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Hemorrhagic Corpus Luteum With Generalized Abdominal Pain in Patients With Idiopathic Thrombocytopenic Purpura

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Abstract

Introduction: Idiopathic thrombocytopenic purpura is a platelet autoimmune hemostatic disorder. In this study, an ITP case with abdominal signs and hemorrhagic corpus luteum is presented.
Case Presentation: The patient is a 28-year-old nonpregnant woman admitted to ED for constant acute abdominal pain, accompanied by nausea and vomiting. ITP was the prominent disease in her medical history which had been treated by corticosteroids. On physical examination, the patient had stable vital signs. Important paraclinic results were hemoglobin 8 g/dL and platelet count (7000 per microliter). Free fluid was reported in primary trans-abdominal sonography and CT scan. Finally, hemorrhagic corpus luteum was diagnosed in further radiologic studies.
Conclusions: Hemorrhagic corpus luteum is known to simulate a number of medical, surgical and gynecological conditions that cause acute abdomen. Sometimes it may have unusual presentations. Moreover, hemorrhagic corpus luteum (cysts) is not always identified during sonography and their diagnosis is often challenging as a result of variations in their size, the thickness of cyst wall, and internal echo pattern. As such, it is suggested to consider both internal and gynecologic spontaneous hemorrhages even in controlled ITP and more attention is paid to gynecologic disorders in abdominal pain management.

Keywords: Hemorrhagic Corpus Luteum, Idiopathic Thrombocytopenic Purpura, Abdominal Pain

1. Introduction

Idiopathic thrombocytopenic purpura (ITP) is an autoimmune hemostatic disorder associated with an IgG antiplatelet antibody that can cause moderate or excessive bruising and bleeding. It has acute and chronic forms with the former mostly seen in children but the latter is primarily observed in adults and its prevalence in women is greater than that of men. Splenomegaly is an unusual event in both acute and chronic forms.

The chronic form of idiopathic thrombocytopenic purpura (ITP) may be unpredictable in terms of frequency and severity and life threatening bleeding is often rare (1). Corpus luteum comes from a Latin word meaning "yellow body". The yellow coloration of the corpus luteum is due to lutein pigment. Corpus luteum is a temporary endocrine structure formed during luteinisation of the follicle after ovulation .It secrets progesterone that changes the uterus and makes it suitable for implantation of fertilized ovum, but if the ovum is not fertilized, the corpus luteum will regress and degenerate into a connective tissue scar. Corpus luteum hemorrhage may be caused spontaneously or triggered by coitus, trauma, exercise, or vaginal examination (2) The hemorrhagic complications of ovulation begin from the day of ovulation and continue during the life span of corpus luteal, which may last up to 14 days in nonpregnant women (2). Although its manifestation may vary relative to the degree of the hemorrhage, sometimes it can be enormous. Due to this enormous hemorrhage, surgical intervention and blood transfusion would be of great importance (2, 3). Thus, the risk of hemorrhagic ruptured corpus luteum may be increased in other hemostatic disorders such as idiopathic thrombocytopenic purpura (ITP).

For the patients referring to the hospital with abdominal pain, emergency physicians should take into account the patient's underlying disease and think of a wide range of differential diagnoses. We presented an idiopathic thrombocytopenic purpura (ITP) case with peritoneal signs and hemorrhagic corpus luteum.

2. Case Presentation

The patient is a 28-year-old married woman presented to emergency department with constant abdominal pain initiated from two days before, accompanied by nausea

and vomiting. Initially beginning in the right lower quadrant (RLQ), the pain gradually became generalized and increased in severity up to a high pain score (NRS = 7/10). There were no signs of radiation or digestive or urinary symptoms. The patient did not have any history of abdominal trauma and she denied pregnancy. ITP (idiopathic thrombocytopenic purpura) was the prominent disease in her past medical history which had been treated by corticosteroids. The patient had stable vital signs in physical examination. She had a pulse rate of 65 beats per minute (bmp), a blood pressure of 125/75 mmHg, and a temperature of 36.8°C (oral). Positive findings on physical examination were pale conjunctiva and abdominal tenderness which were mostly located in right lower quadrant. She had no abdominal guarding or rebound tenderness. Important para-clinic results were as follows: hemoglobin (8 grams per deciliter g/dL), red blood cell count (3.05 million cells per microliter), platelet count (7000 per microliter), white cell count (17300/dL) polymorphonuclear leukocyte of 87% and negative BhCG. Diffuse free fluid level was reported in trans-abdominal sonography. Abdominal CT scan showed nothing but a free fluid. Doppler sonography was performed to rule out Budd Chiari syndrome. The patient underwent intra vaginal sonography on the suspicion of gynecologic problems, and finally hemorrhagic corpus luteum was diagnosed.

