Abstract:
Hemoperitoneum due to bleeding from intra-abdominal tumours is relatively rare. We report an unusual case of acute abdomen with hemoperitoneum due to bleeding from omentum mimicking a tumour bleed. A 25 year-old-male presented to us with complaints of abdominal pain and distention. Computed tomography revealed a 12 x10 cm heterogeneous mass along the greater curvature of stomach with significant hemoperitoneum. An emergency laparotomy was performed. Intra-operatively, 3000 ml of dark blood, and a hemorrhagic necrotic mass in the gastrosplenic omentum was found. Resection of the mass was performed. Histopathology revealed a hemorrhagic necrotic mass, with no viable tissue. Since there was no viable tissue, the nature of the tumor could not be diagnosed. Regular follow-up is planned in view of the uncertain nature of primary tumour. The differential diagnosis includes a wide variety of benign and malignant tumours, trauma, infarction and vascular causes. Omental tumours should be included in the differential diagnosis of spontaneous hemoperitoneum. The treatment of choice is complete excision of the tumour in view of the multitude of causes and possibility of malignancy. 

Keyword: spontaneous hemoperitoneum, omental pseudotumour, extra-gastrointestinal stromal tumour.

Spontaneous hemoperitoneum is a rare cause of acute abdomen. The etiology of spontaneous hemoperitoneum include malignancy, benign tumours, ectopic pregnancy, abdominal trauma, vascular rupture, idiopathic or excessive anticoagulant treatment. Gastrointestinal stromal tumours (GIST), extra gastrointestinal stromal tumours (EGIST), hepatic, renal, adrenal or uterine tumours are the main causes of intra-abdominal bleeding arising from a tumour. Of these, spontaneous hemoperitoneum due to bleeding from an omental tumour is extremely rare. We report a patient who presented with acute abdomen due to spontaneous hemoperitoneum, possibly from a necrotic omental tumour.
Case report:
A 25 year-old previously healthy male presented to the emergency department with complaints of pain abdomen and abdominal distension of four days duration. His pulse rate was 110/min and blood pressure was 80/50 mm Hg. Laboratory investigations revealed severe anemia (3g/dl), leukocytosis, normal renal function, normal liver function and normal coagulation parameters. Computed tomography (CT) of abdomen and pelvis revealed a 12 x10 cm heterogeneous mass arising from the greater curvature of stomach with significant hemoperitoneum (Figure 1). Rest of the abdomen and pelvis was normal. The provisional diagnosis was hemoperitoneum, possibly due to rupture of a GIST arising from the greater curvature of stomach. After resuscitation patient underwent emergency exploratory laparotomy, in view of the significant hemoperitoneum. Intra-operatively, there was about 3000 ml of altered blood and a 12x10x10 cm soft hemorrhagic mass was found in the gastrosplenic omentum. It was not adherent to the stomach, liver, spleen or transverse colon. There were no significantly enlarged lymph nodes. Complete enbloc resection of the mass along with the gastrosplenic omentum was performed. Cut section of the resected tumour showed a partly necrotic fleshy mass with hemorrhage and a thick capsule (Figures 2&3). The patient had an uneventful postoperative recovery and was discharged on the tenth postoperative day.Histopathological examination of the resected specimen showed areas of hemorrhage and ballooned vacuolated cells with condensed chromatin suggestive of necrosis (Figure 4). There were no viable cells, hence immunohistochemistry could not be performed.

Discussion:
Spontaneous hemoperitoneum is a rare but life threatening condition. With the availability of modern imaging, the underlying etiology can be preoperatively diagnosed in most of the patients and surgical planning can be made accordingly. Appropriate preoperative diagnosis is essential since some conditions like omental infarction with hemoperitoneum could be managed conservatively without surgical intervention or with minimally invasive techniques. Among the omental tumours EGISTs are the most common tumours. Other rare omental tumours include angiofibroma, follicular dendritic cell sarcoma, hemangiopericytoma, lipoblastoma, yolk sac tumour, solitary fibrous tumour, myofibroblastic tumour and teratoma. Non-neoplastic causes of spontaneous bleeding from omentum include trauma, aneurysm of arteries in omental artery, and portal hypertension. Our patient possibly had bleeding from an omental tumour. The nature of the mass could not be established, as viable tissue was not available on histopathological examination. In published medical literature there is no similar report with complete necrosis of the tumour as in our patient. Considering the location of the tumour and presentation with hemoperitoneum, a pseudotumour due to organized hematoma or an EGIST or a vascular tumour of the omentum are strong possibilities. Umiker and Iverson coined the term “inflammatory pseudotumor” (IPT) to describe lesions whose the clinical and imaging findings mimic those of malignant tumors. The lesion is composed of lymphocytes and plasma cells, myofibroblastic spindle cells, and varying amounts of collagen, as a fibrous reaction. Some authors prefer the term inflammatory myofibroblastic tumour due to the predominance of myofibroblasts and...
An Initiative of The Tamil Nadu Dr M.G.R. Medical University
University Journal of Surgery and Surgical Specialties

histiocytes. The cause of IPT is idiopathic in most cases, some are related to trauma and inflammation, immune-autoimmune condition or secondary to viral infection. Pseudo-tumors are usually found in children and young adults and are most commonly described in the orbit and lungs, though they arise almost anywhere in the body; few case reports have described histologically proven IPTs in the omentum. The radiologic features are variable and nonspecific, consistent with the amount of fibrosis and cellular infiltration. Hence it is called a ‘great mimicker’. GISTs occurring as primary tumors outside the gastrointestinal tract are designated as EGISTs. EGISTs may occur in the omentum, mesentery or retroperitoneum. Their true origin is uncertain; however, their histological appearance and immunophenotypes are typically identical to those of classical GISTs. The probable EGIST in the present case was located in the gastrosplenic omentum. EGISTs are often asymptomatic until they reach a large size since they do not cause obstruction or intestinal bleeding. Very rarely these EGISTs can be associated with gastrointestinal malignancy. Thus it is important to look for associated tumors in gastrointestinal tract in the imaging study. In view of the rarity of these tumors, the prognostic factors of EGISTs have not been well established. According to the National Institutes of Health algorithm for assessing malignancy of classical GISTs, most omental EGISTs would be classified as high-risk due to their large size alone. However, the tumor size is not a reliable prognostic parameter in the case of omental EGISTs. In a study by Reith et al, 39% of patients with EGISTs had an adverse outcome, which suggested that EGISTs were aggressive and were more similar to GISTs located in the distal gastrointestinal tract. Barros et al analyzed 9 EGISTs and revealed that the average overall survival was 26.4 months. However, in other reports, omental EGISTs have been found to have a low mitotic rate and good overall survival as compared to mesenteric EGISTS. Since the primary pathology could not be defined in our patient, he has been under close surveillance. At a follow-up of 6 months he is free from any local recurrence or metastasis.

Conclusion:
Spontaneous hemoperitoneum due to bleeding from an omental tumour is a rare but life threatening situation. Prompt diagnosis followed by emergency laparotomy with complete resection of tumour is the treatment of choice. Regular follow-up is necessary in view of the uncertain prognosis and risk of recurrence.

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Figures: