



# Multidisciplinary Approach of a Rare Case of Placenta Increta with Multiple Comorbidities: A Case Report

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## Abstract

**Background:** The medical condition known as placenta increta was first described in 1937. If a pregnant woman experiences this condition, a multidisciplinary team that includes an obstetrician, surgeon, urologist, and anesthesiologist must address the case. **Case Report:** A 32-year-old woman, who has had two prior pregnancies, sought medical attention at our emergency department during her 28th week of gestation. She reported experiencing abdominal pain over the past two days and reduced vaginal bleeding for 12 hours. The patient was admitted to the hospital with a provisional diagnosis of placenta accreta and underwent Magnetic Resonance Imaging and multiple multidisciplinary consultations due to her numerous comorbidities. Despite a planned elective cesarean delivery scheduled for 34 weeks of gestation, the patient underwent an emergent cesarean delivery at 33 weeks due to heavy vaginal bleeding. Following the delivery of the baby, a subtotal hysterectomy was conducted while the placenta was left on site. Although an effort was made to preserve both ovaries, the bilateral adnexectomy was performed due to intense adherent syndrome and significant bleeding from both ovaries. After being hospitalized for nine days, the patient was discharged and followed up at 40 days and six months after surgery. The infant was also discharged 40 days after birth. The histopathological appearance was consistent with a diagnosis of placental increta. **Conclusions:** This presentation outlines a unique case of placenta increta, characterized by central placenta previa and velamentous cord insertion, that was associated with multiple comorbidities. Despite these challenges, the mother and the child made a full recovery.

**Keywords:** *Placenta Increta Placenta Praevia, Hysterectomy, Umbilical Cord Velamentous Insertion, MRI, Ultrasonography*

## Background

Placenta accreta is a condition where the placenta becomes abnormally attached to the uterine wall. The term "accreta" comes from Latin, meaning "to adhere to"<sup>[1]</sup>. Irving et al. first described the pathology in the specialized literature in 1937<sup>[2]</sup>. Placenta accreta spectrum (PAS) is classified into three types based on the thickness of trophoblastic invasion: placenta accreta, placenta increta, and placenta percreta<sup>[3]</sup>. Placenta percreta is the most severe form of placental invasion, but it is also the least common with a ratio of 80:15:5<sup>[4]</sup>. Placenta previa and previous cesarean delivery are the main risk factors for this condition<sup>[4]</sup>. Patients with placenta previa have a risk of developing placenta accreta of around 3.3% to 4%, while patients with placenta previa and a previous cesarean section have a risk of 50% to 67%<sup>[5]</sup>. Other risk factors include smoking, a short interval between two cesarean births, and the use of assisted reproduction techniques<sup>[6,7]</sup>. In recent years, the completion of birth by cesarean section has experienced a worrying increase, attracting an increase in this type of pathology<sup>[8]</sup>.

The most common symptom of placenta accreta is vaginal bleeding. The risk of emergent bleeding associated with placenta previa increases with the gestational age and has been reported to be 4.7%, 15%, 30%, and 59% at 35, 36, 37 and 38 weeks of gestation<sup>[9]</sup>. In rare cases, urinary or rectal symptoms may appear, depending on the location of the placental invasion<sup>[10]</sup>.

Abdominal ultrasonography screening in the second trimester can help diagnose placenta accrete<sup>[11]</sup>. The diagnosis of placenta accreta spectrum can be suspected by ultrasound or Magnetic Resonance Imaging (MRI)<sup>[12]</sup>. However, the final diagnosis is established by histopathological examination<sup>[13]</sup>.

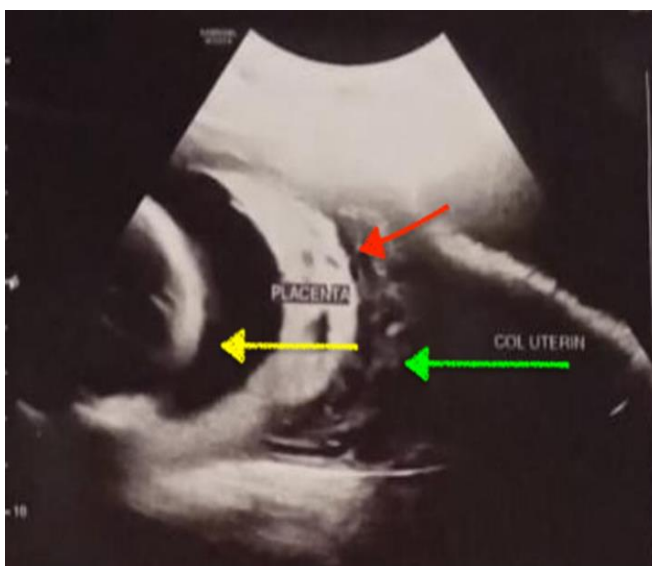
Complications of placenta accreta include appreciable bleeding, hysterectomy, disseminated intravascular coagulopathy, and multiple organ failure, which can ultimately lead to maternal death<sup>[14]</sup>. Fetal complications include preterm birth, intrauterine growth restriction, and intrauterine fetal death<sup>[14]</sup>.

The American College of Obstetricians and Gynecologists recommends that surgical intervention be performed by a team of experienced obstetricians and surgeons from other specialties, such as Urology or General Surgery<sup>[15,16]</sup>. Delivery should be performed

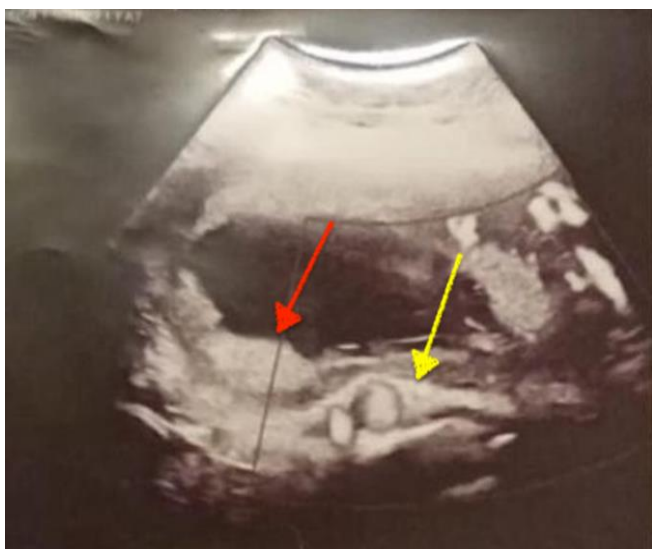
between 34 and 36 weeks of pregnancy, with completion of the delivery by elective cesarean section, followed by hysterectomy if necessary [17]. Conservative treatment of placental adhesion pathology might be helpful, but it can also lead to significant complications such as appreciable hemorrhage, endometritis, and recurrence of placenta accreta spectrum pathology [18].

## Case report

A 32-year-old woman who has had two previous pregnancies presented to the emergency department at 28 weeks and 2 days of gestation with complaints of abdominal pain for 2 days and reduced vaginal bleeding for 12 hours. Her medical history revealed that she had undergone three ultrasounds during this pregnancy; the first at 9 weeks of gestation, another in the second trimester at 15 weeks of gestation, and a third at 22 weeks of gestation. The third ultrasound revealed central placenta previa, velamentous insertion of the umbilical cord, and a possible placenta accrete (Figures 1,2).



**Fig. 1:** Transvaginal ultrasonography performed at 22 weeks of gestation showed central placenta praevia. (Red Arrow- Placenta fully covering the internal ostium of the cervix- Green Arrow. Yellow arrow- Fetal Head)



**Fig. 2:** Transvaginal ultrasonography performed at 22 weeks of gestation showed velamentous insertion of the umbilical cord. (Red Arrow- Placenta, Yellow Arrow- Umbilical Cord)

The patient's obstetrical history includes a vaginal birth at 39 weeks gestation, a spontaneous miscarriage at six weeks, a curettage at eight weeks, and an emergency cesarean section due to fetal distress resulting in a stillborn at term. There have been no incidents of bleeding or trauma during the current pregnancy. In terms of personal pathological history, the patient underwent splenectomy after a car accident, which resulted in costal fractures, pneumothorax, hemoperitoneum, pericranial hematoma. She also suffered from hypothyroidism and depression. During the physical examination, the patient's blood pressure was 107/63 mmHg, pulse rate was 77 beats/min, height was 171 centimeters, weight was 107 kilograms, and BMI was 36.6 kg/m<sup>2</sup> (second-grade obesity). Obstetric examination revealed enlargement of the uterus corresponding to 28-29 weeks of gestation, with no blood loss on vaginal examination.

