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Rectus Sheath Hematoma: A Case Report

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Abstract: ***Rectus sheath hematoma (RSH) is an often-overlooked yet potentially life-threatening condition that may mimic other causes of acute abdomen, especially in post-surgical patients. In my view, this case shines a spotlight on how subtle signs, if not picked up early, can spiral into critical complications. Here, a 20-year-old postpartum woman developed a massive RSH following a lower segment caesarean section (LSCS), initially presenting with vague yet alarming symptoms like severe abdominal pain, pallor, hypotension, and tachycardia. What makes this case particularly noteworthy is the way clinical vigilance, supported by timely ultrasonography, led to the life-saving decision to re-explore surgically, revealing a significant hematoma extending both above and below the rectus sheath. It is evident that, despite advancements in diagnostic imaging, clinical judgment still plays a crucial role, especially when time is of the essence. This raises another important point RSH, although rare, is not entirely unexpected in the context of abdominal surgeries, and medical practitioners must maintain a high index of suspicion when faced with unexplained hemodynamic instability. Taking this further, the report underlines that even a routine postoperative course can take an unexpected turn, demanding proactive monitoring and timely intervention. In summary, this case not only highlights the diagnostic challenges but also reinforces the value of early recognition and prompt surgical management in improving patient outcomes, reminding us that sometimes, what lies just beneath the surface can make all the difference.***

Keywords: rectus sheath hematoma, abdominal pain, caesarean section complication, surgical re-exploration, patient recovery

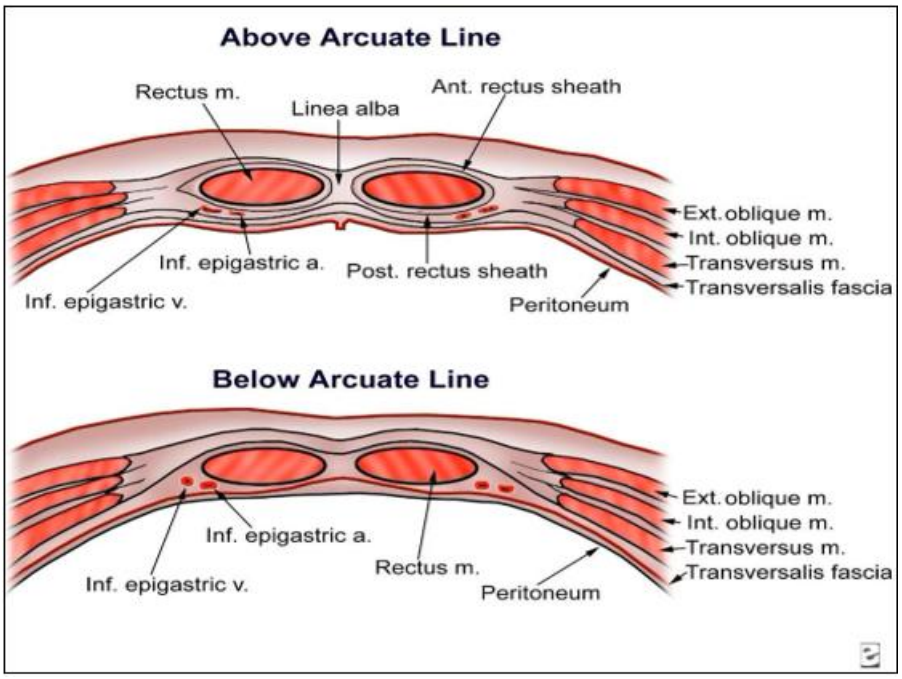
1. Introduction

Rectus sheath hematoma (RSH) is an uncommon and often clinically misdiagnosed cause of abdominal pain. It is the result of bleeding into the rectus sheath from damage to the superior or inferior epigastric arteries or their branches or from a direct tear of the rectus muscle.

The rectus abdominis muscles are two parallel vertically aligned muscles. The arcuate line is located about 5 cm below the umbilicus and functionally separates the rectus sheath into superior and inferior portions. Above the arcuate line, the aponeuroses of the external oblique, the internal oblique, and the transversalis muscles invest the rectus muscle. Three to four transverse tendinous inscriptions attach the rectus muscle to the enveloping fascia, usually above the arcuate line. Below the arcuate line, the aponeuroses remain intact anteriorly, but only the weak transversalis fascia and peritoneum separate the muscle mass from the abdominal viscera posteriorly.

The arterial supply to the rectus sheath is derived from the superior and inferior epigastric arteries. The inferior epigastric artery originates from the external iliac artery. It rises from the inguinal ligament to enter the posterior rectus sheath inferiorly. The inferior epigastric artery then ascends loosely between the rectus abdominis muscle and the posterior rectus sheath. During contractions of the rectus abdominis muscle, the length of the muscle changes, and the artery must glide with the muscle to avoid tearing. The combination of the loose attachment of the inferior epigastric artery with the stabilization of its perforating branches fixed to the muscle belly makes the artery prone to shearing stresses at branching sites during strong muscular contraction.

While usually a self-limiting entity, rectus sheath hematoma can cause hypovolemic shock following sufficient expansion, with associated mortality.



2. Case Report

Patient, Mrs Pooja Chindaliya, 20yrs old female, G3P1L1A1 (Previous normal delivery) was admitted in view of preterm labour. She was taken for Emergency LSCS in view of Non progression of labour. Patient had no known co-morbidities prior to surgery and the intraoperative period was uneventful. There was around 800ml of blood loss intraoperatively. Post operatively patient's vitals, abdominal girth and urine output were closely monitored. On POD1, patient complained of severe pain in abdomen, extreme discomfort and sweating. On checking her vitals, Pulse was recorded as 140 bpm, Blood pressure of 90/60mmhg and severe pallor was noted. On palpation, lower abdomen was distended, tense and tender with local rise of temperature above the suture site. Patient was immediately shifted for ultrasonography and her investigations were repeated. Repeat Hb-4.6gm/dl, TLC-13000cumm, PLT-2.96 lakh. On admission Hb-10.9gm/dl, TLC-9000cumm, PLT-2.53 lakh. Her coagulation screen (BT/CT, PT and aPTT) was normal. On clinical evaluation there was no P/V bleed or any other source of external bleeding. Ultrasonography of abdomen was suggestive of a heterogeneously hypoechoic lesion with echogenic septae and few internal moving echoes between the muscular plane and the rectus sheath in the abdominal wall measuring approximately 10.6×4.8×8.4 cm3 (140cc). A provisional diagnosis of rectus sheath hematoma was given on ultrasonographic evaluation. Decision was taken for surgical re-exploration in view of hemodynamic instability of the patient. Patient was transfused with 1 unit PCV pre-operatively. Incision was taken over the suture site and abdomen opened in layers upto rectus sheath. A hematoma of size 8x6x4cm above the rectus abdominis muscle was noted (Figure 1). Around 200ml of blood clots were removed below the rectus sheath (Figure 2). Since the peritoneal layer was not closed in LSCS the blood was collected intraperitoneally as well. Rectus muscle was separated and uterus visualised. Uterine sutures were intact. B/L broad ligament was visualised, no hematoma present. Total blood loss in the procedure was around 1 litre. Hemostasis achieved and Intra-peritoneal drain was kept. Rectus muscle was evaluated for any active source of bleeding. Rectus muscle was approximated with simple interrupted sutures with vicryl no.1. Rectus sheath was sutured with continuous non-interlocking sutures. Skin and fat was closed with vertical mattress sutures with ethilon 2-0 sutures. Patient was transfused with 2 units PCV and 4 units FFP in the perioperative period. Post operatively patient was given antibiotic cover, and was monitored vigilantly. Patient tolerated the procedure well and the post-operative period was uneventful. Intra-peritoneal drain was removed on day 2 after the drain output was less than 50ml in 24 hours. Patient recovered well and patient was discharged on day 6 postoperatively.

