



## Early Primary Abdominal Pregnancy: A Case Report

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### ABSTRACT

**Background:** Primary abdominal pregnancy is a rare and life-threatening form of ectopic pregnancy in which implantation occurs directly onto peritoneal surfaces, without prior tubal involvement. Due to its atypical presentation, diagnosis is often delayed, increasing the risk of severe complications such as hemorrhage and organ adhesion.

**Case Presentation:** We report the case of a 32-year-old multiparous woman with a history of multiple induced abortions who presented with lower abdominal pain and vaginal bleeding. Her serum  $\beta$ hCG level was elevated (2079 mIU/ml), and ultrasonography suggested bowel wall thickening, initially misinterpreted as intussusception. Diagnostic laparoscopy was attempted but converted to laparotomy due to dense omental adhesions. Intraoperatively, an organized mass adherent to the transverse colon was identified and excised. Histopathological examination confirmed products of conception, leading to a diagnosis of primary abdominal pregnancy. Postoperatively, the patient recovered well, and serum  $\beta$ hCG levels declined to 40 mIU/ml, confirming resolution.

**Discussion and Conclusion:** This case underscores the diagnostic challenges associated with primary abdominal pregnancy, particularly in patients with inconclusive ultrasound findings. High clinical suspicion, serial  $\beta$ hCG monitoring, and surgical intervention remain essential for timely diagnosis and management. Increased awareness of this rare condition is crucial to improving maternal outcomes and preventing severe complications.

**Keywords:** Primary abdominal pregnancy, ectopic pregnancy,  $\beta$ hCG, laparotomy, case report.

### 1. Introduction

Primary abdominal pregnancy is a rare form of ectopic pregnancy where implantation occurs directly on peritoneal surfaces, without prior tubal attachment or rupture. It accounts for approximately 1% of all ectopic pregnancies and is associated with high maternal morbidity and mortality due to late diagnosis and complications such as haemorrhage and organ damage (Poole et al., 2012). Risk factors include prior abortions, pelvic inflammatory disease, assisted reproductive techniques, and endometriosis, though cases without these risk factors have also been reported (Bate, 1946). Due to its atypical presentation, diagnosis is often delayed and usually occurs during surgical exploration for suspected abdominal pathology.

This report describes a rare case of primary abdominal pregnancy, diagnosed during laparotomy in a patient with multiple prior induced abortions and no previous abdominal surgeries. The findings highlight the importance of considering abdominal pregnancy in women presenting with persistent abdominal pain, abnormal  $\beta$ hCG levels, and inconclusive ultrasound findings.

### 2. Case Report

A 32-year-old female (gravida 7 para 1 abortion 5) was admitted to the gynaecology ward of SCB Medical College and Hospital on 6<sup>th</sup> November 2015 with complaints of lower abdominal pain and vaginal bleeding for 7 days. Her last menstrual period was on 9<sup>th</sup> October 2015, and her past menstrual cycles were regular with average flow. She was married for 12 years with one living child of 11 years, and she had five induced abortions at 6-8 weeks of gestational age, for which suction and evacuation were not done. She never used any contraception. She was a known case of Asthma but not on any medication and did not have a history of Diabetes Mellitus, Hypertension, Thyroid disorder, Heart disease or Tuberculosis. She also did not give any history of previous abdominal surgeries. On general examination, she was conscious, oriented and afebrile with stable vitals and mild pallor, no oedema, icterus and lymphadenopathy. Her respiratory and cardiovascular examination findings were within normal limits. Per abdomen was soft and tenderness present over lower abdomen. On per speculum examination there was bleeding through os. Per vaginally uterus was bulky, soft, os closed, cervical motion tenderness was present and bilateral forniceal tenderness present. All her routine blood investigations were within normal limit including complete blood count, liver and renal function tests, blood sugars, bleeding and clotting times. Her urine pregnancy test was positive and her serum beta human chorionic gonadotropins ( $\beta$ hCG) level as on 5<sup>th</sup> November was 2079 mIU/ml. Her USG finding on 5<sup>th</sup> November was bowel wall thickening in the left iliac fossa region with minimal ascites, for which the radiological impression was Intussusception. Then she was planned for diagnostic laparoscopy, and on 9<sup>th</sup>

November through the laparoscope, her peritoneal cavity was visualised. There was a hematoma over the transverse colon to which omentum was densely adherent, so pelvic structures could not be visualised. Therefore, laparotomy was performed and through a transverse incision on the lower abdomen, uterus was exteriorised and a healthy uterus with tubes and ovaries were found. On the transverse colon, an organised mass of 5cmX5cm was adhered, which was separated by blunt dissection. There were feeding vessels from the omentum to the organised mass for which part of omentum was excised along with the mass and sent for histopathology. Then, dilatation of the cervix and endometrial curettage were done and the endometrium was sent for histopathology. She was given postoperative fluid and antibiotics and her serum  $\beta$ hCG was repeated on 15<sup>th</sup> November (6<sup>th</sup> postoperative day) which was found to be 40 mIU/ml. Her histopathology report confirmed the mass to be products of conception. Since the conceptus was adherent to abdominal structures with healthy uterus, tubes and ovaries, the patient was diagnosed as a case of primary abdominal pregnancy.

