# Challenges in the Early Diagnosis of a 17-Week Abdominal Pregnancy in a Patient with a History of Cesarean Section in a Peripheral Hospital Emergency Department

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Abdominal pregnancy is a rare and life-threatening form of ectopic pregnancy associated with a high risk of maternal morbidity and mortality. Early diagnosis in peripheral emergency departments remains challenging, particularly because its initial manifestations may mimic gastrointestinal or urinary tract disorders and may occur in patients without a history of antenatal care (*antenatal care*/ANC). A 29-year-old woman at 17 weeks of gestation presented to the emergency department with worsening epigastric pain for one day, accompanied by nausea and one episode of vomiting. The pain subsequently migrated to the lower abdomen and progressively worsened, particularly with movement. The patient had no history of ANC or ultrasonographic examination during the current pregnancy. Physical examination revealed pale conjunctivae, abdominal distension, and generalized abdominal tenderness, while vaginal examination demonstrated cervical motion tenderness. Pelvic ultrasonography revealed an extrauterine fetus located outside the uterine cavity, with no clearly identifiable fetal membranes or amniotic fluid surrounding the fetus, along with free fluid beneath the uterus. Laboratory investigations showed a hemoglobin level of 7.3 g/dL, white blood cell count of 33,850/mm³, platelet count of 440,000/mm³, and hematocrit of 21.6%. The patient received two units of packed red blood cells (PRC) and underwent emergency exploratory laparotomy because of worsening vital signs and progressively severe abdominal pain. Management of abdominal pregnancy in a peripheral emergency department requires a high index of clinical suspicion because atypical manifestations, such as epigastric pain, may mimic gastrointestinal or urinary tract conditions and potentially lead to delayed diagnosis. Prompt point-of-care ultrasonography and timely surgical intervention are essential to prevent massive hemorrhage and life-threatening complications, particularly in resource-limited healthcare settings. Abdominal pregnancy requires a high level of clinical vigilance in emergency departments, especially in patients presenting with atypical symptoms and no history of ANC. Early ultrasonographic assessment and prompt surgical exploration are crucial for establishing the diagnosis and improving maternal survival.

**Keywords:** abdominal pregnancy; ectopic pregnancy; emergency department; peripheral hospital; case report.

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## 1. Introduction

Abdominal pregnancy is a rare form of ectopic pregnancy characterized by implantation of the gestational product outside the uterine cavity, particularly within the abdominal or peritoneal cavity. Although it accounts for only a small proportion of all ectopic pregnancies, abdominal pregnancy is associated with substantially higher maternal morbidity and mortality than conventional tubal ectopic pregnancy (1). The condition may remain undiagnosed until an advanced gestational age because its clinical manifestations are often nonspecific and may overlap with other common causes of abdominal pain. The potential for severe intra-abdominal hemorrhage makes early recognition and appropriate management essential.

Abdominal pregnancy may progress into the second trimester or beyond before diagnosis is established. As gestational age increases, the growing fetus and placenta may become closely associated with various

abdominal and pelvic structures, making both diagnosis and surgical management increasingly complex. A pregnancy reaching 17 weeks of gestation represents a particularly challenging clinical situation because abnormal placental implantation may involve highly vascularized tissues and increase the risk of massive hemorrhage during surgical intervention (2). Therefore, delayed recognition of an advanced abdominal pregnancy may significantly increase the risk of life-threatening maternal complications.

From an epidemiological perspective, abdominal pregnancy remains an important obstetric emergency despite its low incidence. The clinical burden may be particularly significant in low-resource and peripheral healthcare settings where access to advanced diagnostic imaging, specialist obstetric care, and emergency surgical services may be limited. In such settings, patients may initially present to healthcare facilities without the resources required for immediate confirmation of an ectopic pregnancy. These limitations may contribute to delayed diagnosis and increase the risk of maternal complications (2).

The clinical presentation of abdominal pregnancy is highly variable and depends on the gestational age, location of implantation, and presence or absence of complications. Patients may initially report nonspecific symptoms such as abdominal pain, nausea, vomiting, or gastrointestinal discomfort. As the pregnancy progresses, symptoms may become more severe because of mechanical pressure, peritoneal irritation, abnormal placental implantation, or intra-abdominal bleeding. Advanced abdominal pregnancies involving the second trimester may therefore present substantial diagnostic and surgical challenges because the anatomical relationship between the fetus, placenta, and surrounding organs can be difficult to determine (3).