Figure 1: Rectus sheath hematoma

Figure 2: Clots approx. 200cc seen intraoperatively

3. Discussion

Rectus sheath hematoma although rare, are rarely clinically inconspicuous when they do form. Usually, they result from a traumatic or spontaneous rupture of inferior epigastric artery, more often than superior epigastric artery, and in very unusual case rupture of muscle itself.[1] The pooling of blood and hematoma formation happens on the posterior surface of rectus abdominis muscle. This patient presented with severe pain and tenderness in abdomen, with signs of shock including tachycardia, hypotension and sweating with a significant fall in haemoglobin. In our case the rectus muscle hematoma was formed after LSCS.

Table 1: Causes of rectus sheath haematoma[2]

S. No	Causes of rectus sheath hematoma
1	Any physical trauma to the abdomen
2	Post Surgical Complication
3	Blood Dyscrasias
4	Severe staining exercises
5	Spontaneous Hematoma
6	Typhoid Fever
7	Patients on anticoagulation Therapy

Rectus sheath hematoma is more commonly seen in females, with a ratio of 1.7:1.[2] Overall, rectus sheath hematoma is the cause for only about 1% to 2% of all causes of acute abdominal pain.[3] It can present with sudden onset pain and swelling in the lower abdominal region. On examination, abdominal mass may be tender, firm, and warm to touch. It can also present as a bluish discoloration of abdomen over the swelling. The tenderness remains the same or increases with head raising and is referred to as Carnett's sign. Ecchymosis can be noted in the flanks or periumbilical areas, especially late in the course, and are referred to as Gray Turner's and Cullen's sign respectively. Ultrasonography is an inexpensive, safe and easy to use diagnostic method and is used as first line test in acute abdominal pain.[4] It can be used as first line modality for diagnosis as well as monitoring. Typically, rectus sheath hematoma appears on ultrasonography as spindle shaped in longitudinal scan and as ovoid mass on transverse and coronal section. It appears homogenous and sonolucent, but in the presence of clot could appear heterogenous.[5] However USG has sensitivity of 80-90%. CT scan is reported to have a sensitivity and specificity reaching about 100%. Management depends on the severity of rectus sheath hematoma, the associated haemodynamic instability and clinical presentation. Conservative management with rest, analgesia, antibiotics and cold compression is useful in milder case. Large hematomas causing haemodynamic instability, expanding haematomas and infected ones need surgical management. Evacuation followed by ligation of bleeding vessel and drainage, if necessary, is usually enough to prevent further complications. Despite good surgical hemostasis rectus sheath hematoma can occur even with trivial pathology-like cough. In present case, although a CT scan was not done due to critical condition of patient, intra-operative finding revealed a significantly large rectus sheath hematoma. Close monitoring of patient and timely surgical intervention was a life saving measure in this case.

4. Conclusion

Rectus sheath hematoma is reported to be one of the top three causes of re-laparotomy post C-section along with post-partum hemorrhage and intra-peritoneal bleed in literature. Medical training adequately reinforces the recognition of common surgical intra-abdominal emergencies, however there is relative lack of emphasis and hence awareness about abdominal wall problems presenting as acute abdomen. Moreover, rectus sheath hematoma is difficult to diagnose and can mimic other intra-abdominal pathologies, especially intra-peritoneal surgical leak as in the case of caesarean section. Hence, there is tendency of delayed diagnosis. High index of suspicion and appropriate intervention can save the life in massive rectus sheath hematoma.

Conflict of interest: None

References

[1] Sobkin PR, Bloom AI, Wilson MW, LaBerge JM, Hastings GS, Sheth HS, et al. Massive abdominal wall hemorrhage from injury to the inferior epigastric artery: A retrospective review. J Vasc Interv Radiol. 2008;19(3):327-32.
[2] Dube S, Dube M, Dube S. Rectus sheath hematoma: a potentially life-threatening complication following caesarean delivery. Int J Reprod Contracept Obstet Gynecol. 2018;7(10):4289.
[3] Allen M, Sevensma KE. Rectus Sheath Hematoma. In: StatPearls. Treasure Island (FL): StatPearls Publishing. 2021
[4] Stoker J, van Randen A, Laméris W, Boermeester MA. Imaging patients with acute abdominal pain. Radiology. 2009; 253 (1):31-46.
[5] Stoker J, van Randen A, Laméris W, Boermeester MA. Imaging patients with acute abdominal pain. Radiology. 2009; 253 (1): 31-46.