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Spontaneous Rectus Sheath Hematoma as a Diagnostic Pitfall in Third-Trimester Pregnancy: A Case Report

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Abstract **Case Report**

Background: Rectus sheath hematoma [RSH] is an uncommon cause of acute abdominal pain and represents a diagnostic challenge during pregnancy because of its nonspecific presentation and resemblance to obstetric and surgical emergencies. Delayed recognition may lead to inappropriate interventions and increased maternal–fetal morbidity. ***Case presentation:*** We report the case of a 41-year-old multiparous woman at 30 weeks of gestation with no history of trauma or anticoagulant therapy who presented with sudden-onset severe right flank pain. Initial clinical, biological, and obstetric evaluations were unremarkable, with reassuring fetal assessment and absence of inflammatory syndrome. Despite symptomatic treatment, the patient's condition worsened after 48 hours, with vomiting and increasing pain. Imaging revealed an extrauterine heterogeneous mass, and magnetic resonance imaging confirmed a rectus sheath hematoma. A rapid decline in hemoglobin from 12 g/dL to 6 g/dL indicated active bleeding and prompted urgent surgical intervention. Intraoperative findings showed a large hematoma within the right rectus sheath with bleeding from inferior epigastric vessel branches, which were successfully ligated. Postoperative recovery was favorable after blood transfusion. The pregnancy subsequently progressed without complications, and a healthy neonate was delivered by elective cesarean section at 39 weeks of gestation. ***Conclusion:*** Spontaneous rectus sheath hematoma should be considered in pregnant patients presenting with acute abdominal pain when obstetric evaluation is reassuring, particularly in the presence of unexplained anemia. Early use of appropriate imaging and individualized management are crucial to avoid diagnostic delay and ensure favorable maternal and fetal outcomes.

Keywords: Rectus sheath hematoma, Pregnancy, Acute abdominal pain, Inferior epigastric artery, Maternal-fetal outcomes, Magnetic resonance imaging.

INTRODUCTION

Acute abdominal pain during pregnancy poses a significant diagnostic challenge because obstetric, surgical, urological, and abdominal wall pathologies may present with overlapping clinical features. Although obstetric emergencies are often considered first, rare non-obstetric causes may be overlooked. Rectus sheath hematoma /RSH] is an uncommon condition caused by bleeding into the sheath of the rectus abdominis muscle, usually secondary to rupture of the epigastric vessels or muscle fiber tears [1,2]. Its presentation during pregnancy is rare but clinically relevant, as physiological changes such as increased intra-abdominal pressure, vascular engorgement, and muscular stretching predispose pregnant women to spontaneous bleeding even in the absence of trauma or anticoagulation therapy [3,4].

Because RSH often presents with nonspecific symptoms, misdiagnosis is frequent and may lead to unnecessary surgical exploration or emergency cesarean section, exposing both mother and fetus to avoidable risks [5,6]. We report a case of spontaneous RSH occurring in the third trimester of pregnancy, highlighting the diagnostic difficulty, the importance of imaging, and the role of timely surgical management.

CASE PRESENTATION

A 41-year-old woman, gravida 4 para 4, with no significant medical history, no anticoagulant use, and no history of trauma, was admitted at 30 weeks of gestation

for sudden-onset severe right-sided abdominal pain, described as a stabbing sensation. The pain appeared abruptly and was not associated with fever, digestive symptoms, or urinary complaints.

On admission, the patient was afebrile and hemodynamically stable, with a blood pressure of 120/80 mmHg and a heart rate of 80 beats per minute. Abdominal examination revealed marked tenderness over the right flank without guarding or rebound tenderness. The right iliac fossa was free, and no abdominal wall ecchymosis was noted.

Obstetric examination showed a relaxed uterus with no uterine contractions or vaginal bleeding. Speculum examination revealed no endouterine bleeding, and vaginal examination showed a closed cervix. Obstetric ultrasound demonstrated a singleton viable pregnancy in cephalic presentation, with an anterior placenta and no evidence of placental abruption. Estimated fetal weight was 1900 g, cervical length was 3.5 cm, fetal heart rate was normal, and cardiotocography was reassuring.

Initial laboratory investigations revealed a hemoglobin level of 12 g/dL, white blood cell count of 10,000/mm³, and a negative C-reactive protein**.** Urine culture was sterile. Renal ultrasound was normal, excluding acute pyelonephritis. Abdominal ultrasound showed a non-distended gallbladder with normal bile ducts; the appendix was not visualized.

Differential diagnoses initially included urinary tract infection, biliary disease, and appendicitis, but these were considered unlikely in the absence of fever, inflammatory syndrome, or imaging abnormalities. The patient was managed with analgesics and close clinical monitoring.

After 48 hours, the patient developed vomiting and worsening abdominal pain. Repeat obstetric ultrasound confirmed fetal well-being and absence of placental abruption but revealed an extrauterine oblong heterogeneous mass measuring 11 × 6 cm, highly painful on probe pressure [Figure 1]. Magnetic resonance imaging demonstrated a superficial mass arising from the right rectus abdominis muscle sheath, consistent with a rectus sheath hematoma [Figure 2]. Concurrent laboratory tests showed a rapid decline in hemoglobin from 12 g/dL to 6 g/dL, indicating active bleeding.

Urgent surgical exploration revealed a large hematoma within the sheath of the right rectus abdominis muscle. The hematoma was evacuated, and bleeding branches of the inferior epigastric vessels were ligated. Examination of the uterus and adnexa was unremarkable. Postoperatively, the patient stabilized after blood transfusion. The remainder of the pregnancy progressed without complications, and at 39 weeks of gestation, an elective cesarean section was performed, resulting in the delivery of a healthy neonate.