The results of the abdominal/pelvic ultrasound showed that there is a single live fetus, which corresponds to 29 weeks of gestation. The fetal heartbeat was 138 beats per minute, and the amniotic fluid index was normal. The placenta was covering the cervical opening.

A native MRI showed that the patient has fourth-grade placenta previa and placenta percreta. The placenta had invaded the anterolateral abdominal wall in the right inguinal fossa, which is beyond the uterine serosa.

The patient received four doses of 6 mg/12 h of Dexamethasone intramuscularly to prevent hyaline membrane disease. The treatment was successful, and the patient had no pain or vaginal bleeding.

After eight days of hospitalization, the patient was discharged with the recommendation to return for an elective cesarean section at 34 weeks of gestation.

However, three weeks after the previous hospitalization, the patient returned with minimal vaginal bleeding. The obstetric examination revealed that the uterus had enlarged corresponding to 33 weeks of gestation. The abdominal pelvic ultrasonography showed that there is still a single live fetus at 33 weeks of gestation.

The cervix culture results were positive for *Klebsiella pneumoniae*. The patient was given Amoxicillin plus Clavulanic Acid (825 mg/125 mg) to treat the infection. The urine culture and other infectious investigations were normal. During hospitalization, the patient had two more episodes of vaginal bleeding, which were of minimum to moderate quantity.

Following a comprehensive meeting involving medical professionals from various disciplines, including a gynecologist, anesthesiologist, neonatal doctor, urologist, and general surgeon, the decision was made to proceed with a cesarean section for the birth. The procedure was carried out by a team of experienced professionals, including a senior general surgeon, a senior gynecologist, and a gynecologist specialist, under general anesthesia. A midline incision was made on the skin and a transverse fundal incision on the uterus, resulting in the safe delivery of a live, healthy baby girl weighing 1960 g, with an APGAR Index of 6. Following the birth, a subtotal hysterectomy was performed, while the placenta was left in place. Efforts were made to preserve the two ovaries; however, due to the extensive adherent syndrome and significant bleeding, bilateral adnexectomy was also conducted to ensure effective hemostasis, as shown in Figures 3 and 4.



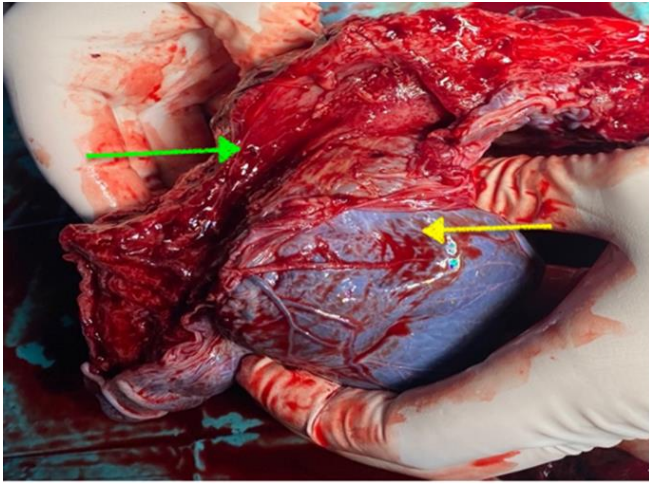


Fig. 3: Intraoperative image showing increased placental adhesiveness Green Arrow- uterine wall, Yellow Arrow- Placenta.

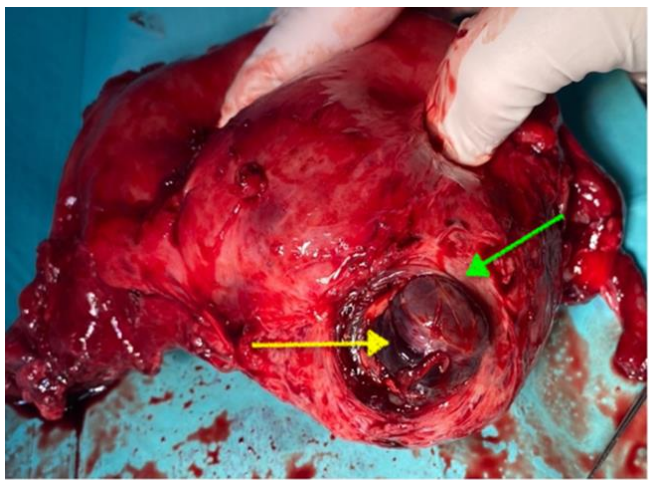


Fig. 4: Central placenta previa. Placenta- Yellow Arrow covering the internal cervical ostium- Green Arrow