3. Discussion

In the assessment of abdominal pain in women, it is of great importance that physicians consider special differential diagnoses related to gynecologic disorders such as corpus luteum rupture. He should also pay greater attention to the accompanied symptoms and signs. Thus, physicians should consider suitable paraclinic or radiologic work up for patients.

The prevalence of spontaneous massive hemoperitoneum due to hemorrhagic corpus luteum cyst is extremely rare, but it can be a potentially life-threatening presentation. Few such cases have been reported in the literature. The first extensive group of patients with corpus luteum hemorrhage and hemoperitoneum, which were studied by Hallatt et al. in 1984, is consist of 173 surgical cases (cited in Kazadi Buanga et al.) (4). They found that this disorder is present all through different reproductive life of women and a wide range of hemoperitoneum is observable during the exploration. Spontaneous massive hemoperitoneum may be caused by corpus luteum hemorrhage in women with ITP, patients with bone marrow failure and hemophiliac patients (5, 6).

Some cases of hemorrhagic corpus luteum during the reception of long-term anticoagulation treatment have been reported (6, 7), meaning that hemostatic diseases could be a predisposing factor for hemorrhagic corpus luteum. According to studies, women on anticoagulation therapy tend to suffer more severe cases of hemorrhage. In this population, corpus luteum hemorrhage can be fatal in 3% to 11% of cases with a recurrence chance of nearly 25% to 31% (2). Therefore, these events may be true for other hemostatic disorders such as ITP as well. Life threatening bleeding resulted from hemorrhagic corpus luteum is rare in ITP (as a hemostatic disease) and its diagnosis is more difficult in some cases. Since the pathogenesis of ITP involves accelerated platelet destruction of autoantibodies with a compensatory increase in platelet production in some patients, circulating platelets in patients who are younger and suffering from ITP would have greater hemostatic effectiveness (8). More severe bleeding in ITP is usually reported in old age while there is a paucity of data supporting the correlation between platelet levels and clinically important bleeding. As idiopathic thrombocytopenic purpura can increase the risk of bleeding, it is reasonable to pay considerable attention to internal hemorrhage even in controlled idiopathic thrombocytopenic purpura.

Corpus luteal bleeding is described more from the right ovary as it is believed that the recto-sigmoid colon helps protect the left ovary from trauma, and there is higher intraluminal pressure on the right side because of the difference in ovarian vein architecture (8). As can be seen, the patients in our study had more symptoms and signs in the right lower quadrant.

Although massive ovulation bleeding is reported rare in healthy women, it poses a considerable risk to women using anticoagulation (2) or probably other hemostatic disorders such as Idiopathic thrombocytopenic purpura. Thus, it seems using contraceptives that effectively suppress ovulation can be beneficial in patients with a history of heavy bleeding.

There would be a difficulty of reaching a diagnosis for hemorrhagic corpus luteal by non-invasive methods (4). Hemorrhagic corpus luteum is known for simulating a number of medical, surgical and gynecologic conditions that cause acute abdominal pain (4). Sometimes, it can have unusual presentations (5, 9, 10). The most common imaging methods used for diagnosis are computed tomography (CT) and ultrasound (US). Moreover, hemorrhagic corpus luteum (cysts) cannot be identified during sonography and its diagnosis is often challenging as a result of variations in their size, the thickness of cyst wall, and internal echo pattern (8).

3.1. Conclusion

For all patients suffering from abdominal pain, emergency physicians should take the patient's underlying disease into account and think of a wide range of differential diagnoses. Thus, it is important to pay greater attention to the medical history of the patients including their platelet counts. We suggest considering internal and gynecologic spontaneous hemorrhage even in controlled ITP and paying greater attention to gynecologic disorders during abdominal pain management. Moreover, abdominal hemorrhage in every patient with new accumulation of free fluid in abdominal cavity should be considered,

even if they have stable vital signs. Trauma, even in mild severity, can be a predisposing factor of internal hemorrhage in hemostatic disorders, which is often ignored by patients, especially in mild types of trauma. Therefore, a precise assessment of the patient is of utmost importance. In women claiming of lower abdominal pain, ovarian pathologies can be one of the differential diagnoses, even in patient with normal trans-abdominal sonography or normal abdominopelvic CT scan.

Footnote

Authors' Contribution: The corresponding author of this manuscript is Azra Izanloo and contribution of the authors as mentioned below with their responsibility in the research. Sayyed-Majid Sadrzadeh, Morteza Talebi-Deloie, Azadeh Mahmoudi-Gharaee: doing and supervision of the study; Sayyed-Majid Sadrzadeh: writing the manuscript; Azra Izanloo: writing and editing the manuscript.

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