One of the major diagnostic challenges is that the initial symptoms may closely resemble common gastrointestinal or urinary tract disorders. Epigastric pain, lower abdominal pain, nausea, and vomiting may lead clinicians to consider diagnoses such as acute gastritis, appendicitis, or urinary tract infection. In some circumstances, symptoms may even be attributed to dietary factors, particularly when the patient reports consuming spicy or irritating foods before symptom onset (5). Such misleading presentations may result in an initial assessment that does not immediately consider an obstetric emergency.

The absence of adequate antenatal care (ANC) represents another important factor that may contribute to delayed recognition. Women who do not undergo routine antenatal assessment may reach the second trimester without confirmation of the location or viability of the pregnancy. Regular ANC, including timely ultrasonographic examination, plays an important role in identifying abnormal implantation and detecting potential complications at an earlier stage. In remote or peripheral areas, limited access to routine antenatal services may increase the likelihood that an abdominal pregnancy remains undiagnosed until the patient develops acute symptoms (4).

Delayed diagnosis may also occur during the initial triage process in the emergency department. A reproductive-age woman presenting with nonspecific abdominal pain may initially be evaluated for gastrointestinal, urinary, or other surgical conditions, particularly when typical symptoms of ectopic pregnancy are absent. However, ectopic pregnancy should remain an important differential diagnosis in reproductive-age women with acute abdominal pain, especially when accompanied by peritoneal irritation, hemodynamic instability, or evidence of intra-abdominal fluid. Maintaining a high index of clinical suspicion is therefore essential to facilitate appropriate diagnostic evaluation and prevent delays in definitive management (7).

A history of previous uterine surgery may further complicate the assessment of an abnormal pregnancy. Previous cesarean section can result in anatomical changes and scar formation that may influence the location of implantation. Although abdominal pregnancy can occur in the absence of previous uterine surgery, a history of cesarean section may complicate the interpretation of pelvic anatomy and increase concern for abnormal implantation and placental attachment (6). Careful consideration of the patient's

obstetric and surgical history is therefore important when evaluating unusual presentations of pregnancy-associated abdominal pain.

Placental implantation is one of the most challenging aspects of abdominal pregnancy management. Unlike an intrauterine pregnancy, the placenta in an abdominal pregnancy may attach to various peritoneal surfaces, pelvic structures, or abdominal organs, some of which may have an extensive blood supply. Attempting to remove a deeply or abnormally implanted placenta during surgery can result in severe and potentially uncontrollable hemorrhage. Consequently, careful assessment of placental location, maternal hemodynamic status, and the extent of intra-abdominal involvement is essential when planning surgical management (3).

Ultrasonography has an important role in the early identification of abdominal pregnancy, particularly in emergency settings. Findings such as a fetus located outside the uterine cavity, absence of an appropriate intrauterine gestational sac, abnormal fetal position, and the presence of free intra-abdominal fluid may raise suspicion for an extrauterine pregnancy. Point-of-care ultrasound can be particularly valuable in peripheral emergency departments because it may provide rapid information when more advanced imaging modalities are not immediately available. Early imaging combined with appropriate clinical interpretation can facilitate timely diagnosis and help determine the need for emergency surgical intervention (7).

Given these diagnostic and therapeutic challenges, abdominal pregnancy in the second trimester requires a high level of clinical vigilance, particularly when the patient presents with atypical symptoms and has no history of adequate antenatal care. Delayed diagnosis may lead to significant intra-abdominal hemorrhage, hemodynamic deterioration, and increased maternal morbidity and mortality. A combination of careful history taking, thorough physical examination, early ultrasonographic assessment, and readiness for emergency surgical intervention is therefore essential for improving maternal outcomes. This case report describes a 29-year-old woman with a 17-week abdominal pregnancy and a history of one previous cesarean section who presented to the emergency department of a peripheral hospital with initially misleading gastrointestinal symptoms. The case highlights the diagnostic pitfalls associated with atypical abdominal pregnancy, the challenges encountered in peripheral healthcare settings, and the critical importance of rapid diagnosis and timely surgical intervention to prevent life-threatening maternal complications.