#### Outcome and follow-up

Following the surgery, further medical tests showed that the patient had a hemoglobin level of 7.1 grams/ deciliter and a reactive thrombocytosis of 740000 thrombocytes/ deciliter. The patient was given a unit of packed red blood cells and two units of fresh frozen plasma. We closely monitored the patient's condition in the intensive care unit and within 24 hours, she became stable enough to be transferred to the obstetrics ward. After nine days of hospitalization, all medical tests, including the cervical smear and cutaneous scar, indicated normal results. Subsequently, the patient was discharged.

#### Anatomopathological findings

**Macroscopic description:** This subtotal hysterectomy piece weighing 760 g was sectioned at the fundus level, with the placenta on-site at the level of the posterior wall, descending to the internal cervical ostium. With a velamentous insertion, the umbilical cord contained two arteries and one vein.

**Microscopic description:** Subtotal hysterectomy piece, adherent placental disc to the posterior wall of the uterus with the presence of chorionic villi at the level of the myometrium in its outer third at 5 mm from the uterine serosa. Intermediate trophoblasts are also found in the outer third of the myometrium without exceeding the uterine serosa, an aspect that excludes placenta percreta. The remaining myometrium showed areas of adenomyosis, interstitial edema, and thrombosed vessels.

**Final anatomopathological conclusions:** The histopathological appearance is compatible with the diagnosis of placenta increta, placenta previa, velamentous insertion of the umbilical cord, salpinx with paramesonephric cysts, luteal bodies, and albicans bodies at the ovarian level. The microscopy images were obtained by scanning with HURON from t Center for Research and Development in Malignant Pathology (Figures 5, 6, 7).

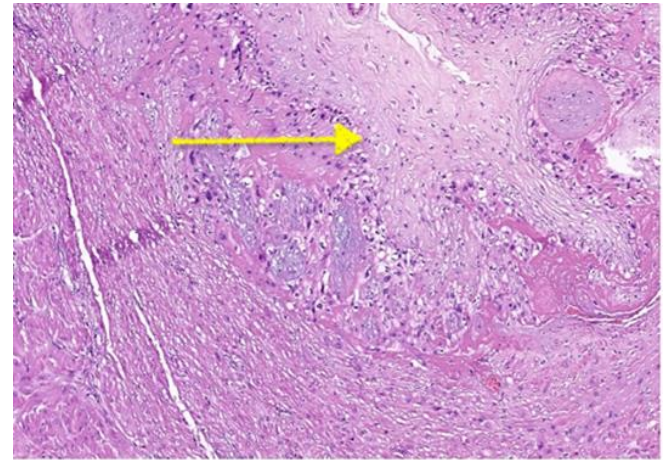


Fig. 5: Presence of chorionic villi in the thickness of the myometrium (Hematoxylin-Eosin, Magnification 200X)

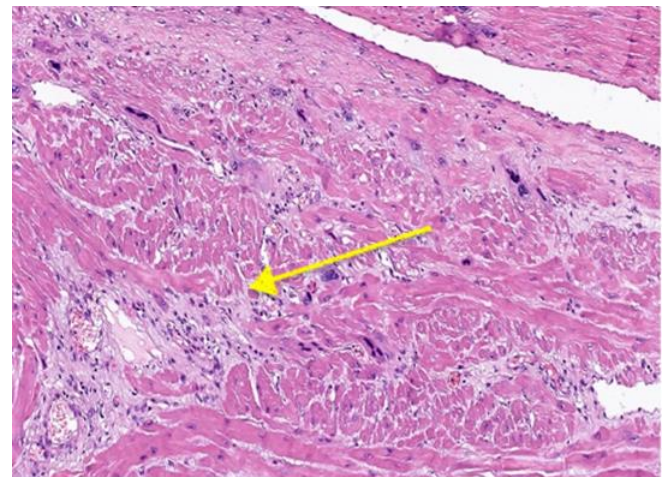


Fig. 6: Presence of extra villous trophoblastic cells- Arrow- at the level of the myometrium (Hematoxylin-Eosin, Magnification 200X)

