

## Recurrent Cough Induced Internal Oblique Hematoma

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### Abstract

*Background:* Abdominal wall hematomas are an uncommon cause of acute abdominal pain and are often misdiagnosed as intra-abdominal pathologies. Elderly individuals and those on anticoagulation are more prone. Rectus sheath hematomas are more common as compared to internal oblique hematomas, which are rare. *Case Report:* We are reporting a rare case of internal oblique hematoma confirmed with contrast enhanced computed tomographic images. The patient was a 60 year old lady, with history of recurrent bouts of cough for one month. She had noticed a sudden onset swelling in the right flank over three day duration. *Conclusion:* In the emergency medicine department sharp clinical skills and early diagnosis of an anterior abdominal wall hematoma could prevent delay in management of such rare conditions. Internal oblique muscle hematoma should be considered as a differential diagnosis of a lateral abdominal swelling, especially in elderly and those on anticoagulation.

**Keywords:** Abdominal Pain; Anterior Abdominal Wall Muscle; Rectus Sheath; Internal Oblique Muscle; Hematoma.

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### Background

Anterior abdominal wall hematomas can present as acute abdominal pain with or without a mass, and are often misdiagnosed as common acute inflammatory intra-abdominal acute pathologies [1,2,3,4]. Rectus sheath hematomas result from rupture of superior or inferior epigastric vessels, and internal oblique hematomas from rupture of branches of lumbar or deep circumflex iliac vessels [2]. They may occur because of trauma, physical exercise, recent surgery, or injection procedures. They may also occur because of increased intra-abdominal pressure from coughing, sneezing, vomiting, or straining during urination, defecation, and labor [1-4]. Other predisposing factors include increased age, arterial hypertension, atherosclerosis, and systemic anticoagulant therapy. Various reports also of athletes with rectus sheath hematomas, post exercise. Most

abdominal wall hematomas occur in the rectus sheath, and a hematoma within the oblique muscle is very rare.

### Case History

A sixty year old lady presented with pain and swelling in the right flank for three days. There was sudden onset pain and swelling in the right flank region. The swelling had increased in size over the past 3 days. There was severe pain which was noncolicky and non-radiating.

There was worsening pain on sitting up from a supine position. There was no history of trauma or fall. There was a recurrent cough over the past 1 month with sudden exacerbation over the past week. She was a diabetic and hypertensive. She underwent a Tubectomy in 1975.

Her pulse rate was 88 per minute and blood pressure was 140/90 mm of mercury. She was pale. No icterus, clubbing, cyanosis, lymphadenopathy or edema.

In the right lumbar region there was a 10 x 12 cm tender, immobile, firm swelling. It was noted in the intramuscular plane. On contracting the anterior abdominal wall muscles, Carnett's sign was positive and the size of the swelling remained the same.

Rest of the systemic examination was within normal limits and the per rectal examination was normal.

Laboratory findings were as follows: Hemoglobin 10 gm %, Creatinine 0.89 mg%, PT 9.9 secs INR 0.91 (10-12.5 SECS), Platelet count 438000/ cumm (1,50,000-4,50,000), Total WBC counts 1360 / cumm (4,000-12,000), Differential counts N72, E1, L18.

Emergency ultrasound abdomen showed a well-defined heterogeneously enhancing hypoechoic lesion with few cystic areas within noted in the

intramuscular plane of the right flank. The lesion measures ~ 17cc, with no demonstrable internal vascularity. This was suggestive of an organized hematoma with no extension into the peritoneal cavity (Figure 1).

To locate source of the hematoma and to appreciate the extent of the hematoma a Computed Tomographic image of the abdomen and pelvis with intravenous contrast was done (Figure 2).

It was suggestive of a partly well-defined hyperdense lesion noted within the internal oblique muscle plane in the right lumbar region with minimal adjoining fluid in the intermuscular plane - suggestive of a hematoma. There was also lobulated soft tissue density lesion with calcifications seen in the left lung base which are suggestive of pulmonary hamartoma.

She was admitted to rule out an expanding hematoma. There was a drop in hemoglobin over the next few days but had stabilized. She was discharged in a stable condition within 4 days.