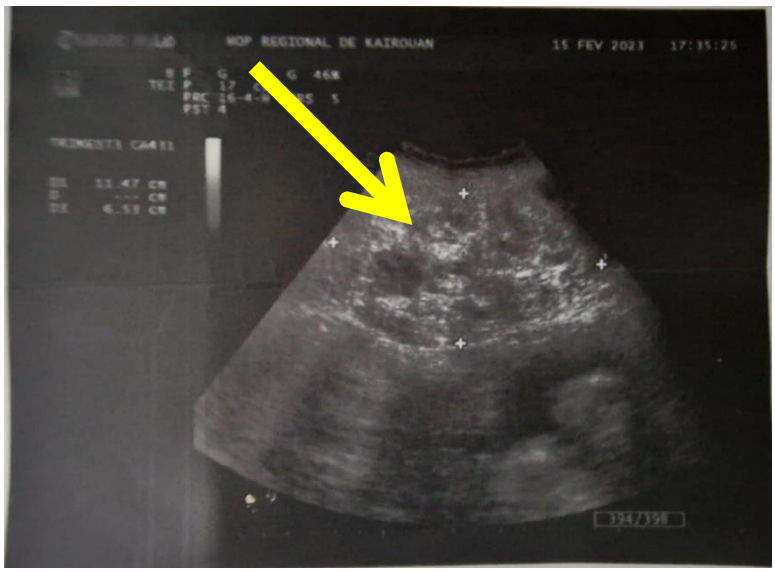

Figure 1: Transabdominal ultrasound demonstrating an oblong heterogeneous extrauterine mass in the right anterior abdominal wall

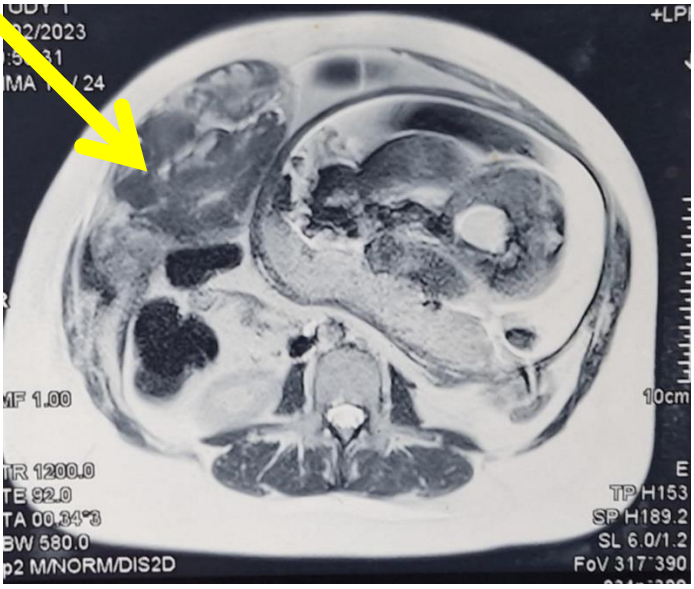

Figure 2 : Magnetic resonance imaging showing a right rectus sheath hematoma during pregnancy

DISCUSSION

Rectus sheath hematoma is an uncommon but potentially serious cause of acute abdominal pain, particularly during pregnancy, where its diagnosis is frequently delayed due to symptom overlap with obstetric and surgical emergencies [1,2]. The condition arises from bleeding into the rectus abdominis muscle sheath, most commonly caused by rupture of the inferior epigastric vessels below the arcuate line, where posterior fascial support is lacking [7,8]. Pregnancy itself constitutes a predisposing factor through increased intra-abdominal pressure, vascular engorgement, and stretching of the abdominal musculature, which may precipitate spontaneous bleeding even in the absence of trauma or anticoagulation, as observed in our patient [3,4,9]. Clinically, RSH often presents with localized abdominal pain, sometimes associated with vomiting or abdominal wall tenderness, while laboratory findings may initially be unremarkable; progressive anemia may be the only clue to ongoing hemorrhage [5,10]. These nonspecific features explain the high rate of misdiagnosis reported in the literature, leading in some cases to unnecessary laparotomy or emergency cesarean section with increased maternal and fetal morbidity [6,11]. Imaging therefore plays a central role in diagnosis: ultrasound is typically the first-line modality in pregnant patients, allowing simultaneous assessment of obstetric structures and the abdominal wall, while magnetic resonance imaging provides superior tissue characterization and precise localization of hematomas without exposing the fetus to ionizing radiation [12–14]. Although computed tomography remains the reference standard in nonpregnant patients and forms the basis of the Berná classification, its use during pregnancy is generally limited to selected cases [8,15]. Management of RSH depends on hemodynamic stability and hematoma progression. Conservative treatment is recommended for stable patients with non-expanding hematomas; however, rapid hemoglobin decline, persistent pain, or clinical deterioration requires invasive management, either through selective arterial embolization or surgical hemostasis [2,16–18]. In our case, the marked drop in hemoglobin and worsening symptoms mandated surgical intervention, which successfully controlled the bleeding and allowed continuation of pregnancy to term. Recent reports increasingly support that, when promptly diagnosed and appropriately managed, RSH during pregnancy does not necessarily compromise fetal outcome and may allow delivery at term [3,14,18].

CONCLUSION

Spontaneous rectus sheath hematoma is a rare but important differential diagnosis of acute abdominal pain during pregnancy. Its recognition requires a high index of suspicion, particularly when obstetric evaluation is reassuring and anemia develops without an obvious source. Ultrasound and MRI are key diagnostic tools, and management should be individualized based on clinical and biological evolution. Early diagnosis and timely intervention can result in excellent maternal and fetal outcomes.

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