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Rupture of Primary Retroperitoneal Teratoma in An Adult Following Blunt Abdominal Trauma: A Case Report

*Dr. Sami Anwar Khan[1], Dr. Shalu Gupta[2], Dr. B.L. Yadav[3],
Dr. Dinesh Bharti[4], Dr. Deepesh Kalra[1], Dr. Nitin Kumar[1].
[2]Professor & unit head, [3]Associate professor, [4]Assistant professor, [1]Resident
Department of General Surgery, SMS medical college and attached hospitals, Jaipur-302001, Rajasthan, India.
*. *Corresponding author: Dr. Sami Anwar Khan*

Abstract: *Primary retroperitoneal teratoma in an adult is rare. Even rare is their presentation as a surgical emergency. We report a case of rupture of a primary retroperitoneal teratoma in a middle aged man following blunt abdominal trauma. This is the first report of such a case in literature. In the article, we discuss about the diagnostic difficulties faced in this unusual presentation and the treatment options in such a case.*

Keywords: *Ruptured retroperitoneal teratoma; blunt trauma abdomen; emergency setting.*

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I. Introduction

Teratomas are complex tumors, having derivatives of atleast 2 germinal layers (ectoderm, endoderm and mesoderm). They commonly occur in the gonads, but they also occur in extragonadal midline sites like anterior mediastinum, retroperitoneum, sacrococcygeal area, intracranial area etc. Primary retroperitoneal teratoma(RT) accounts for < 4% of extragonadal teratomas and commonly occurs in childhood[1]. It is very rare in adults, with only 35 cases reported till date[2]. Blunt abdominal trauma and subsequent evaluation has diagnosed RT on just 2 occasions[3]. Rupture of a RT following blunt abdominal trauma has not been reported till date. We report a case of rupture of a primary retroperitoneal teratoma in a middle aged man following blunt abdominal trauma.

1.1The Case

A 40 year old man presented with acute onset, severe and diffuse abdominal pain following a fall in the lavatory 4 hours earlier, with blunt injury to upper abdomen. On examination, vitals were stable except for mild tachycardia and pallor. Abdomen was distended with signs of peritonism. X-ray abdomen did not show gas under diaphragm or any other abnormalities. Ultrasonography showed moderate peritoneal free fluid with internal echoes, suggestive of hemoperitoneum. The patient was managed conservatively for 24 hours and 2 units of packed RBCs were transfused. CECT abdomen showed a well defined heterogeneously enhancing mixed density left supra-renal lesion, of 93 x 86 x 94 mm, showing peripheral calcification with internal fat densities(Figure 1). Moderate hemoperitoneum was present and no solid organ injury or contrast extravasation demonstrated. A provisional diagnosis of RT was made but the reason for hemoperitoneum remained unclear.

At 24 hours, as the patient's condition continued to deteriorate with worsening tachycardia, pallor and abdominal distension, it was decided to do an exploratory laprotomy. Intraoperatively, about 200 ml keratinacious material and 700 ml blood clots were evacuated from the peritoneal cavity. There was a solitary midline retroperitoneal 10x8x6 cm cyst in the supracolic compartment, above superior border of pancreas in between stomach and spleen. It had ruptured into the peritoneal cavity through its anterior wall and an active arterial bleeder in the cyst wall (the source of hemoperitoneum) was securely ligated(Figure 2). A lot of hair was evacuated from the cyst cavity. The cyst wall was densely adherent to the surrounding structures and dissection became time-consuming and lead to further blood loss. Keeping in mind the patient's general condition and significant blood loss already, a partial resection of the cyst was done (about 30%) and the rest of the cyst wall was marsupialised. Thorough peritoneal lavage was done and the abdomen closed over a 32F drain in the cyst cavity.

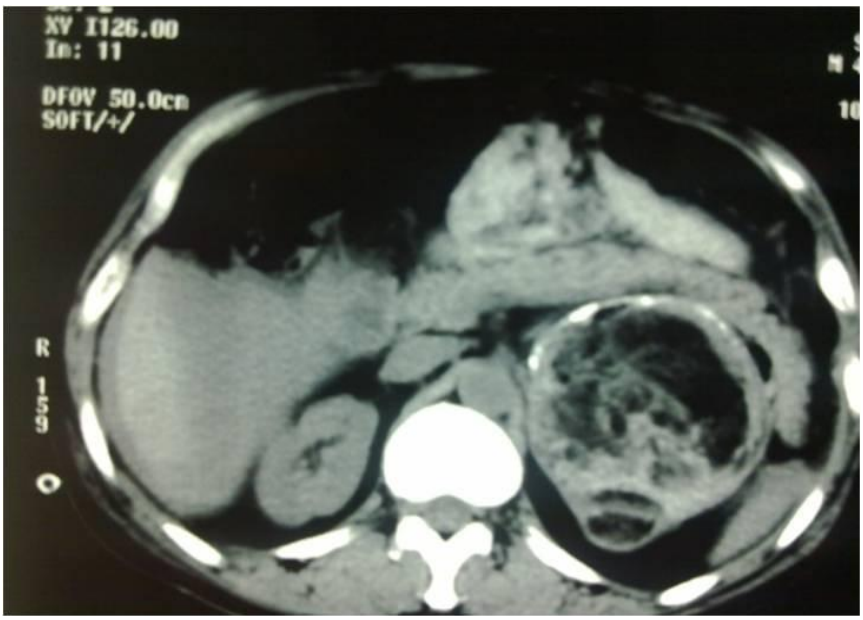

Figure 1: CT abdomen picture showing a well-defined heterogeneously enhancing mixed density left supra-renal lesion with peripheral calcification and internal fat densities.

