

Case Report

Want to operate an abdominal lump? Think twice; it might be spontaneous rectus sheath hematoma: a case report

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ABSTRACT

Rectus sheath hematoma is a rare, but potentially misdiagnosed clinical entity. It occurs when there is direct tear in the rectus abdominis muscle fibres or in the supplying blood vessels. It may be associated with trauma, raised intra-abdominal pressure, or muscle weakness. When non-traumatic, the condition is termed as spontaneous rectus sheath hematoma. Because of its rarity, spontaneous rectus sheath hematoma can be easily missed, endangering patient management. With progressively increasing use of anticoagulant and antiplatelet agents, the incidence of this pathology is rising. We are reporting a case of spontaneous rectus sheath hematoma in a 56 year old female, known diabetic, hypertensive with dyslipidaemia on combination drug therapy but not on anticoagulant/antiplatelet medications, that was clinically misdiagnosed as omental hernia. The main presenting complaint was swelling in abdomen for 1 month. There was no history of trauma. Radiologic findings showed hypoechoic multiloculated complex cystic lesion. Cytological findings showed features of old hematoma. This case report intends to increase awareness in considering rectus sheath hematoma as an important differential diagnosis of lump abdomen. Rectus sheath hematoma, a rarely seen pathology, often confuses clinicians leading to unnecessary negative laparotomies. Definitive operative procedure should not be undertaken depending on sonographic findings alone, as the images are prone to subjective error. The main treatment modality of rectus sheath hematoma is conservative management.

Keywords: Rectus sheath, Hematoma, Spontaneous

INTRODUCTION

Rectus sheath hematoma is a rare but distinct clinical entity. It occurs when a hematoma is formed beneath the sheath of rectus abdominis muscle or within the muscle bulk itself.¹ It may be due to rupture of superior or inferior epigastric arteries or their branches, or direct damage to muscle fibres. Very rarely hematoma may also be formed in the oblique muscle of abdomen.²⁻⁴ It is termed as non-traumatic or spontaneous rectus sheath hematoma when it is not associated with any abdominal trauma.⁵ Several risk factors have been described like older age, female patient, blunt trauma, injection, platelet function defect, any haematological/coagulation disorder,

anticoagulant/antiplatelet therapy, increased intra-abdominal pressure (coughing, sneezing, urination, defaecation).⁶ With increasing use of anticoagulant/antiplatelet drugs, the incidence of spontaneous rectus sheath hematoma is rising.^{7,8} Statin group of drugs is known to cause musculoskeletal side effects that range from myalgia, myositis, to even rhabdomyolysis.⁹ These effects are aggravated when combination drug therapy is used.^{10,11} Long standing hematoma may cause necrosis of rectus muscle, thereby weakening the abdominal wall further. With increasing severity the complication rises. Higher grades of hematoma may cause multiorgan failure; even abdominal compartment syndrome.¹² The management of rectus

sheath hematoma is simple. Only conservative therapy would suffice i.e. bed rest, analgesics.^{7,8} Very rarely, in uncontrollable hemodynamic disturbances surgical evacuation of hematoma & ligation/embolization of bleeding vessels may be needed. Prompt & correct diagnosis can avoid surgical intervention, even for large hematoma.

Owing to the rarity, rectus sheath hematoma is often mistaken for other common abdominal conditions like acute abdomen/appendicitis/cholecystitis, abdominal wall abscess, intra-abdominal abscess, abdominal wall neoplasm, intra-abdominal neoplasm, peptic ulcer disease, leaking aortic aneurysm, even hernia leading to unnecessary negative laparotomies with increased morbidity and mortality.^{5,13-15} We are reporting the case because it was clinically diagnosed as omental hernia. Sonographic impression was a complex cystic lesion. But it turned out to be an old hematoma on cytology. The purpose of this report is to share our experience.

CASE REPORT

A 56 year old female patient known diabetic, hypertensive with dyslipidaemia presented with complaint of uneasiness & heaviness in upper abdomen for last 1 month. There was no history of abdominal trauma prior to it. But a history of chronic constipation was there. The patient was on combination drug therapy containing atorvastatin, amlodipine, rabeprazole, metformin. The dose of atorvastatin was changed from 10 to 20 mg, recently. On examination it was an oblong shaped firm swelling measuring 3x2 cm, on left side of upper abdomen above umbilicus. Overlying skin was normal. Clinically it was suspected to be an omental hernia. There was no past history of any major abdominal surgery except that of tubectomy done 30 years ago. Imaging study showed a complex multiloculated hypoechoic lesion with a possible diagnosis of cyst (Figure 1). When sonography failed to provide any definite opinion, FNAC was suggested. It yielded altered blood. The cytospins examined show groups of fibroblasts, histiocytes, hemosiderin laden macrophages in a background of degenerated blood elements (Figure 2 & 3). While examining the patient during FNAC, the swelling was found to be a parietal one. It became more prominent on straight leg rising test & head lifting test. The diagnosis of spontaneous rectus sheath hematoma was made. Routine haematological, biochemical reports were within normal limits except for markedly elevated serum triglyceride level.

