

Rectus Sheath Hematoma Presenting with Acute Abdominal Pain after a Severe Cough Episode

Mehmet Tolga Kafadar , İbrahim Teker , İsmail Çetinkaya , Esat Taylan Uğurlu 

Department of General Surgery, Health Sciences University Mehmet Akif İnan Training and Research Hospital, Şanlıurfa, Turkey

ORCID ID of the author: M.T.K.: 0000-0002-9178-7843; İ.T.: 0000-0003-4410-8446; İ.Ç.: 0000-0001-7081-2344; E.T.U.: 0000-0001-5273-1583.

Cite this article as: Kafadar MT, Teker İ, Çetinkaya İ, Uğurlu ET. Rectus Sheath Hematoma Presenting with Acute Abdominal Pain after a Severe Cough Episode. *Cyprus J Med Sci* 2018; 1: 36-8.

Rectus sheath hemorrhage is a rare and often overlooked cause of acute abdominal pain. The use of appropriate imaging modalities along with rapid history learning and careful physical examination will ensure accurate diagnosis and avoid unnecessary laparotomy. Rectus sheath hematoma is often self-limited; therefore, the treatment is conservative. Surgical treatment is unavoidable in large and complicated hematomas with hemodynamic dysfunction. In this article, we present the case of a 65-year-old patient who was admitted to emergency service because of severe abdominal pain after cough episode. Conservative treatment was applied to the patient who had rectus sheath hematoma.

Keywords: Acute abdominal pain, rectus sheath hematoma, conservative treatment

INTRODUCTION

Rectus sheath hematoma (RSH) is a rare condition and is the result of the rupture of the rectus muscle fibers or the rupture of the epigastric vessels in the anterior rectus abdominis sheath and the accumulation of blood in the rectus sheath (1). It is rarely spontaneous, although it is usually has an underlying cause such as trauma, anticoagulant therapy, post-abdominal surgery, severe cough, hematologic diseases, physical exercise, pregnancy, and subcutaneous drug injections. Hematomas under the semicircular canal of the abdomen may result in a clinical picture similar to the acute abdomen clinic, leading to the irritation of the peritoneum due to the weakness of the posterior rectus sheath. Management is usually conservative because the natural course of this condition is self-limiting. Red blood cell transfusion is recommended in the presence of hemodynamic compromise or significant decrease in hemoglobin level. Invasive procedures or surgery are rarely needed for securing hemostasis and stabilizing hemodynamics. Surgical management is associated with significant morbidity due to advanced age and multiple comorbidities in these patients (2). In this article, an RSH case has been reported as a rare reason of acute abdominal pain, which appears as the result of severe coughing.

CASE PRESENTATION

A 65 year-old female patient was admitted to the emergency department because of a sudden onset of abdominal pain, following 8 hours of coughing crisis. She had history of diabetes mellitus, hypertension, and chronic obstructive pulmonary disease. The patient was on oral antidiabetic, antihypertensive, and bronchodilator therapy. She had no history of trauma, post-surgery, or anticoagulant medication. At the time of admission, blood pressure was 100/60 mmHg, pulse rate was 96/min, and body temperature was 36.7°C. Physical examination revealed periumbilical area, and right upper quadrant showed tenderness and defenses. Intestinal sounds were normoactive. Laboratory tests results revealed white blood cell count: 23,400/mm³, hemoglobin: 12.4 g/dL, platelet count: 313,000/μL, C-reactive protein: 8.3 mg/dL, glucose: 349 mg/dL, international normalized ratio: 0.93 (range, 0.8-1.2), prothrombin time: 11.9 s (normal range, 10.5-15.5 s), activated partial thromboplastin time: 19.4 s (normal range, 22-36 s); other biochemical parameters were also found to be normal. Abdominal ultrasonography (US) revealed hypoechoic image in the abdominal wall, which extended from the right upper quadrant to midline. Computed tomography (CT) revealed hyperdense area of 7x5 cm in diameter, hematoma-compatible appearance, hemorrhage extending to the lumbar region in the right muscle tissue, densification compatible with edema, and dirty and diffuse echogenic areas in the abdominal anterior wall in the right rectus abdominal muscle (Figure 1a, b). Emergency surgical intervention was not performed on the patient who was interned with the current findings.

The patient was administered 1 g ceftriaxone intravenously (two times a day). Fluid and analgesic treatment was started, and the patient was followed up closely for bleeding. There was no decline in hemogram values during the follow-up, hemodynamics was stable, and no blood replacement was performed. During the follow-up, extensive ecchymosis areas were observed in the abdominal skin (Figure 2a, b). Four days after the medical treatment, the patient's complaints had ended, and she was discharged with good health. Fifteen days later, the patient arrived at the outpatient's clinic for control and it was observed that the ecchymosis in the abdominal region had decreased. Informed consent was obtained from the patient.