## 2. Literature Review and Problem Statement

### Abdominal Pregnancy

Abdominal pregnancy is a rare form of ectopic pregnancy in which implantation of the gestational product occurs outside the uterine cavity, particularly within the peritoneal cavity or on the surface of intra-abdominal organs. Although uncommon, this condition is associated with substantial maternal morbidity and mortality because the placenta may implant on highly vascularized abdominal or pelvic structures, creating a significant risk of massive hemorrhage (8). Abdominal pregnancy may be classified as primary when implantation occurs directly within the abdominal cavity or secondary when an initially implanted pregnancy becomes detached and subsequently reimplants within the abdomen. Clinical manifestations are highly variable and may include abdominal pain, nausea, vomiting, vaginal bleeding, or signs of intra-abdominal hemorrhage. In some cases, the pregnancy may remain undiagnosed until the second trimester, when increasing fetal and placental growth makes the condition more difficult to manage surgically. Therefore, abdominal pregnancy should be considered in reproductive-age women presenting with abdominal pain and evidence of pregnancy, particularly when an intrauterine pregnancy cannot be clearly confirmed.

### Diagnostic Challenges of Abdominal Pregnancy at 17 Weeks of Gestation

The diagnosis of abdominal pregnancy at 17 weeks of gestation can be challenging because its clinical manifestations are often nonspecific and may mimic gastrointestinal or urinary tract disorders. Symptoms such as epigastric pain, nausea, vomiting, lower abdominal pain, and pain aggravated by movement may initially suggest conditions such as gastritis, appendicitis, or urinary tract infection rather than an obstetric emergency (9). As gestation progresses into the second trimester, enlargement of the fetus and placenta may further complicate the anatomical assessment and obscure the abnormal implantation site. Ultrasonography plays an important role in identifying an extrauterine pregnancy, assessing fetal location, and detecting free intraperitoneal fluid; however, interpretation may be difficult when the fetal position is unusual or when the placenta is attached to an abdominal structure. Consequently, a high index of clinical suspicion is essential, particularly in women of reproductive age who present with acute abdominal pain, signs of peritoneal irritation, or unexplained anemia.

### Association Between Previous Cesarean Section and Abnormal Pregnancy

A history of previous cesarean section is an important component of the clinical assessment of women with suspected abnormal pregnancy because previous uterine surgery may result in anatomical changes and scar formation that can influence subsequent implantation (10). Cesarean scar formation has been associated with abnormal implantation disorders, including cesarean scar pregnancy and abnormal placental implantation, and may complicate the anatomical assessment of the uterus and surrounding pelvic structures. In patients with abdominal pregnancy, a previous cesarean section may further increase the complexity of evaluating the relationship between the uterus, placenta, and adjacent abdominal structures. Although a direct causal relationship between previous cesarean delivery and abdominal pregnancy cannot always be established, the surgical history should be carefully considered when evaluating an atypical pregnancy. Detailed assessment of the number of previous cesarean deliveries, the condition of the uterine scar, and previous obstetric complications may help clinicians establish an appropriate differential diagnosis and determine the need for further imaging and intervention.

### Diagnosis and Management of Abdominal Pregnancy in a Peripheral Emergency Department

The diagnosis and management of abdominal pregnancy in a peripheral emergency department require a rapid and systematic approach because diagnostic resources may be limited while maternal deterioration can occur rapidly. Initial assessment should focus on hemodynamic status, abdominal and pelvic examination, complete blood count, hemoglobin concentration, and ultrasonographic evaluation of pregnancy location and intra-abdominal free fluid (11). Point-of-care ultrasound may provide valuable information in emergency settings and can facilitate early recognition when advanced imaging modalities are not immediately available. When intra-abdominal bleeding, hemodynamic instability, or strong clinical suspicion of complicated abdominal pregnancy is present, resuscitation, blood transfusion, and preparation for emergency surgery should be initiated promptly. Laparotomy may be required as definitive treatment in unstable patients, with particular attention to the site of placental implantation because removal of a placenta attached to highly vascularized abdominal structures can result in severe hemorrhage (12). Therefore, successful management in peripheral hospitals depends on early recognition of atypical presentations, rapid ultrasonographic assessment, availability of blood products, effective multidisciplinary coordination, and timely surgical intervention or referral to a higher-level facility.

