected and found to contain bony tissue. Histopathology results showed a benign teratoma. Few cases reported in literature shows that intra peritoneal teratoma is very rare in adults and usually is asymptomatic. But large neoplasms can cause abdominal pain. Treatment of teratoma is a complete resection.

Keywords: Intra peritoneal teratoma; Solid teratoma; Germ cell tumor

Introduction

Teratoma is a type of germ cell tumor that may contain several different types of tissue and sometimes mature elements such as hair, teeth, skin, muscle, and bone. It is a tumor with tissue or organ components resembling normal derivatives of all three germ layers. The tissues of a teratoma, can be different from surrounding tissues. Teratomas can contain human body like structures such as brain, eyes, hands, feet, limbs etc. [1]. Teratoma has a capsule and can contain cysts. Fetus like structure can be produced within the cyst. Teratoma can occur in different forms. It can be benign or malignant. A mature teratoma is benign and found more commonly in women, while an immature teratoma is malignant and commonly found in men. Several theories were developed regarding the origin of teratomas. Abnormal differentiation of fetal germ cells that arise from the fetal yolk sac was suggested. When these germ cells migrate normally they result into gonadal tumors i.e., ovarian and testicular, meanwhile abnormal migration results into extragonadal tumors such as mediasternal, peritoneal and many others [2].

Abnormal development of pluripotent cells results into a class of tumors known as nonseminomatous germ cell tumor e.g. teratomas. Teratoma can originate from embryonal cells or germ cells. Those originating from embryonal cells are congenital and those originating from germ cells are either congenital or not. Examples of germ cell origin teratomas are testicular and ovarian whereas embryonal cells teratomas are all the others apart from those occurring in testes and ovaries. Generally teratoma may occur anywhere in the body. Small tumors which grow slowly are normally not detected early until when a child grow or even in adulthood although they are thought to be congenital. Large teratomas can damage or cause death to the fetus.

Teratomas are easy to resect because they are well-encapsulated and non-invasive of surrounding tissues except teratomas in the brain, and large, complex teratomas that have pushed into and become interlaced with adjacent muscles and other structures. After complete resection some cases of benign mature teratoma has been found to recur as malignant tumor particularly squamous cell carcinoma [3]. Clinical manifestations of teratoma depend on many factors including tumor size, its location, organ of origin and whether it is benign or malignant. Imaging investigations such as ultrasound, computed tomographic scan (CT scan) and magnetic resonance imaging (MRI) are helpful in establishing the diagnosis and even knowing the extent of disease. Definitive diagnosis is made by histopathological studies. The treatment of choice is a complete surgical removal [4]. There is a risk of recurrence after surgical resection. Complications of teratoma are due to mass effect or a large amount of blood flowing through the tumor. Adjuvant chemotherapy is indicated after surgery in case of malignant teratomas.

Case Presentation

We report a case of a 53 years old male patient who was referred from Singida Regional hospital Tanzania admitted on 23 October 2017 here in Benjamin Mkapa Hospital Dodoma Tanzania because of painless intra-abdominal mass which he noticed incidentally 4 years ago as a small lump. The mass was increasing in size progressively until it became big enough to cause a significant abdominal distension. The patient felt only abdominal heaviness and swelling and no history of fever. There was no history of weight loss. All the other systems were not affected.

On examination the patient was an elderly, not wasted, not jaundiced, not pale, afebrile and no any peripheral lymph node enlargement. On abdominal examination the abdomen was largely distended with multiple therapeutic marks (Figure 1). The distension

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Received April 04, 2018; **Accepted** April 25, 2018; **Published** May 02, 2018

Citation: Kivike O, Wambura S, Rugakingila R. A Male Patient Presenting with a Giant Asymptomatic Intra Peritonial Teratoma-A Case Report. Journal of Surgery [Jurnalul de chirurgie]. 2018; 14(2): 79-82 DOI: 10.7438/1584-9341-14-2-6

was more on right side, with no visible peristalsis. A large mass of ≈30 cm long diameter felt which was stony hard, circumscribed, nodulated, immobile, occupies the entire abdomen and was non tender. Liver, spleen and kidney were not palpable. There was a non-shifting dullness and bowel sounds were not clearly audible. (Figure 1)

Figure 1 showed a huge heterogeneous mass extending from the right upper quadrant to the pelvis and it had calcifications. The gall bladder, liver, pancreas and spleen appeared to be normal. Right kidney and both ureters were not visible.

The CT scan findings reported a large mass extending from the upper abdomen to the pelvis with multiple calcifications. The mass found to be intraperitoneal and not attached to any organ. It measured 16x16x22 cm with loss of fat planes in homogenous enhancement. The mass seen to displace liver and right kidney cephalad (Figure 2). All the other intra-abdominal organs seen to be normal. No mesenteric lymphadenopathy seen. In laboratory investigations the Carcinoembryonic antigen (CEA) was 1.754 ng/ml, Createnine was 51.4 mmpl/L, Hb level was 12 g/dl, AST was 14.1 µ/L and ALT was 9.7 µ/L. All the above investigations are within the normal range (Figure 2).