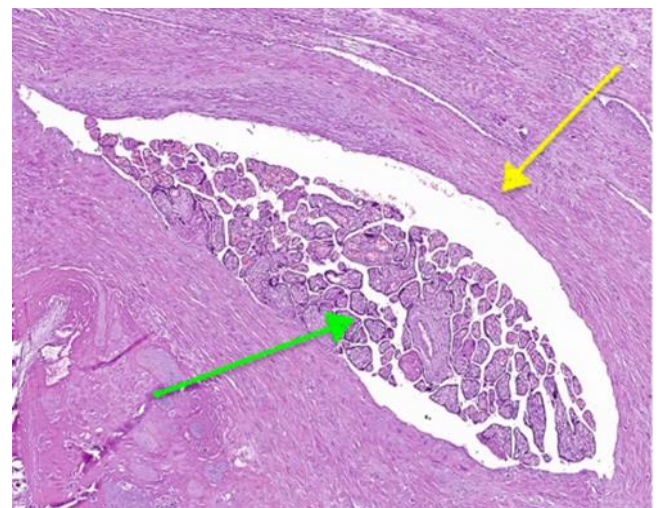


Fig. 7: Chorionic villi- Green Arrow within a vascular lumen- Yellow Arrow (Hematoxylin-Eosin, magnification x200)



## Discussion

In cases where placenta accreta spectrum pathology is suspected, patients will be admitted to a tertiary centre with a gynecologist, anesthesiologist, and surgeon, and if bladder or ureteral invasion is suspected, a urologist will also be necessary <sup>[18]</sup>.

Ultrasound examination can reach a sensitivity and specificity of up to 92 and 86%, respectively, while MRI examination can reach 93% and 91%, respectively <sup>[12,13]</sup>. In our case, MRI revealed placenta percreta pathology, while the ultrasound examination revealed placenta accreta.

The final diagnosis is made by histopathological examination, which can establish the degree of penetrability and trophoblastic invasion with microscopic accuracy <sup>[13]</sup>. In this case, anatomopathological examination revealed placenta increta pathology.

Another important aspect is the history of splenectomy, which can lead to reactive thrombocytosis. After splenectomy, reactive thrombocytosis is found in 75-82% of cases <sup>[19]</sup>. Thrombocytosis, associated with pregnancy, a hypercoagulable state, and pelvic intervention, are situations that increase the risk of developing deep venous thromboembolism. Therefore, low-molecular-weight heparin should be used until the 40th day post-surgery <sup>[20]</sup>. Our patient received low-molecular-weight heparin for the recommended duration, and no thrombotic events were noted.

Antenatal steroids are strongly recommended for respiratory distress syndrome or hyaline membrane disease. However, it is unclear whether repeated courses outweigh the risk of adverse outcomes <sup>[21]</sup>. After a multidisciplinary meeting with the neonatologist's doctor, we repeated the treatment with Dexamethasone 6 milligrams/12 hours in four doses.

## Conclusions

Placenta accreta spectrum is a major obstetric emergency that requires a multidisciplinary team and a correct and fast diagnosis. A correct anamnesis and a fast and prompt diagnosis can lead to a successful outcome of the case.

This presentation outlines a unique case of placenta increta, characterized by central placenta previa and velamentous cord insertion, that was associated with multiple comorbidities. Despite these challenges, the mother and the child made a full recovery.

## Ethics approval and consent to participate

The Commission of Ethics of the hospital approved the case report.

Written informed consent was obtained from the patient for publication of this case report and any accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal.

## List of abbreviations

NA

## Data Availability

NA

## Conflicts of Interest

The authors declares that there is no conflict of interest regarding the publication of this paper.

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## Authors' contributions

All authors read and approved the final manuscript. All authors discussed the results and contributed to the final manuscript.

S.L. collected the data, conceived and designed the analysis

A.B. designed the analysis

D.B. wrote the paper

V.T., S.L. performed the analysis

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