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Conservative Treatment of Rectus Sheath Hematoma After Diagnostic Laparoscopy

Tanısal Laparoskopi Sonrası Rektus Kılıf Hematomunun Konservatif Tedavisi

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Abstract

This case report aims to present rectus sheath hematoma's diagnosis and conservative treatment process after diagnostic laparoscopy in a patient with right lower quadrant pain. A sixty-seven-year-old lady was admitted with abdominal pain, right inguinal pain, and nausea for about five days. She had coronary artery disease followed by acetylsalicylic acid. On physical examination of the abdomen, there was tenderness and defence on deep palpation. No pathology was seen on laboratory parameters, ultrasonography (USG) and computed tomography (CT). Despite medical treatment, the patient's complaints did not improve, so a laparoscopic appendectomy was performed. A mass was detected in the left lower abdominal wall of the patient at the sixth postoperative hour. The control hemogram level of the patient was 10.8 g/L, a 3.7 g/L haemoglobin decrease compared to the preoperative period. A left rectus sheath hematoma was detected on CT. The hematoma was treated conservatively. On the 12th day of her hospitalisation, the patient with a haemoglobin value of 10.9 g / L was discharged without complications.

Keywords: Abdomen rectus muscle, appendectomies, hematoma, surgical diagnostic technique

Özet

Bu olgu sunumu, sağ alt kadran ağrısı olan bir hastada tanısal laparoskopi sonrası gelişen rektus kılıf hematomu tanısını ve konservatif tedavi sürecini sunmayı amaçlamaktadır. Altmış yedi yaşında bayan hasta yaklaşık beş gündür karın ağrısı, sağ kasık ağrısı ve mide bulantısı şikayetleriyle başvurdu. Hastanın asetilsalisilik asit ile takip edilen koroner arter hastalığı vardı. Karın muayenesinde derin palpasyonda hassasiyet ve defans mevcuttu. Laboratuvar parametrelerinde, ultrasonografide (USG) ve bilgisayarlı tomografide (BT) patoloji görülmedi. Hastanın şikayetlerinin medikal tedaviye rağmen düzelmemesi üzerine laparoskopik apendektomi yapıldı. Hastanın postoperatif altıncı saatinde sol alt karın duvarında kitle tespit edildi. Hastanın kontrol hemogram düzeyi 10,8 g/L, preoperatif döneme göre 3,7 g/L hemoglobin düşüşü, idi. BT'de sol rektus kılıf hematomu tespit edildi. Hematom konservatif olarak tedavi edildi. Yatışının 12. gününde hemoglobin değeri 10,9 g/L olan hasta komplikasyonsuz olarak taburcu edildi.

Anahtar Kelimeler: Apendektomiler, cerrahi tanı tekniği, hematom, karın rektus kası

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1. Introduction

Rectus sheath hematoma (RSH) is a condition that can be confused with acute abdomen and is difficult to diagnose because it is rare (Celik et al., 2016). RSH develops a rupture of epigastric vessels or rectus muscle. The general complaints of the patients are abdominal pain and the presence of Fothergill's sign (abdominal mass does not cross the midline and does not displace with rectus flexion) and Carnett's sign (pain does not change or increases in intensity when the abdominal muscles are stretched) on examination are supportive findings for rectus sheath hematoma; however, patients may not always have a palpable mass.

Many predisposing factors cause RSH. Most are spontaneous bleeding due to using prophylactic/therapeutic anticoagulants due to COVID-19 in recent years (Kalayci, 2021; Linhares et al., 1999). Severe cough that increases intra-abdominal pressure is the most common non-traumatic mechanism, especially in lung diseases such as asthma, bronchial, and pneumonia (Golcuk et al.). Other rare risk factors include blunt trauma, advanced age, abdominal surgery and pregnancy (Ozucelik et al., 2005). RSH can be seen after laparoscopy and laparotomy (Abudames et al., 2017; Agrawal et al., 2019; Celik et al., 2016).

This case report aims to present rectus sheath hematoma's diagnosis and treatment process after diagnostic laparoscopy in a patient with right lower quadrant pain.

2. Case Report

A sixty-seven-year-old lady was admitted to the general surgery outpatient clinic with abdominal pain, right inguinal pain, and nausea for about five days. The patient has not described any previous pain of a similar nature. She had hypertension, coronary artery disease, and diabetes mellitus and followed up with anti-hypertensive drugs, acetylsalicylic acid (100 mg tablet per day), and oral anti-diabetic drugs. She did not have any other disease.