Management

The decision of doing exploratory laparatomy was reached. It was done under general anaesthesia. Extended midline incision was made and the abdominal cavity entered (Figure 3).

Findings

An intra-abdominal mass was found to occupy the large part of the abdominal cavity. It was stony hard, highly vascularized and nodulated. Intestines, mesenteries and omentum found adhering to the mass on both sides including on posterior part. Liver, spleen, pancrease and both kidneys were normal but found to be pushed by the mass.

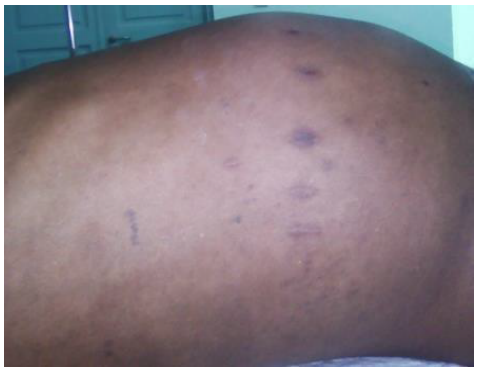

Figure 1: Abdominal distension with multiple therapeunticmarks abdominal ultrasonography.

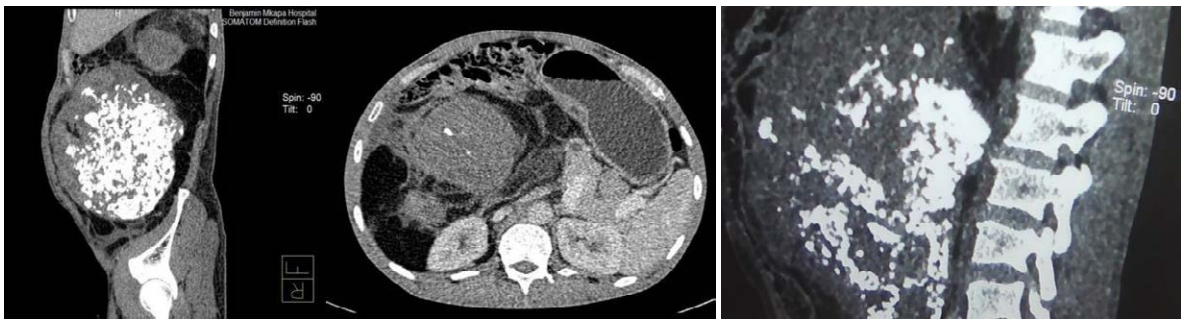

Figure 2: CT scan showing calcified intraperitoneal teratoma.

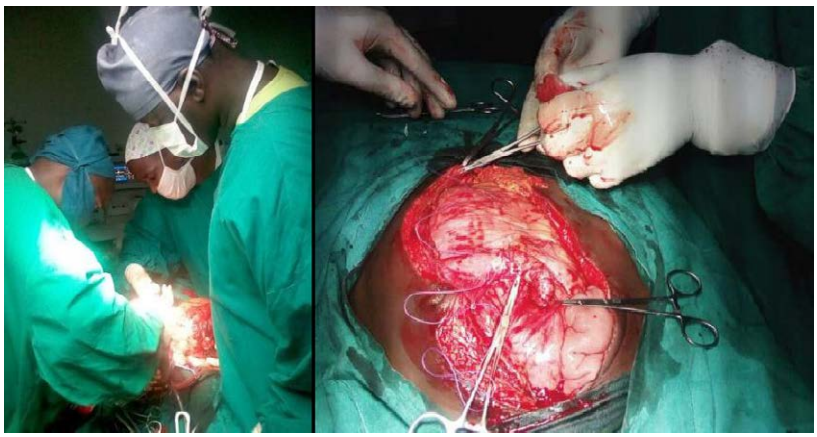

Figure 3: Ongoing surgical excision of the tumor.

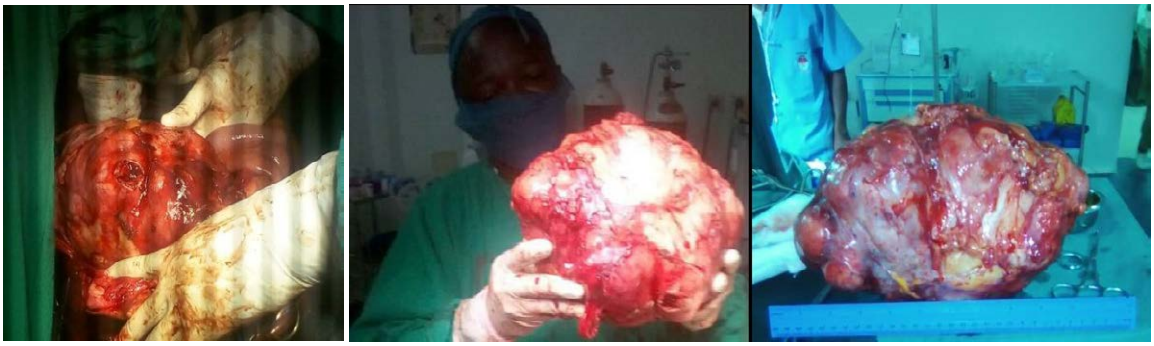

Figure 4: Excision of the tumor already accomplished.