We are reporting the case because it was clinically suspected as omental hernia that turned out to be a spontaneous rectus sheath hematoma. It thereby avoided unnecessary surgery. We want to emphasize the fact that the presence of awareness among clinicians, as well as sonologists about this rare but definite entity can avoid unwanted surgical menace among patients. This disease needs to be considered in the differential diagnosis.

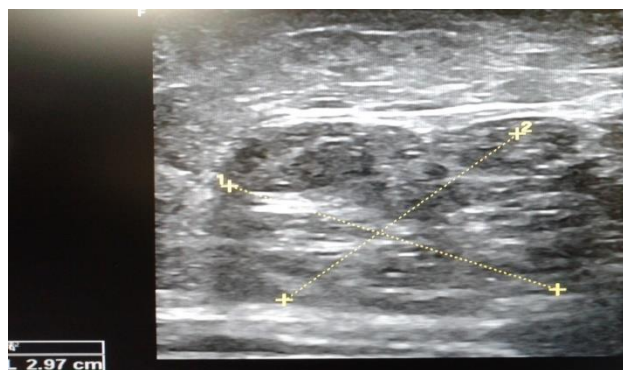


Figure 1: USG findings of the swelling: multiloculated hypoechoic complex mass.

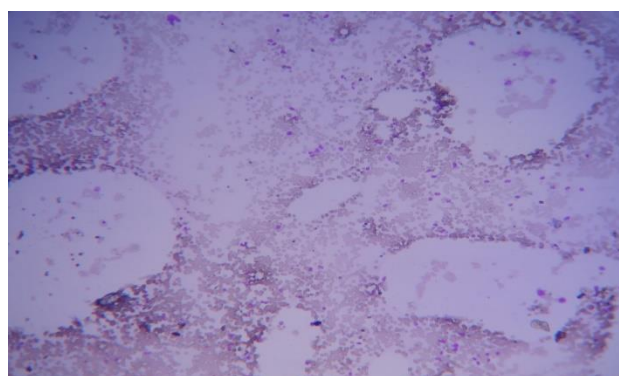


Figure 2: FNAC findings of the swelling: altered blood elements (Leishman, Mag: 10X).

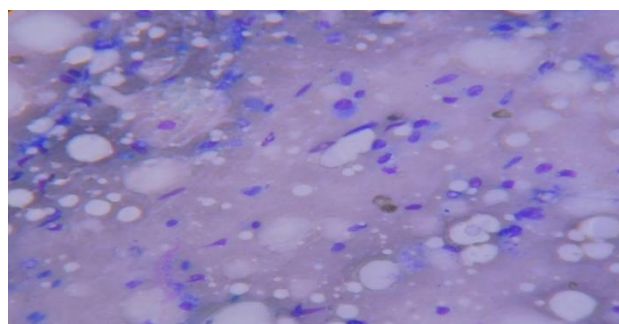


Figure 3: FNAC findings of the swelling: histiocytes, fibroblasts, altered blood elements (Leishman, Mag: 40X).

DISCUSSION

Rectus sheath hematoma occurs when there is bleeding under the sheath of the rectus abdominis muscle. The bleeding may occur when there is tearing in the supplying vessels, or the muscle fibre itself, or platelet dysfunction. It is a definite but confusing clinical entity.

The abdominal wall is bounded by xiphoid process & costal margins superiorly, upper parts of pelvic bones inferiorly and vertebral column posteriorly. The layers are skin, superficial fascia (subcutaneous tissue), muscles & their fasciae, extra-peritoneal fascia, parietal

peritoneum. Rectus abdominis is an important component of abdominal wall. Along the course of the muscle, 3 or 4 transverse fibrous bands intersect it. It is clearly appreciable in individuals with well-developed rectus abdominis muscle. Rectus sheath completely encloses the muscle in its upper 3/4th (both anterior and posterior). But in the lower 1/4th only the anterior surface is covered by the sheath. Posterior wall is free & is in direct contact with transversalis fascia. The vascular supply of rectus abdominis is via superior & inferior epigastric artery and their corresponding veins. The superior epigastric artery, a terminal branch of internal thoracic artery, enters the abdominal wall through the interval between sternal & costal origins of the diaphragm. It perforates the rectus abdominis muscle to anastomose with the inferior epigastric artery, a branch of external iliac artery. The inferior epigastric artery ascends upwards, pierces the transversalis fascia and runs upwards in the plane between rectus abdominis & the posterior lamella of its sheath.¹⁶⁻¹⁸