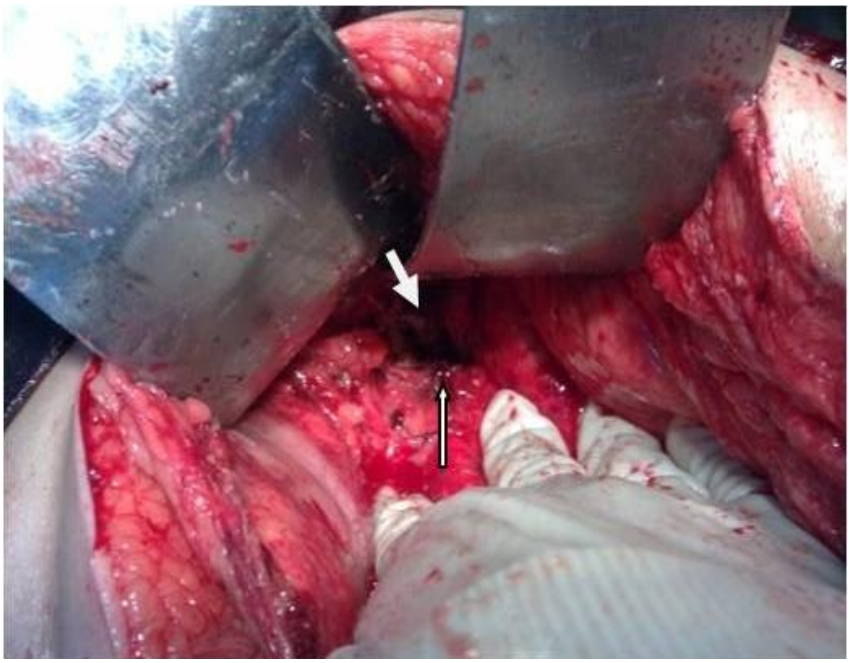

Figure 2: Intraoperative photograph. The defect in the anterior wall of cyst is seen (Thick arrow). The active arterial bleeder has been securely ligated(thin arrow).

Post-operatively the patient recovered well and was discharged on day 7. Grossly, the resected specimen had multiple greyish soft tissue pieces along with hair and cheesy material measuring 8 x 5 x 3 cms. Microscopically, numerous scattered keratinous flakes and hair were seen with no epithelial lining, suggestive of benign cystic teratoma/dermoid cyst. At 8 months of follow up, the patient is asymptomatic and doing well

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II. Discussion

Teratomas are germ cell neoplasms arising from totipotential germ cells, originally found in the genital ridge of embryonic urogenital fold [4]. The migratory ability of these germ cells explains their occurrence at extragonadal sites. In retroperitoneum, teratomas account for < 10% of primary retroperitoneal neoplasms. Macroscopically, they may be cystic or solid. Adult cystic teratomas tend to be benign and contain mature tissue elements, although in 25% cases they can give rise to non-germ cell malignancies[5]. Solid teratomas tend to be malignant, containing immature embryonic tissue elements.

Because of their location, RT tend to grow to considerable size before detection. Most patients are asymptomatic or complain of gradual abdominal distension. Sometimes they have symptoms due to pressure of the tumor on the adjacent structures like renal colic, obstructive jaundice, acute urinary retention etc. Very rarely they may present as an emergency due to infection or rupture of the cyst. Rupture of the cyst can lead to spillage of contents causing granulomatous peritonitis or shock due to hemorrhage from the cyst wall (as in our case)[6].X-ray flat plate abdomen shows calcification in about 74% cases. CT scan finding of a well-circumscribed complex mass with fluid component, adipose tissue and/or sebum as a horizontal fat-fluid level and calcification confirms the diagnosis of a cystic teratoma. CT also gives the relation of the cyst to adjacent organs and helps in planning of surgery. MRI predicts vascular encasement, relation of cyst to aorta, spinal cord etc better [5,7]. CT scan should be preferred over MRI in an emergency setting.Current standard of treatment is complete surgical excision. Benign cystic teratomas have a 100% 5 year survival after complete excision[6]. Complete excision may be difficult when the cyst is infected/ densely adherent/the patient's condition does not permit extensive dissection(as in our case). Partial excision with marsupialisation and drainage of the cyst gives good results in such cases[8]. But, a risk of late relapse(after 2 years) or malignant transformation in the remnant does exist[6]. In such cases, one should ensure a close follow up and an annual CT abdomen to detect relapse early. Others have done an elective re-exploration for complete excision of the cyst wall[4].

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