On physical examination, her vital findings were as follows: blood pressure: 148/88 mm Hg, pulse rate: 87 beats per minute, oxygen saturation on room air: 95%, and body temperature: 37.1^{o} Celsius. On physical examination of the abdomen, there was tenderness and defence on deep palpation. Other system examinations were unremarkable, including the digital rectal examination.

In the laboratory, all patient parameters, including hemogram (14.5 g/L), were unremarkable. No pathology was seen on ultrasonography (USG) and computed tomography (CT). She was hospitalised for treatment. Oral feeding was stopped, and intravenous fluid replacement was started. Ceftriaxone 1 gr vial every 12 hours was started. Diagnostic laparoscopy was planned for the patient after the patient's complaints did not resolve despite medical treatment, and after a 5-day anticoagulant treatment was discontinued. During surgery, an inflamed, hyper-vascularized, and oedematous appendix vermiformis was seen, and a laparoscopic appendectomy was performed. No additional pathology was seen during surgery.

The patient was followed up service during the postoperative period. The patient had a left abdominal wall mass on the sixth postoperative hour. The control hemogram level of the patient was 10.8 g/L.

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With the preliminary diagnosis of rectus sheath hematoma, CT was performed on the patient, and a left rectus sheath hematoma measuring 180*75*50 mm was detected on CT. The patient was taken to the intensive care unit for follow-up **(Figures 1,2 and 3)**.

