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PLACENTA ACCRETA: CESAREAN SECTION – HYSTERECTOMY A CASE SERIES

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ABSTRACT

Introduction: Acretism is the implantation of the abnormal placenta in the uterine wall, it is classified according to the degree of depth. The incidence of accretion increased worldwide in parallel with the increase in cesarean sections, with 1 case for every 533 births. **Objective:** To evaluate cesarean surgery / hysterectomy (placenta in loco) as a healthy maternal-fetal binomial resolution. **Method:** case series. **Discussion:** The best therapeutic proposal in cases of accretism is the planning of cesarean delivery followed by total abdominal hysterectomy (HTA). Conservative treatment (maintenance of the uterus leaving the placenta in situ) due to the associated high morbidity and mortality should be considered exceptionally. The patient profiles of the cases fit the risk factors mentioned in the studies. All cases had a previous cesarean section and diagnosis of placenta previa; average age: 36.8 years (32-41 years); average parity (gestation): 2.8 (G4-G2). Case 2 was scheduled for cesarean delivery and hypertension. However, during cesarean section, the uterus was preserved and evolved to hemorrhagic shock 4 hours after the end of the procedure, requiring HTA in the 2nd period. In cases 1, 3 and 4, cesarean delivery and hypertension were planned without complications. In all cases, the final treatment evolved with hysterectomy, meeting the literature as the best therapy. **Final considerations:** Good conduct in the face of accretism with prior diagnosis through USG and Doppler, delivery planning in a referral center (reserve of hemoconcentrates and ICU) with an experienced and multidisciplinary team has the power to change the prognosis.

Keywords: Placental accretism, Cesarean section, Hysterectomy, Risk factors, Case series.

INTRODUCTION

Placenta accreta is defined as an abnormal implantation into the uterine wall, extending beyond the endometrium and invading the myometrium, potentially reaching the serosa or even infiltrating adjacent organs.[1,2]

Normally, the chorionic villi penetrate the compact and superficial portion of the decidua and do not reach the spongy layer. This allows for placental separation during detachment. Endometrial and myometrial damage are responsible for the abnormal implantation of the placenta, with a thin

or absent basal decidua (spongy layer) and imperfect development of the fibrinoid layer (Nitabuch's layer).[1,3] Penetration into the spongy layer and myometrium prevents decidual shedding and is characteristic of placental accreta.[1,4]

The ACOG (American College of Obstetricians and Gynecologists) reported in 2012 that the incidence of accreta has increased worldwide in parallel with the rise in cesarean sections, occurring in 1 case for every 533 births (Committee on Obstetric Practice, 2012).[5] In 1950, the occurrence was much rarer, at 1 in every 30,000 births.[6,7]

Placenta accreta has a high mortality rate of 6 to 7%, with the main complication being hemorrhagic shock, which can worsen the clinical condition, evolving into disseminated intravascular coagulation (DIC), adult respiratory distress syndrome (ARDS), renal failure, and even maternal-fetal death.[5,8,9]

Early diagnosis is crucial in this pathology. Pregnant women with a history of previous cesarean section, placenta previa, multiparity, maternal age over 35 years, and endometrial defects have an increased risk of accreta.[1,5] Therefore, ultrasound (US) should be requested to evaluate the placenta, as it is an excellent diagnostic method. When ultrasound is inconclusive, magnetic resonance imaging (MRI) may be requested.[5]

The incidence of placenta accreta is on the rise, and planning for delivery with cesarean section and abdominal hysterectomy (AH) through prior diagnosis has the potential to change the prognosis of this condition.

Therefore, the objective of this work is, through a case series, to evaluate the surgical intervention of cesarean section/hysterectomy (placenta in situ) as a healthy resolution for the maternal-fetal binomial.

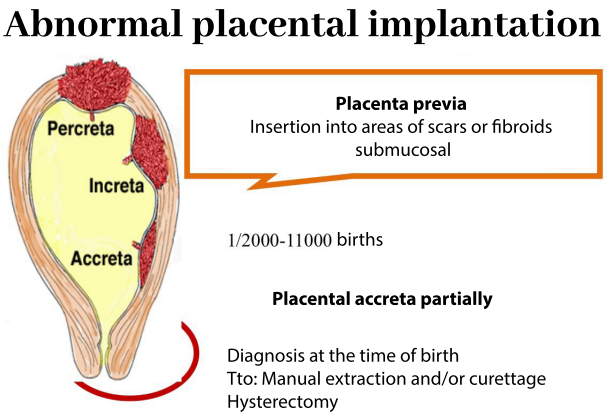

Figure 1: Placental accreta and its types.