DISCUSSION

RSH is an uncommon but clinically significant disease that can mimic acute abdomen. While different causes of acute abdominal pain are being investigated in the emergency service, it is often not obvious and may lead to unnecessary surgical interventions. It is usually seen in women and in their 50s (3). It accounts for 2% of the unexplained abdominal pain (4). It is mostly localized at the lower abdominal quadrant and at the right side. The rectus abdominal muscle exhibits significant dimensional changes during severe contraction and relaxation cycles due to

its anatomical location and function. Tearing can occur in these superior and inferior epigastric vessels due to these severe dimensional changes (5).

Findings that are detected during the application are usually abdominal pain, ecchymosis in the abdominal wall, mass in the abdomen, decrease in hemoglobin values, nausea, vomiting, peritoneal irritation, and fever (6). Early diagnosis is essential to prevent unnecessary surgical interventions. US, CT, and magnetic resonance imaging are various methods used for diagnosis.

Although US is the first choice for diagnosis owing to its high sensitivity rates and easy and quick access, it is sometimes difficult to distinguish intra-abdominal lesions from extra-abdominal lesions in the ultrasound report. On the other hand, CT is a

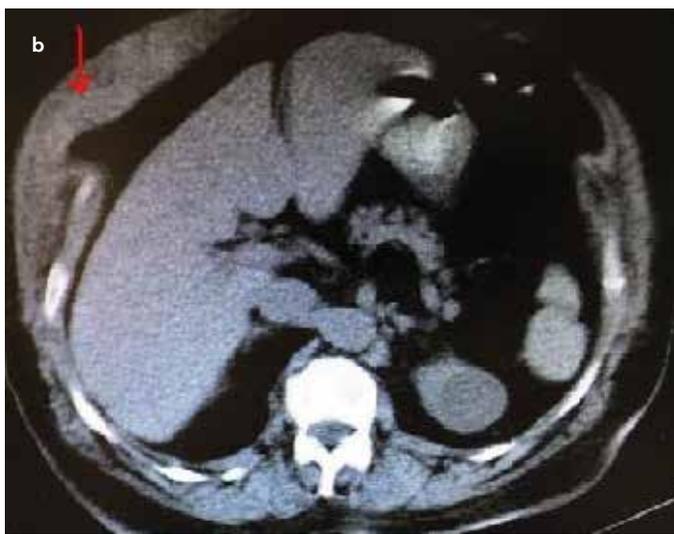
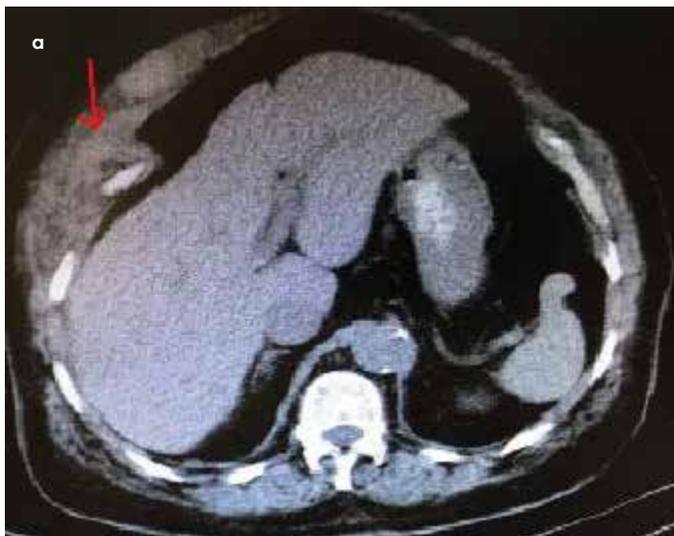


FIGURE 1. a, b. Computed tomography images of the patient



FIGURE 2. a, b. Image of diffuse ecchymosis in the abdominal skin of the patient on the third day of follow-up

much superior imaging method for assessing hematoma placement, extent, and size. It is possible to classify hematomas by means of tomographic imaging. In the Type 2 hematoma, bleeding is mild and only within the muscle. In the Type 2 hematoma, hematoma is in the muscle but bleeding occurs in the space between the facial transversalis and the muscle. On the other hand, in type 3 hematoma, hemorrhage is severe and the fascia is located between the transversalis and the muscle and in front of the peritoneum and vesica urinaria. Type 2 and 3 RSH require hospitalization (7). It may take approximately 3 months for hematomas to disappear in these patients. The hematoma in our case was classified as Type 2.