## 3. Method

This study used a descriptive case report design to describe the clinical presentation, diagnostic process, and emergency management of a 29-year-old woman with a 17-week abdominal pregnancy who

presented to the emergency department of a peripheral hospital. The case was selected because of its atypical initial presentation, absence of routine antenatal care, previous history of cesarean section, and the diagnostic challenges encountered during the emergency evaluation. The clinical course was documented from the patient's initial presentation through diagnostic evaluation, stabilization, surgical intervention, and postoperative management.

Data were obtained from the patient's medical records, including history taking, physical examination, laboratory investigations, pelvic ultrasonography, operative findings, and postoperative clinical evaluation. Particular attention was given to presenting symptoms, vital signs, abdominal and pelvic examination findings, hemoglobin and hematological parameters, ultrasonographic findings, intraoperative findings, and the interventions performed during the emergency management. The diagnostic process was evaluated based on the correlation between clinical findings, imaging results, laboratory parameters, and surgical findings.

The patient received initial emergency stabilization, including monitoring of vital signs, intravenous fluid therapy, blood preparation, and transfusion of packed red blood cells according to clinical indications. Because of worsening clinical condition and increasing abdominal pain with suspected intra-abdominal bleeding, emergency exploratory laparotomy was performed. Intraoperative findings were documented to establish the definitive diagnosis and determine the appropriate surgical management. The subsequent clinical course was monitored until the patient's condition stabilized. Patient confidentiality was maintained throughout the preparation of this case report. Identifying information was excluded from the report, and the case was presented solely for academic and clinical purposes. The report was prepared in accordance with accepted principles for the publication of case reports, with appropriate consideration of patient privacy and ethical requirements.

## 4. Results And Discussion

### Result

A 29-year-old woman presented to the emergency department of RS Hermina Balikpapan, a peripheral hospital, with severe epigastric pain that had started one day before admission. The pain initially developed after the patient consumed spicy food, leading to an initial impression of a possible gastrointestinal disorder. The pain was accompanied by nausea and one episode of vomiting. However, during the course of evaluation, the character and location of the pain changed significantly. The pain migrated from the epigastric region toward the lower abdomen and progressively increased in severity. The patient reported that the pain became particularly severe with movement and changes in body position. She had no history of routine antenatal care (ANC) and had never undergone ultrasonography during the current pregnancy. Her obstetric history revealed one previous cesarean section.

On arrival at the emergency department, the patient was conscious and appeared acutely ill with moderate distress. Physical examination revealed markedly pale conjunctivae, suggesting significant anemia. Mild tachycardia was present, although the patient's initial blood pressure and general hemodynamic condition were relatively maintained. Abdominal examination revealed significant abdominal distension accompanied by generalized tenderness involving all abdominal quadrants. Guarding was also present, indicating peritoneal irritation. Pelvic examination demonstrated marked cervical motion tenderness. The combination of progressive abdominal pain, abdominal distension, generalized tenderness, and cervical motion tenderness prompted further evaluation for an acute intra-abdominal or gynecological emergency.

Laboratory evaluation demonstrated significant hematological abnormalities. The patient's hemoglobin level was 7.3 g/dL, with a hematocrit of 21.6%, indicating severe anemia. The total leukocyte count was

markedly elevated at 33,850/mm³, while the platelet count was 440,000/mm³. The severe anemia was clinically consistent with the patient's marked pallor and raised concern for significant blood loss, particularly in the context of generalized abdominal tenderness and suspected intra-abdominal bleeding. The leukocytosis indicated a significant systemic response, although it was considered nonspecific and interpreted together with the patient's clinical and imaging findings.