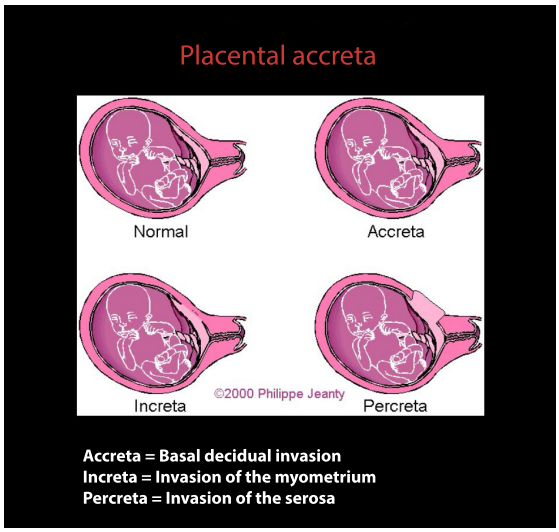

Figure 2 – Placental accreta associated with placenta previa.

THEORETICAL FRAMEWORK

In placenta accreta, implantation occurs abnormally in the uterine wall and is classified according to the depth of penetration as follows[2]:

Placenta accreta: adheres to the myometrium[5].

Placenta increta: invades the myometrium.

Placenta percreta: penetrates the myometrium, reaching the serosa, and may occasionally invade adjacent organs such as the bladder, ureter, intestine, and omentum[5].

Histological studies of placentas with accreta showed a diagnosis of accreta, increta, and percreta in 79%, 14%, and 7%, respectively.[1,6,10]

Previous cesarean section is considered the most important predisposing factor for placenta accreta, with studies concluding that the higher the number of surgeries, the greater the risk.[6,11-14] Other risk factors include placenta previa, maternal age over 35 years, multiparity, endometrial defects (Asherman's syndrome), and submucosal leiomyomas.[1,6]

Prenatal diagnosis is important for birth planning. In the presence of placenta previa and a previous cesarean section, it is crucial to request an ultrasound with an experienced team for the diagnostic screening of placental accreta.[5] When ultrasound is inconclusive and in cases of placenta previa with posterior predominance, magnetic resonance imaging (MRI) should be requested.[5]

Ultrasound (US) has a sensitivity of 77% to 93% and specificity of 71% to 96%. The main signs of accreta are: loss of the hypoechoic retroplacental space, thinning of the underlying myometrium, irregularity at the interface between the uterus and bladder, protrusion of the placenta into the bladder, irregular lacunae, increased vascularization, and turbulent flow on Doppler.[5]

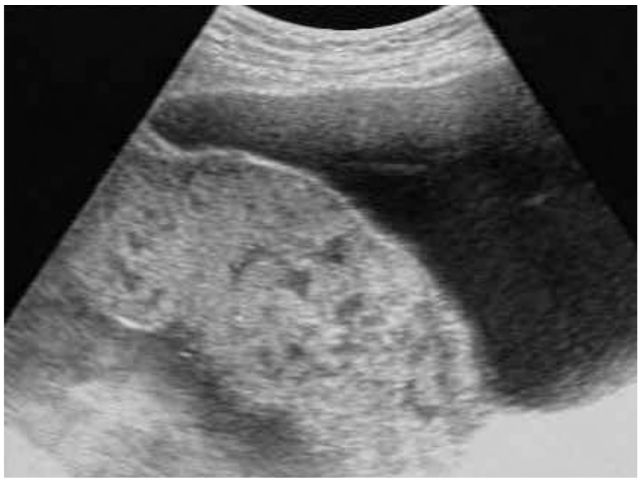

Figure 3 – Loss of the hypoechoic retroplacental space, thinning of the underlying myometrium, irregularity at the interface between the uterus and bladder, protrusion of the placenta into the bladder.

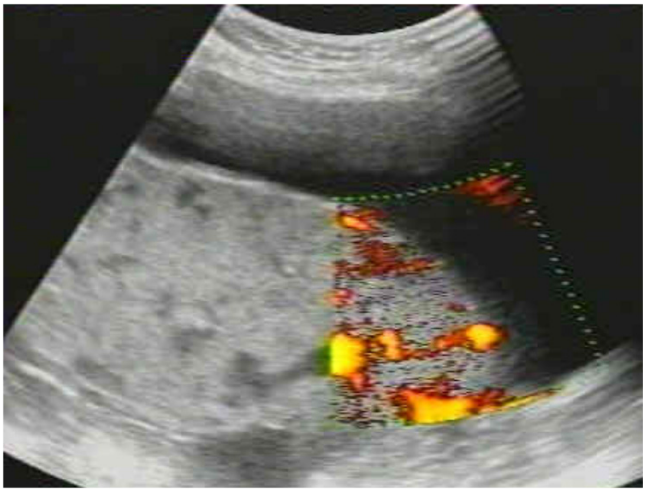

Figure 4 – Irregular lacunae, increased vascularization, and turbulent flow on Doppler.