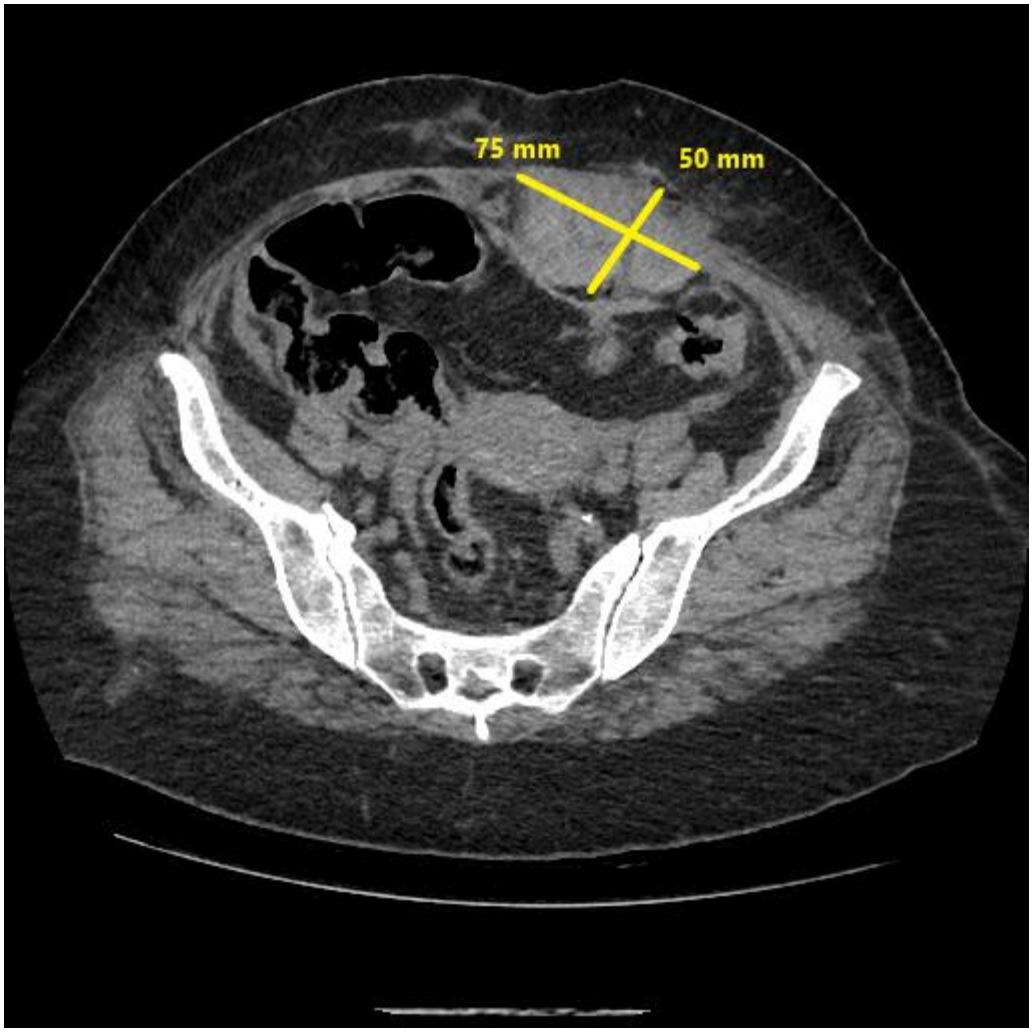

Figure 1. Yellow lines indicate the hematoma sizes and margins on the axial plane of the CT scan.

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Figure 2. Yellow lines indicate the hematoma sizes and margins on the coronal plane of the CT scan.

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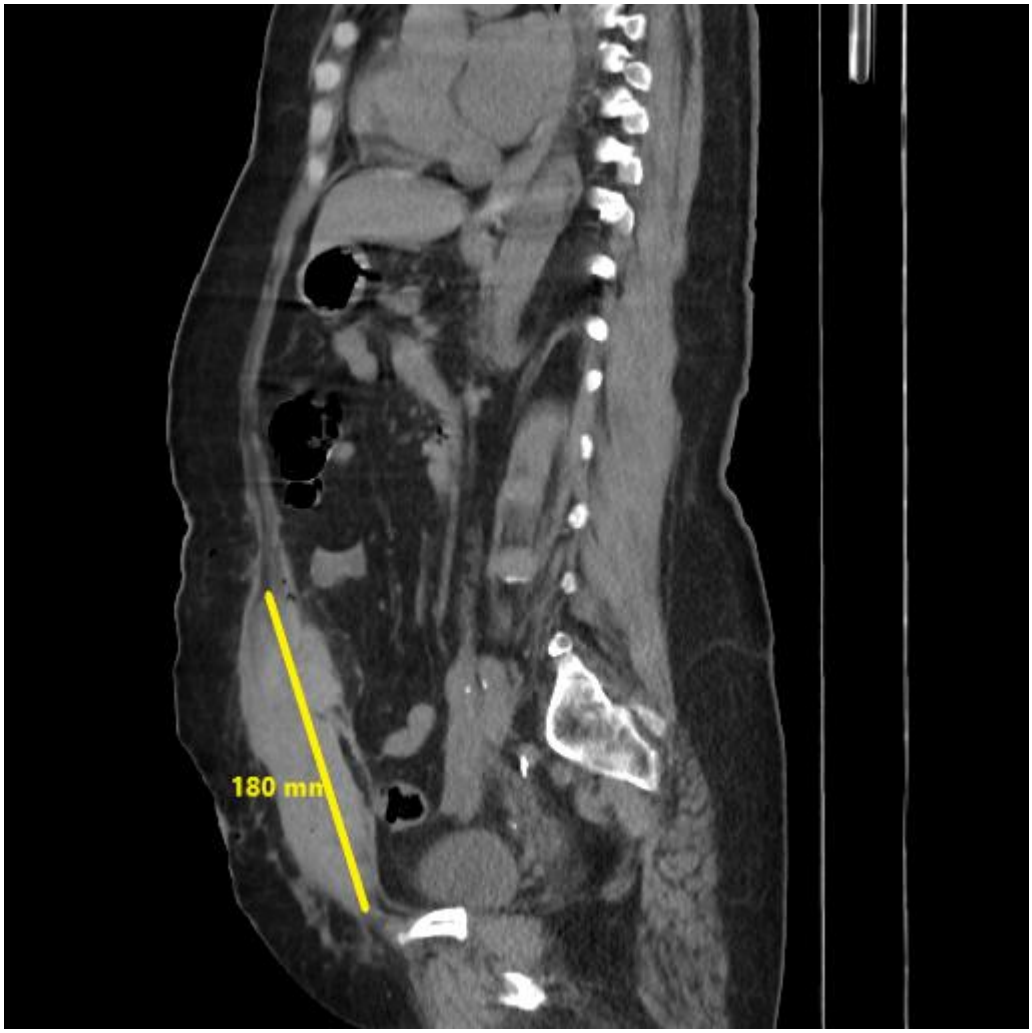

Figure 3. The yellow line indicates the largest hematoma size on the sagittal plane of the CT scan.