An urgent pelvic ultrasonographic examination was performed at the emergency department. The examination demonstrated a fetus located outside the uterine cavity, confirming an extrauterine gestational location. The fetus was not surrounded by clearly identifiable fetal membranes or amniotic fluid, and free fluid was visualized beneath the uterus. The presence of an extrauterine fetus together with free intra-abdominal fluid strongly supported the diagnosis of an advanced abdominal pregnancy complicated by suspected hemoperitoneum. These findings were particularly significant because the patient had not previously undergone antenatal ultrasonography, and therefore the abnormal location of the pregnancy had not been identified earlier.

Following the ultrasonographic examination, the patient's clinical condition continued to raise concern for progressive intra-abdominal bleeding. The combination of worsening abdominal pain, marked pallor, severe anemia, abdominal distension, generalized tenderness, and free intra-abdominal fluid suggested an acute hemorrhagic process. Considering the gestational age of approximately 17 weeks and the extrauterine location of the fetus, the working diagnosis was an advanced abdominal pregnancy with suspected rupture or active intra-abdominal bleeding. The diagnosis was established based on the integration of clinical examination, laboratory findings, and ultrasonographic evidence.

Immediate resuscitation was initiated while preparations for definitive surgical management were undertaken. The patient received two units of packed red blood cells (PRC) because of severe anemia and suspected ongoing intra-abdominal blood loss. Close monitoring of the patient's clinical and hemodynamic status was performed during stabilization. Given the progressive severity of the abdominal symptoms and the imaging findings, conservative management was considered inappropriate. The patient was subsequently prepared for emergency exploratory laparotomy (cito) with the preoperative diagnosis of ruptured or complicated abdominal pregnancy.

Emergency exploratory laparotomy was therefore performed as the definitive diagnostic and therapeutic procedure. The decision to proceed with immediate surgical exploration was based on the patient's clinical deterioration, severe anemia, acute abdominal findings, and ultrasonographic evidence of an extrauterine pregnancy accompanied by free intra-abdominal fluid. The case demonstrates the importance of rapid clinical decision-making in a peripheral emergency department, where delays in diagnosis or transfer may increase the risk of severe hemorrhage and maternal deterioration.

## Discussion

Abdominal pregnancy is a rare form of ectopic pregnancy in which implantation occurs within the peritoneal cavity rather than inside the uterine cavity or fallopian tube. Although uncommon, it is associated with substantial maternal morbidity because implantation may involve highly vascularized abdominal or pelvic structures. The risk becomes particularly concerning when diagnosis is delayed until the second trimester, when the enlarging pregnancy can cause significant anatomical distortion and increase the risk of hemorrhage (10).

The present case highlights the difficulty of diagnosing abdominal pregnancy when the initial symptoms are nonspecific. The patient initially experienced severe epigastric pain after eating spicy food, which could easily suggest a gastrointestinal disorder. However, the subsequent migration of pain to the lower abdomen, progressive severity, abdominal guarding, and cervical motion tenderness indicated that the

symptoms were more consistent with an acute intra-abdominal or pelvic process. Abdominal pregnancy can produce variable symptoms depending on the location of implantation and involvement of surrounding organs, making clinical suspicion essential (11).

The absence of ANC and ultrasonographic examination during the current pregnancy was another important factor. Routine antenatal assessment provides opportunities to confirm intrauterine pregnancy and identify abnormal implantation at an earlier gestational age. In this patient, the lack of previous imaging meant that the abnormal extrauterine location remained undetected until the patient developed an acute abdominal condition at 17 weeks of gestation (12).

The patient's previous cesarean section was also clinically relevant. A history of uterine surgery can alter pelvic anatomy and is associated with abnormal implantation patterns, particularly in pregnancies involving the lower uterine segment or cesarean scar. Although a previous cesarean section does not establish abdominal pregnancy as a diagnosis, it should increase clinical awareness of abnormal implantation when accompanied by unusual pain or abnormal ultrasonographic findings (13).

The laboratory findings further supported the severity of the condition. The hemoglobin level of 7.3 g/dL and hematocrit of 21.6% indicated significant anemia, which was concerning in the context of suspected intra-abdominal hemorrhage. The markedly elevated leukocyte count may have reflected an acute physiological stress response and should not, by itself, be interpreted as evidence of infection. In patients with acute abdominal pain during pregnancy, laboratory findings should therefore be interpreted together with clinical examination and imaging rather than in isolation (14).