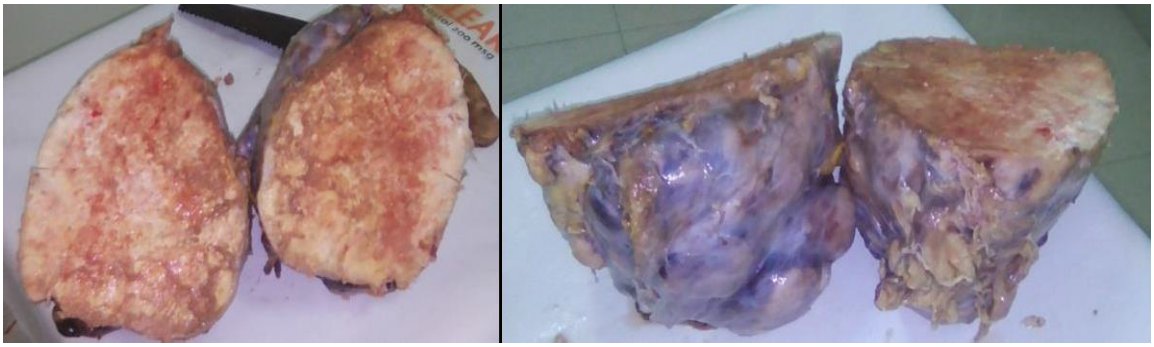

Figure 5: The tumor divided showing a bone.

The tumor of about 25 cm diameter which measures 3 kg was resected (Figure 4) and found to contain a thin layer of soft tissue which surrounds a bony tissue (Figures 4 and 5).

Histopathological findings shows microscopic foci of mature bony tissue and well differentiated structure; a bone. Cells seen composed of ectodermal elements, concluded a mature teratoma with no features of malignant transformation.

Discussion

Intraabdominal teratoma is the one among the rare cases in our setup and in literature there are few reported cases. It is also unusual for a patient with a huge mass like this to present without symptoms. Poonam et al. from Spain reported a giant retroperitoneal teratoma in a 32 years old male who presented with abdominal pain and fullness, the mass found to contain bone surrounded by soft tissues [5]. The commonest site for teratoma to localize is the ovary followed by testis, anterior mediasternum and the least common is the intra-abdominal (retroperitoneal) [6]. Intra-abdominal teratomas are common in children and very rare in adults. So our case is one among the rare cases to be reported. Intra-abdominal teratomas are common in females than in males. They are usually benign if they are cystic and contain sebum or mature tissue but more likely to be malignant if they are solid and have immature embryonic tissue like fat, cartilage, fibrous and bony elements [7]. Therefore our case is different from many reported cases. Teratoma can be cystic or solid and also benign or malignant. It usually contains any type of tissue found in the body. In our case we found that it contained a bone. There was a case report of 36 years old man who presented with an intra-abdominal teratoma which comprised typical features of differentiated teratoma/dermoid cyst but contained a macroscopic rudimentary penis with erectile tissue like structures [8]. Calcifications, teeth or fat can be shown on ultrasound and CT scan if they are present. Computed tomography is better than Ultrasonography in defining the extent and spread of teratoma to the surrounding organs.

Although the lesion is histologically benign, its continuous growth and aggressive local expansion can cause morbidity and mortality. Delay in doing surgery can lead into development of inoperable disease. Locally advancing tumors have been reported to cause severe renal, biliary, duodenal or large vessel obstruction, resulting in bowel necrosis and urinary fistula. A delay can make surgical excision to be more technically challenging thus potentiating serious intraoperative complications such as large vessel or ureteral injury and post-operative complications, including ileus, acute pancreatitis, chylous ascites and sepsis [9]. Early surgical excision is important because it can reduce the chance of degeneration of mature teratoma into undifferentiated tumor components. It is important to perform a complete resection because a high rate of recurrence has been reported in patients with partial resections compared to those who underwent complete resections [9].

Conclusion

Intra-abdominal teratoma is very rare in adults. Usually is asymptomatic. But large neoplasms can cause abdominal pain. Preoperatively, the diagnosis can be established by its characteristic appearance on computed tomography. Treatment of teratoma is a complete resection.

Acknowledgment

We would like to acknowledge the support given by doctors, nurses and other members of staff in the management and care of this patient.

Conflict of Interest

The authors have no conflict of interest to declare.

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