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Case Report

A rare complication of inguinal hernia surgery: Iliopsoas hematoma

Iliopsoas Hematoma

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Abstract
This case report presents an iliopsoas hematoma that developed after elective inguinal hernia surgery with the aim of evaluating the diagnosis and treatment process of the patient. A 75-year-old man underwent left inguinal hernia surgery. At the ninth hour after surgery, his blood pressure was 78/48 mmHg and his heartbeat was 135 beats/min. A left iliopsoas hematoma approximately 150 mm wide was seen by computed tomography. Monitoring of vital signs and fluid replacement were begun in the intensive care unit. As the patient's hemoglobin level was 5.8 g/dL, two units of erythrocyte suspension were administered. He was discharged after his hemoglobin level increased to 9.6 g/dL and his vital signs were stable on the seventh postoperative day.

Keywords
Iliopsoas hematoma, hemodynamic shock, inguinal hernia surgery, Lichtenstein repair, conservative treatment.

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Introduction

Inguinal hernia repair is an extremely common operation performed by general surgeons. Nearly 800,000 inguinal hernia repairs are performed each year in the United States. The purpose of inguinal hernia repair is to close the hernia defect and provide tension-free repair. These aims can be met with either open surgery or laparoscopic surgery. Prosthetic material is used for tension-free hernia repair. On the other hand, in cases where mesh cannot be used, it is appropriate to perform a tension-free repair with suture materials [1].

Inguinal hernias are divided into three categories as direct, indirect, and femoral hernias according to where they originate. Patients present with bulging and pain in the inguinal area. Diagnosis of inguinal hernia is primarily made by clinical examination, and superficial ultrasonography (USG) is also helpful in diagnosis. Surgical repair is recommended for all symptomatic inguinal hernias to prevent possible complications such as hematoma, seroma, and scrotal complications.

The rate of hematoma after inguinal hernia surgery varies between 5.6% and 16% [2]. Localized hematomas may occur in the ilioinguinal region, or they may be large enough in size to fill the retroperitoneal and scrotal area and require reoperation. It is important to make a timely surgical decision based on clinical findings of large hematomas.

This case report presents the case of a 75-year-old man who developed an iliopsoas hematoma that was treated conservatively after a left inguinal hernia with Lichtenstein inguinal hernia repair.

Case Report

A 75-year-old man with a history of hypertension was admitted to Department of General Surgery of Erzurum Regional Education and Research Hospital in May 2021 with left groin pain and bulging for five years. The patient had no history of surgery or anticoagulant therapy use. On evaluation, his vital findings were as follows: blood pressure, 135/82 mmHg; pulse rate, 84 beats/min (bpm); respiratory rate, 16 breaths/min; temperature, 37.0 °C; oxygen saturation on room air, 95%-97%. Upon physical examination of both inguinal regions, there was only a left-side inguinal hernia without scrotal pathology. The contralateral inguinal side had no pathology. In addition, abdominal physical examination was benign. The results of laboratory tests were unremarkable before surgery (hemoglobin: 12.4 g/dL). After all operative preparations, the patient underwent elective inguinal hernia operation. Upon exploration, he was diagnosed with a 3B hernia according to the Nyhus classification (Table 1). Lichtenstein inguinal hernia repair was performed. A drainage catheter was inserted into the operation area. After the operation, he was admitted for follow-up in the service.

At the ninth hour of the patient's follow-up, his blood pressure was 78/48 mmHg and his heart rate was 135 bpm. An abdominal exam and inguinal area exam both revealed no pathology. At that point, his hemoglobin level had decreased to 5.8 g/dL. There was no discharge from the drainage catheter and there was no sign of intraabdominal hemorrhage by bedside USG. A computed tomography (CT) scan of the abdomen and pelvis showed a left iliopsoas hematoma approximately 150 mm wide without contrast extravasation (Figure 1 and Figure 2).

The patient was admitted to the intensive care unit for follow-up. Fluid replacement and monitoring of vital signs were begun. As the patient's hemoglobin was 5.8 g/dL, two units of erythrocyte suspension were administered. Abdominal and inguinal region examinations were performed daily.

On the seventh day after admission, the patient was discharged because his hemoglobin level of 9.6 g/dL had not decreased again and his vital signs were stable. From the moment of diagnosis to discharge, the patient required no surgical or interventional procedures.

Table 1. Nyhus classification of inguinal hernias.

Type of Hernia	Anatomical Defect
· Type 1	Indirect hernia - normal internal ring
· Type 2	Indirect hernia - enlarged internal ring
· Type 3A	Direct hernia - posterior wall defect
· Type 3B	Large indirect hernia - posterior wall defect
· Type 3C	Femoral hernia
· Type 4	Recurrent hernia

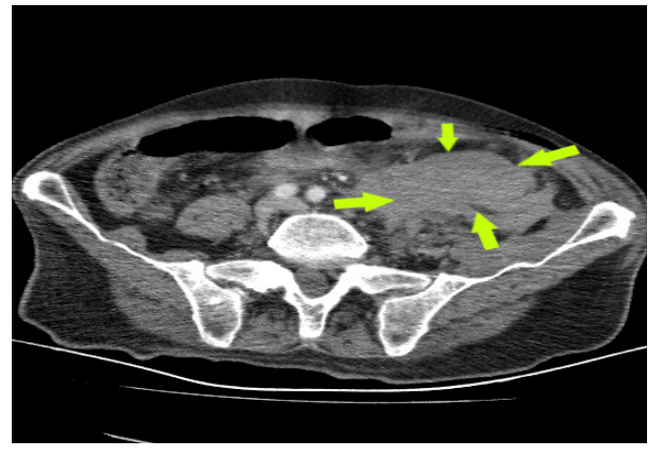

Figure 1. A 75-year-old man with iliopsoas hematoma after inguinal hernia surgery (arrows show the hematoma area).