Ultrasonography was particularly important in this case because it demonstrated the fetus outside the uterine cavity and free fluid beneath the uterus. Ultrasound is an important first-line imaging modality in suspected ectopic pregnancy because it can establish the relationship between the gestational structures and the uterine cavity. In abdominal pregnancy, the absence of an intrauterine pregnancy together with an extrauterine fetus and free intraperitoneal fluid should prompt immediate consideration of this diagnosis (15).

The presence of free fluid was especially concerning because, in a patient with severe abdominal pain and marked anemia, it may represent hemoperitoneum. In this setting, the combination of ultrasound findings and clinical deterioration was more important than any single finding. Rapid recognition of suspected intra-abdominal bleeding is essential because continued hemorrhage may result in hemodynamic instability and potentially life-threatening maternal complications (16).

Management in this case required simultaneous resuscitation and preparation for definitive surgical treatment. Administration of two units of PRC was appropriate in the setting of severe anemia and suspected blood loss. The decision to perform emergency exploratory laparotomy was based on the overall clinical picture rather than waiting for further deterioration. In complicated abdominal pregnancy with suspected hemorrhage, delaying definitive management may increase the risk of severe maternal morbidity (17).

Surgical treatment of abdominal pregnancy can be technically challenging because the placenta may be attached to structures such as the bowel, mesentery, omentum, pelvic organs, or major blood vessels. Manipulation of the placenta can result in severe bleeding when its vascular supply cannot be safely controlled. Therefore, surgical planning must consider the implantation site and the degree of placental attachment identified during exploration (18).

The management of the placenta depends on its anatomical location and vascular involvement. When removal carries a high risk of uncontrollable hemorrhage, leaving the placenta in situ may be considered, followed by appropriate postoperative monitoring. Conversely, removal may be performed when the

implantation site can be safely controlled. This decision must be individualized according to intraoperative findings and the patient's hemodynamic condition (19).

This case also illustrates the importance of maintaining a high index of suspicion in peripheral emergency departments. In settings where patients may present without previous antenatal evaluation, clinicians should consider ectopic or abdominal pregnancy when severe abdominal pain occurs during the second trimester, particularly when ultrasound demonstrates an abnormal fetal location. Early use of ultrasonography, rapid laboratory assessment, blood preparation, and timely surgical referral or intervention are essential components of emergency management (20).

Overall, the case emphasizes that abdominal pregnancy can remain clinically unrecognized until the second trimester, particularly in patients without ANC. The combination of atypical abdominal pain, previous cesarean section, severe anemia, extrauterine fetal location, and free intra-abdominal fluid should prompt immediate consideration of abdominal pregnancy. Early diagnosis and rapid multidisciplinary management are essential to reduce the risk of catastrophic hemorrhage and maternal morbidity.

## 5. Conclusion

Abdominal pregnancy is a rare and potentially life-threatening obstetric emergency that presents significant diagnostic challenges, particularly in peripheral emergency departments. Its initial manifestations may resemble common gastrointestinal or urinary tract disorders, making early recognition difficult, especially when patients have not received adequate antenatal care. In such circumstances, a high index of clinical suspicion is essential, particularly when abdominal pain occurs during the second trimester or is accompanied by signs suggestive of intra-abdominal bleeding. Prompt point-of-care ultrasonography can provide critical information regarding fetal location and the presence of free intra-abdominal fluid, supporting early recognition of this potentially fatal condition.

Once abdominal pregnancy with suspected hemorrhage is identified, rapid stabilization and definitive management are crucial. Immediate preparation and administration of blood products may be required to address significant anemia or ongoing blood loss, while emergency exploratory laparotomy (CITO) may be necessary when there is evidence of rupture, hemoperitoneum, or clinical deterioration. Timely coordination between emergency, obstetric, anesthetic, and surgical teams is therefore essential to control hemorrhage and prevent maternal complications. Early diagnosis followed by prompt resuscitation and surgical intervention can substantially improve the likelihood of maternal survival in this rare obstetric emergency.

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