Weakness of the rectus muscle is responsible for hematoma formation as has been reported in several elderly females & post-caesarean section patients.^{19,20} Klinger et al (1999) in their study described the incidence of rectus sheath hematoma to be around 1.8% among patients admitted to the hospital with abdominal pain.²¹ It is a known complication of abdominal trauma, surgery or excessive strain on abdominal musculature. Vigorous contraction of rectus muscle due to straining during coughing, sneezing, defecation may generate shearing force severe enough to tear the muscle fibres & vessels causing rectus sheath hematoma. Rectus sheath hematoma has been described to have female predominance, affects women especially in 6th to 7th decades of age.²² It has been thought that larger muscle mass in men provide protection against muscle & vessel injury. Our patient was also an elderly female of 56 years old. With rising use of anticoagulant, antiplatelet medications rectus sheath hematoma is occurring even in absence of any obvious precipitating event.^{7,8} Lipid lowering agents like statins (especially atorvastatin) are well known for their muscle related adverse effects.⁹⁻¹¹ Skeletal muscle side effects include muscle cramp, soreness, fatigue, weakness & in rare cases there may be rapid muscle breakdown. Side effects are dose dependant and influenced by advanced age, associated renal/hepatic problem and concomitant medication. Females are especially predisposed to statin related myopathy. Our patient was on drug combination therapies that included atorvastatin, the dose of which was raised recently.

Rectus sheath hematoma presents with swelling abdomen, uneasiness, vague abdominal pain, even acute abdomen.²³ But on close examination there would be no muscle guard, rigidity or reverse tenderness. Fothergill's sign helps to distinguish abdominal wall swelling from intra-abdominal swelling.²⁴ Our patient also presented with complaint of uneasiness & swelling abdomen & there was no history of associated trauma. The swelling

became more prominent when the patient tensed the abdominal wall musculature by raising head in supine position & also by straight leg rising test. Sometimes there may be associated abdominal wall ecchymosis.⁷ Its association with rectus sheath hematoma is not so common. In our patient there was no ecchymosis in abdominal wall.

Although USG constitutes the initial investigation due to its easy availability & portability, CT scan is the diagnostic modality of choice.⁶ CT findings classify rectus sheath hematoma into 3 subtypes (grade I, II, III), which determine management strategy. Grade I: mild; intramuscular, unilateral, does not dissect along fascial planes; mild to moderate pain, no drop in Hb%; does not require hospitalization. Grade II: moderate; bilateral, some dissection between muscle & transversalis fascia, no extension into prevesical space; minor drop in Hb%; require hospitalization. Grade III: more severe; bilateral, large, dissects between transversalis fascia & muscle into the peritoneum and prevesical space; significant drop in Hb%, hemodynamic instability; require blood transfusion.^{7,25,26}

Because rectus sheath hematoma presents as abdominal lump with/without associated pain, it may be confused with several common pathologies like neoplasm, abscess, ulcer, acute abdomen, even hernia.^{5,13,14,15} Our patient was clinically suspected to have omental hernia. Sonographic examination suggested a complex multiloculated cyst. But cytology showed features of old hematoma. Rectus sheath hematoma may undergo autoresolution.^{7,8} Conservative management in the form of bed rest, analgesics, treatment of predisposing conditions, discontinuation of anticoagulant therapy, if any, constitutes the main mode of therapy. Blood transfusion may be required if there is significant fall in haemoglobin level or if hemodynamic compromise is present. When conservative therapy fails to improve patient's condition, operative procedure to evacuate the hematoma &/ ligation of bleeding vessel, vascular embolization may be tried. Rarely rectus sheath hematoma may be fatal with a reported mortality of 4%.¹⁹ Clinicians should be aware of this possibility especially in older patients with associated co-morbid conditions.

CONCLUSION

This is a case of 56 year old elderly female known diabetic, hypertensive with dyslipidaemia on combination drug therapy containing statin group of medication presented with abdominal lump that was clinically diagnosed as omental hernia, but turned out to be a case of spontaneous rectus sheath hematoma.

Here we conclude that rectus sheath hematoma should be considered in the initial differential diagnosis during assessment of abdominal lump. Sonologists need to think of rectus sheath hematoma before providing any complicated diagnosis that may endanger the patient with

unnecessary surgical intervention. Interdisciplinary awareness about this pathology could reduce the incidence of futile laparotomies as conservative therapy is the main modality of treatment in rectus sheath hematoma.

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