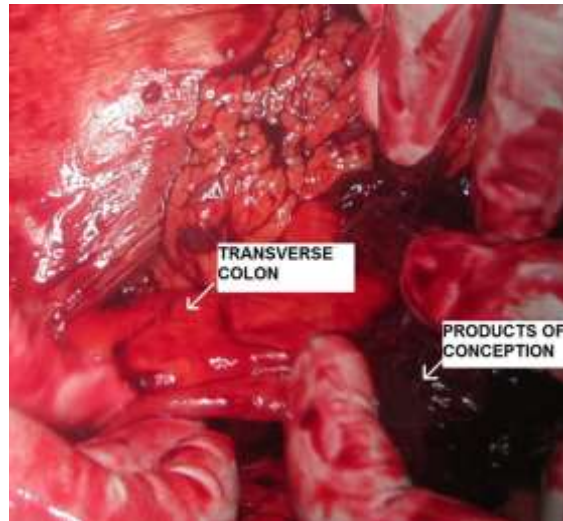


Figure 1 Products of conception found adherent to the transverse colon

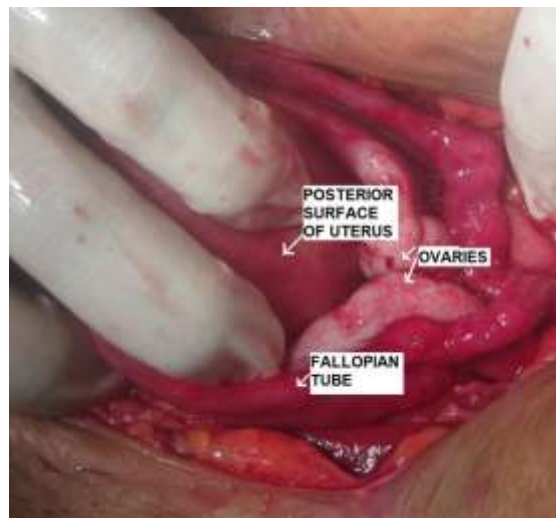


Figure 2 Fulfils Studdiford's criteria as there was no breach on the posterior surface of uterus and b/l tubes, and ovaries were healthy

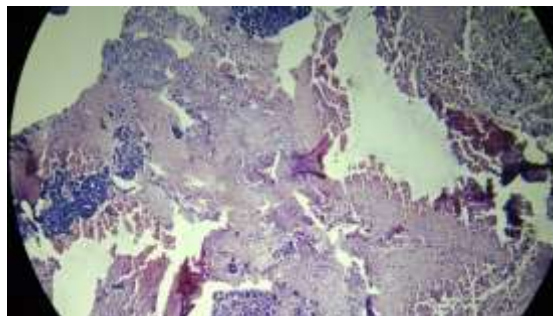


Figure 3 Histopathology of mass confirmed products of conception

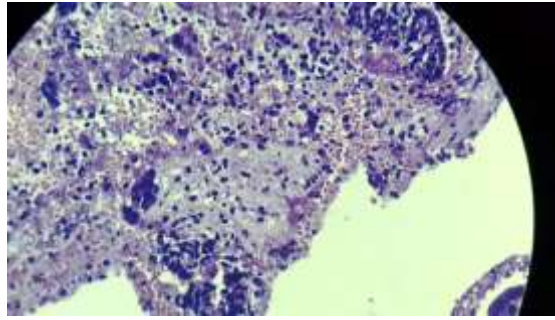


Figure 4 Histopathology of endometrium showing non-secretory endometrium confirms no intrauterine pregnancy

### 3. Discussion

Abdominal pregnancy can be classified as primary or secondary. Primary abdominal pregnancy, as first described by Studdiford (1946) (Bate, 1946), occurs when the fertilized ovum implants directly onto the peritoneal surfaces, while secondary abdominal pregnancy results from tubal rupture or abortion with subsequent peritoneal implantation. The diagnostic criteria proposed by Studdiford (Bate, 1946) include:

1. Normal bilateral fallopian tubes and ovaries, with no evidence of tubal rupture or fistula.
2. An absence of uteroperitoneal fistula.
3. A pregnancy exclusively located in the peritoneal cavity, unrelated to the reproductive tract.

In this case, intraoperative findings confirmed a healthy uterus, tubes, and ovaries, supporting the diagnosis of primary abdominal pregnancy. The presence of an organized mass adhered to the transverse colon, histopathologically confirmed as products of conception, further validated this diagnosis.

Diagnosing abdominal pregnancy remains challenging. Ultrasonography, though useful, often fails to identify early abdominal pregnancies, as seen in this case where the initial radiologic impression was intussusception. Serum  $\beta$ hCG levels may also be inconclusive, as levels can overlap with those seen in early intrauterine pregnancies or incomplete abortions (Ranaei-Zamani et al., 2021). In this case, persistent  $\beta$ hCG levels and abnormal ultrasound findings prompted surgical exploration, ultimately leading to the correct diagnosis.

Management of abdominal pregnancy depends on gestational age and placental attachment. Early cases may be treated surgically via laparoscopy or laparotomy, with complete removal of the conceptus. In advanced cases where placental separation poses a high risk of hemorrhage, conservative management with methotrexate or selective ligation of feeding vessels may be necessary (Tarifi et al., 2019). Here, laparotomy with excision of the mass and omentum ensured complete removal, followed by a significant decline in  $\beta$ hCG levels postoperatively, confirming resolution.

### 4. Conclusion

Primary abdominal pregnancy is a rare and potentially life-threatening condition that requires high clinical suspicion for timely diagnosis. This case highlights the importance of considering abdominal pregnancy in women with persistent abdominal pain, inconclusive imaging findings, and abnormal  $\beta$ hCG trends. Surgical intervention remains the definitive management, ensuring complete removal of the ectopic tissue to prevent complications. Increased awareness and early detection are crucial in improving outcomes for such rare presentations of ectopic pregnancy.

#### Acknowledgements

None

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