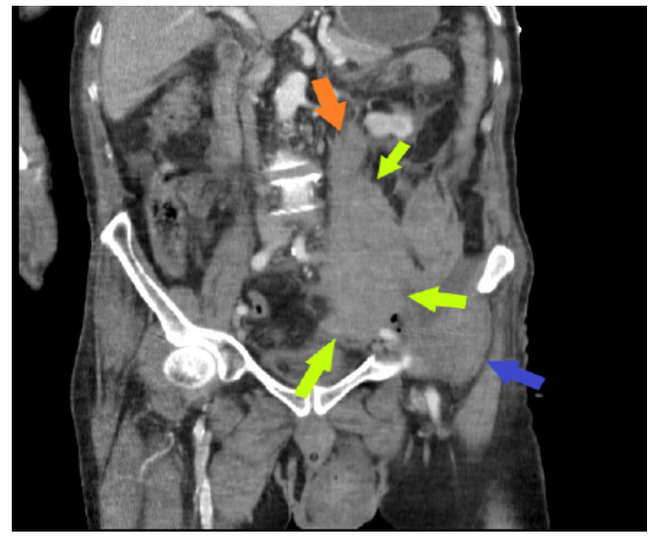

Figure 2. On a coronal CT section, iliopsoas hematoma is seen (yellow arrows show iliopsoas hematoma, orange arrow shows iliopsoas muscle, and blue arrow shows inguinal hematoma).

Discussion

Bleeding complications may occur during or after inguinal hernia repair surgeries. The rate of hematoma after inguinal hernia surgery varies between 5.6% and 16% [3]. Hematoma may develop after both non-mesh repairs and mesh repairs in inguinal hernia operations. These hematomas are mostly detected in the inguinal region or the scrotum. However, in the English-language literature, some case reports have presented iliopsoas hematomas after inguinal hernia operations. Although hemophilia, anticoagulant use, and trauma are among the main causes, such hematomas develop spontaneously in many cases and no etiology can be identified [4]. As in our case, early detection of the hematoma is life-saving. Fatal outcomes can occur in delayed or misdiagnosed cases.

Iliopsoas hematoma is a rare condition that is difficult to treat. Depending on the amount of bleeding, it may present with abdominal bloating and pain, findings due to femoral nerve compression, or hemorrhagic shock with severe hypotension and tachycardia [5]. In doubtful cases, abdominal USG is the first examination to be performed as a cheap, easily accessible, and non-invasive method allowing for quick preliminary evaluations. In the presence of suspicious appearance of hematoma on USG, abdominal CT is a specific imaging method to confirm the diagnosis [6]. Contrast-enhanced abdominal and pelvic CT provides information about contrast extravasation and all intraabdominal structures. However, in cases in which contrast is contraindicated, non-contrast CT is also helpful. In our case, iliopsoas hematoma manifested itself with hemorrhagic shock findings in a patient who had no history of anticoagulant use, and the diagnosis was confirmed by abdominal CT.

There are different treatment methods for iliopsoas hematoma, including conservative treatment, embolization, and surgery. Conservative treatment is the first treatment method preferred as a precaution against the additional risks of surgery. The vital signs of the patient should be checked closely. In addition, it is important to stop the use of blood thinners immediately. Both the abdomen and the inguinal region should be examined each day and the hemoglobin levels of the patient should be checked frequently (every six hours in the immediate days after the diagnosis of iliopsoas hematoma). If patients have hemoglobin levels below 7 g/dL, the aim should be to increase the value above that level if possible and maintain it. The need for erythrocyte suspension should be evaluated according to the hemoglobin level [7]. Although there were signs of hemorrhagic shock in our case, since there were no neurological findings, conservative treatment was applied in the first step and the patient's bleeding was controlled without the need for surgical intervention.

Embolization may be used in selected cases, requiring specialty treatment [8]. Embolization may be useful for hemodynamically stable patients with persistent bleeding. However, in complicated and unstable cases, and in cases in which neurological symptoms develop due to hemorrhagic shock, surgical treatment should be considered first. The main purpose of hematoma surgery is to ligate the actively bleeding vessel.

In conclusion, iliopsoas hematoma after inguinal hernia surgery is a rare complication. It can be seen after open surgery or laparoscopic surgery. Iliopsoas hematoma should be kept in mind in cases of unexplained hypotension, especially in the postoperative period without ecchymosis or swelling in the scrotum or incision line. After ensuring the hemodynamic stability of the patient, imaging modalities such as USG and CT are helpful in diagnosis. After the diagnosis of iliopsoas hematoma is confirmed, conservative treatment, embolization, or surgery should be planned according to the patient's hemodynamic status. The most important factor to be considered is early diagnosis of the hematoma. If the diagnosis of iliopsoas hematoma is delayed or missed, life-threatening complications may ensue.

Scientific Responsibility Statement

The authors declare that they are responsible for the article's scientific content including study design, data collection, analysis and interpretation, writing, some of the main line, or all of the preparation and scientific review of the contents and approval of the final version of the article.

Animal and human rights statement

All procedures performed in this study were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. No animal or human studies were carried out by the authors for this article.

Conflict of interest

None of the authors received any type of financial support that could be considered potential conflict of interest regarding the manuscript or its submission.

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