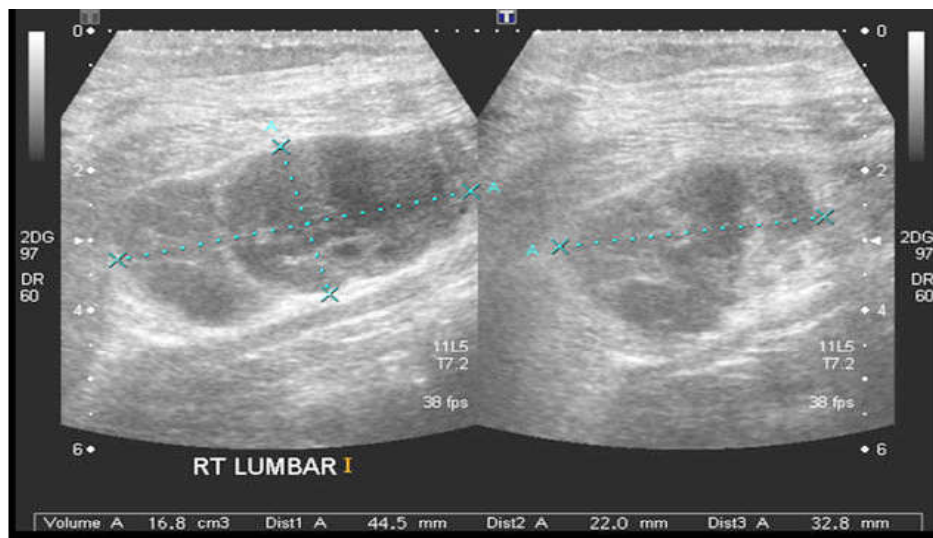


Fig. 1: Ultrasound Abdomen



Fig. 2: CECT Abdomen

## Discussion

Abdominal wall hematomas are one of the causes of acute abdominal pain. They can present with pain with or without a swelling. A rectus sheath hematoma caused by the rupture of the epigastric artery and an internal oblique muscle hematoma caused by a rupture of the deep circumflex iliac artery which is very rare [1-3,5,6]. Abdominal wall hematomas are rare and can be mistaken for several common acute abdominal inflammatory conditions such as appendicitis, sigmoid diverticulitis, perforated ulcers, ovarian cysts, torsion, tumours, or incarcerated inguinal hernias [7].

Lack of knowledge or misdiagnosis can increase the rates of negative laparotomies worsening the morbidity and mortality [3]. Many risk factors have been reported for abdominal wall hematomas. Overcontraction or overstretching of the abdominal muscles by coughing, sneezing, twisting, or vomiting could result in anterior abdominal wall hematomas. Weakness of the vessel wall or a decrease in muscular resistance as a result of hypertension, arteriosclerosis, advanced age, obesity, pregnancy, previous surgery, bleeding tendency, or use of anticoagulants could increase the chances of a hematoma [8]. Atrophy of cutaneous and subcutaneous tissues reducing trauma neutralization and vascular fragility or fat involution limiting external compression during vascular leakage could result in ecchymosis.

In the review of 126 cases of rectus sheath hematoma, it is reported that most patients (69%) were on some forms of anticoagulation therapy and the mean age was 67.9 years [9]. An abdominal wall mass with ecchymosis is the most important diagnostic finding for suspicion of a hematoma.

Ecchymosis can result 4-10 days after the onset of a hematoma. A study by Cherry et al. showed that only 17% abdominal wall hematoma patients present with an abdominal wall ecchymosis [9].

The diagnosis of an oblique muscle hematoma is made by combining medical history, laboratory examination findings, and radiological imaging. Ultrasound (USG) is the first line of imaging followed by computed tomographic scan (CT scan) with intravenous contrast.

USG can be useful as a first-line investigation because it is widely available and portable. In the present case, contrast-enhanced CT findings did not show active bleeding. Hence the artery of the source of bleeding could not be identified.

In a patient with active extravasation of contrast, transarterial catheterisation can be performed [1,2,4].

Grading for anterior abdominal wall hematomas have been designed to predict time to resolution of the hematoma. Grade I is an intramuscular hematoma with an observable increase in muscle size. Grade II is also an intramuscular hematoma but with blood between the muscle and transversalis fascia.

Grade III hematoma may or may not affect the muscle and blood is seen between the transversalis fascia and muscle in the peritoneum and prevesical space that results in a drop in hemoglobin. Grade I hematoma may resolve rapidly within approximately 30 days, whereas Grade II hematomas require 2-3 months and Grade III hematomas require more than 3 months to resolve. Hence outcomes can be explained once diagnosed [10]. Conservative treatment including bed rest and analgesics are appropriate in most patients with abdominal wall hematomas. Although most are self-limiting because the bleeding usually stops without intervention, some patients show significant morbidity and the overall mortality rate is reported to be 4%. Surgical intervention or transcatheter arterial embolization is recommended when conservative management fails. In our case, conservative treatment was administered because CT findings did not suggest active bleeding.

## Conclusion

Internal oblique hematoma is a rare differential for acute abdominal pain, with or without a swelling. Carnett's test is an important clinical skill. Error in diagnosis and management can lead to significant morbidity and mortality. USG and CT abdomen are useful diagnostic tools.

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