Oral intake was stopped, and vital signs monitoring and fluid replacement were started. Hemogram was followed up four times a day. Tranexamic acid 250 mg/5 mL (two vials per day) and vitamin K1 10 mg/1 ml vial (one vial per day) was started, and this treatment continued for 3 days. Abdominal examination was done daily. During follow-up, 4 units of erythrocyte replacement were required due to a haemoglobin decrease. On the 4th day of the intensive care follow-up, the patient was transferred to the service because there was no decrease in haemoglobin value. On the 12th day after admission, the patient was discharged because her haemoglobin value, which was 10.9 g/L at that point, had not decreased. The patient's abdominal examination and control haemoglobin values were unremarkable on the 15th and 90th days after discharge.

3. Discussion

Rectus sheath hematoma (RSH) can be confused with acute abdomen. RSH is challenging to diagnose because it is rare and can generally regress with conservative follow-up; however, it is a condition that may require surgical treatment. Anticoagulant drugs were the most common causes of rectus sheath hematoma in the literature (Sheth et al., 2016). Haematological diseases, trauma, physical exercise, cough, sneezing, pregnancy and hypertension are among the other etiological

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causes (Berna et al., 2000). Apart from these etiological factors, cases that developed RSH after laparoscopy and laparotomy have been reported. In the literature, there were cases of RSH developing after laparoscopic hemicolectomy (Procacciante et al., 2009), after laparoscopic appendectomy (Abudames et al., 2017), during laparotomy for gynaecological diseases (Celik et al., 2016), and after laparoscopic surgery after debulking surgery for ovarian malignancy (Agrawal et al., 2019). In the present case, RSH was presented after diagnostic laparoscopy in a patient with right lower quadrant pain.

RSH usually presents with abdominal pain and the presence of a palpable mass in the abdomen. Abdominal pain increases with abdominal movements, coughing and breathing. On physical examination, Fothergill's sign, characterised by a painful mass in the abdominal wall, can be seen when the patient raises their head without support (Isik et al., 2015). Abdominal USG and CT diagnose other intra-abdominal pathologies in patients with rectus hematoma (Luhmann & Williams, 2006). Although USG is helpful in the diagnosis, its sensitivity rate varies between 70% and 90%. CT is the gold standard in the differential diagnosis of other intra-abdominal pathologies, and its sensitivity and specificity are 100% (Salemis et al., 2010). In the present case, the patient had a palpable painful mass and a 3.7 g/L haemoglobin decrease compared to the preoperative period. With the pre-diagnose of RSH, we immediately performed CT both for the diagnosis and to rule out other causes of abdominal pain.

In most patients, conservative treatment with the elimination of the predisposing factor is sufficient. Discontinuation of the anticoagulant drugs, correction of coagulation disorders with vitamin K, fresh frozen plasma and protamine sulphate and blood replacement are recommended, especially in cases leading to severe anaemia (İliklerden & Kalayci, 2021). Since the decrease in the pressure in the hematoma site may lead to more severe bleeding, surgical intervention should be considered in patients with ongoing bleeding who cannot achieve hemodynamic stability despite blood transfusion. Vascular embolisation with a catheter, evacuation of hematoma with drainage with USG, or vascular ligation with laparotomy is among the surgical options that can be applied (Berná-Serna et al., 2005). USG-guided hematoma drainage should always be considered a minimally invasive option in these patients, as serious complications such as renal failure due to intra-abdominal compartment syndrome and small bowel ischemia may occur due to advanced hematomas (Trujillo et al., 2012). Surgical intervention was not required in the patient we presented, and the case was managed with conservative treatment.

4. Conclusion

Rectus sheath hematoma is a serious cause of abdominal pain that can lead to fatal results, and most cases benefit from conservative treatment. Both laparoscopy and laparotomy can cause rectus sheath hematoma. Regardless of the aetiology, the primary treatment mechanism is the elimination of the aetiology causing hematoma, frequent hemogram follow-up and necessary medical support. However, surgical intervention is inevitable in hemodynamically unstable patients despite conservative treatment.

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Patient's Consent

Written consent was approved by the patient.

Authors Contributions

Topic selection: TK; Design: TK, MK; Planning: MK; Data collection: TK, MK; Data analysis: TK, MK; Article writing: TK; Critical review: TK, MK.

Conflict of Interest

No conflict of interest was declared by the authors.

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