Hemodynamically, conservative therapy is fundamental in stable patients. Generally, conservative treatment is available for most patients by means of resting, fluid replacement, analgesia, and blood and blood component transfusion. Bleeding in many cases limits itself. If conservative treatment is not successful, surgical treatment may be chosen; however, mortality rates are high (1). In patients with active bleeding, the hematoma is drained with surgical treatment and the bleeding vessels are ligated (8). Embolization (coil) in patients unresponsive to conservative treatment may be an alternative (9). In RSH, complications such as infection, acute renal failure, hypovolemic shock, myocardial infarction, and mesenteric ischemia can be seen in rare cases. Morbidity and mortality rates of patients who receive anticoagulant treatment, patients with larger hematomas dimensions, elderly patients, and patients with multiple comorbidities are higher. We treated our patient using conservative treatment and analgesia, and we did not encounter any complications (10).

Although RSH is a rare condition, it may cause unnecessary surgical interventions because it is often mixed with acute abdominal pain. Careful physical examination and appropriate imaging modalities allow accurate diagnosis and prevent unnecessary surgical interventions with the patient's anticoagulant use, severe cough, and subcutaneous injections. Management is usually conservative, as the natural course of this condition is self-limiting.

Informed Consent: Informed consent was obtained from the patient.

Peer-review: Externally peer-reviewed.

Author contributions: Concept - M.T.K., İ.T.; Design - M.T.K., İ.Ç.; Supervision - M.T.K., E.T.U.; Resource - M.T.K.; Materials - M.T.K., İ.T., İ.Ç.; Data Collection and/or Processing - M.T.K., İ.T., İ.Ç. Analysis and/or Interpretation - M.T.K., E.T.U.; Literature Search - M.T.K.; Writing - M.T.K.; Critical Reviews - M.T.K., E.T.U.

Conflict of Interest: No conflict of interest was declared by the authors.

Financial Disclosure: The authors declared that this study has received no financial support.

REFERENCES

1. Aktürk OM, Kayılıoğlu Sİ, Aydoğan İ, Dinç T, Yildiz B, Cete M, et al. Spontaneous Rectus Sheath Hematoma: an Overview of 4-Year Single Center Experience. *Indian J Surg* 2015; 77: 1219-21. [\[CrossRef\]](#)
2. Sheth HS, Kumar R, DiNella J, Janov C, Kaldas H, Smith RE. Evaluation of Risk Factors for Rectus Sheath Hematoma. *Clin Appl Thromb Hemost* 2016; 22: 292-6. [\[CrossRef\]](#)
3. Changal KH, Saleem S, Ghous G. Rectus sheath haematoma: a rare masquerader for abdominal pain. *BMJ Case Rep* 2017; 13: 2017. [\[CrossRef\]](#)
4. Cherry WB, Mueller PS. Rectus sheath hematoma: review of 126 cases at a single institution. *Medicine (Baltimore)* 2006; 85: 105-10. [\[CrossRef\]](#)
5. Luhmann A, Williams EV. Rectus sheath hematoma: a series of unfortunate events. *World J Surg* 2006; 30: 2050-5. [\[CrossRef\]](#)
6. Ünlüer EE, Kaykısız EK. An unanticipated diagnosis with bedside ultrasonography in patients with acute abdominal pain: rectus hematoma. *Pan Afr Med J* 2017; 27: 19. [\[CrossRef\]](#)
7. Fitzgerald JE, Fitzgerald LA, Anderson FE, Acheson AG. The changing nature of rectus sheath haematoma: case series and literature review. *Int J Surg* 2009; 7: 150-4. [\[CrossRef\]](#)
8. Galyfos G, Karantzikos G, Palogos K, Sianou A, Filis K, Kavouras N. Spontaneous rectus sheath hematoma in the elderly: an unusual case and update on proper management. *Case Rep Emerg Med* 2014; 2014: 675678. [\[CrossRef\]](#)
9. Smithson A, Ruiz J, Perello R, Valverde M, Ramos J, Garzo L. Diagnostic and management of spontaneous rectus sheath hematoma. *Eur J Intern Med* 2013; 24: 579-82. [\[CrossRef\]](#)
10. Dağ A, Ozcan T, Türkmenoğlu O, Colak T, Karaca K, Canbaz H, et al. Spontaneous rectus sheath hematoma in patients on anticoagulation therapy. *Ulus Travma Acil Cerrahi Derg* 2011; 17: 210-4. [\[CrossRef\]](#)