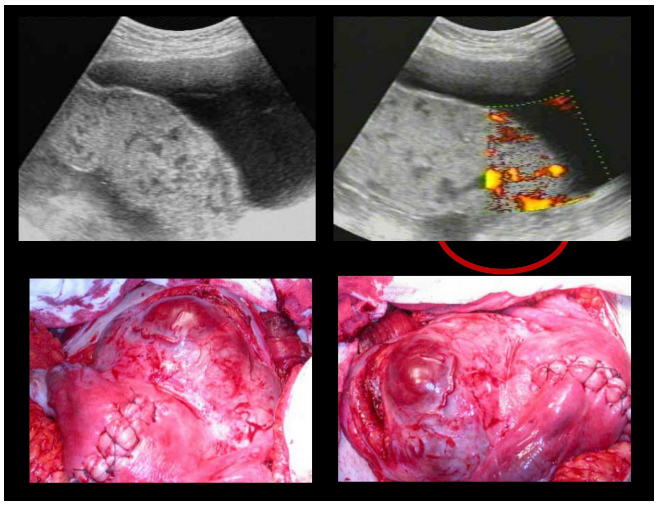

Figure 5: Upper image demonstrating placenta accreta with exuberant hypervascularization, and lower image showing the cesarean section, with evidence of the placenta reaching the serosa.

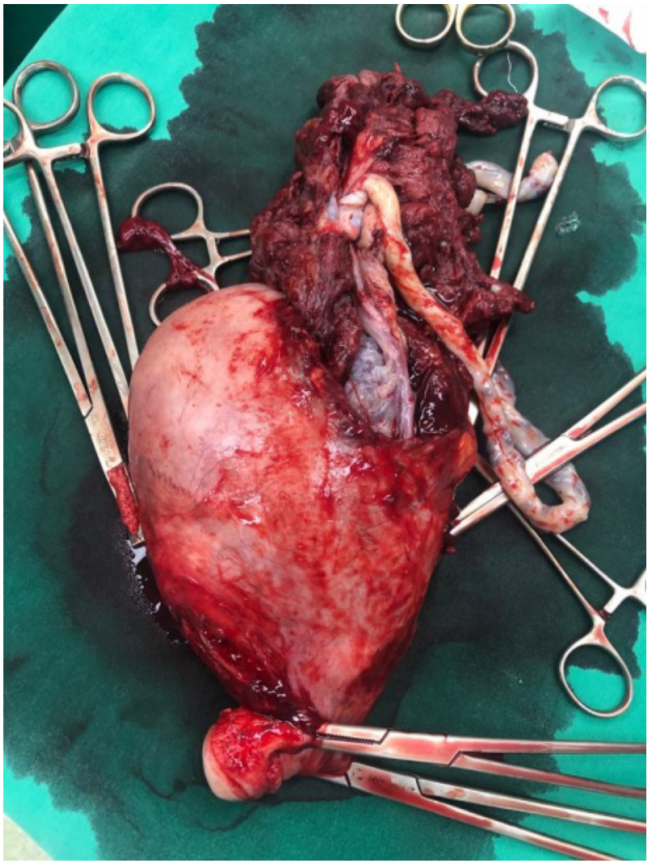

Figure 6: Illustrative image of a uterus with placenta accreta.

Magnetic resonance imaging (MRI) has a sensitivity of 80% to 88% and specificity of 65% to 100%. The main signs of placenta accreta are: placental protrusion, heterogeneous placenta, dark bands within the placenta on T2-weighted images, and focal interruption of the myometrial wall.[15],[16]. MRI is useful for characterizing the type of placenta accreta (placenta accreta, increta, percreta) and determining if there has been invasion of neighboring structures.[8],[9]. The use of the paramagnetic contrast gadolinium is not fully established during pregnancy, and thus, its routine use is not recommended.[5]

The main complication of placenta accreta is hemorrhage, which can lead to disseminated intravascular coagulation (DIC), adult respiratory distress syndrome (ARDS), renal failure, peripartum hysterectomy, and maternal death.[5]

There is controversy regarding the ideal gestational age for termination. It is recommended to occur between 34 and 37 weeks due to pulmonary maturation.[17]

Birth planning is of utmost importance as it improves the prognosis of the condition. Pulmonary maturation should be performed in the second trimester due to the risk of prematurity. Pregnant women and their families should be informed about the risks of accreta (risk of blood component transfusion, organ injury, infections, and death). The delivery should be planned at a reference center with a reserve of blood products and maternal and neonatal intensive care units (ICU), with an experienced and multidisciplinary team for managing this pathology.[5]

Intraoperative planning involves scheduled elective cesarean section with an experienced and focused team, anesthesia with spinal anesthesia followed by general anesthesia, bladder catheterization prior to the procedure, conventional incision (Pfannenstiel) or median incision, high corporal uterine incision (transverse or longitudinal), total hysterectomy with placenta in situ, and the patient being transferred to the postoperative period in the ICU.

There are optional procedures that can be used during the procedure, such as balloon catheterization, in which the interventional radiologist temporarily occludes the aorta or the internal iliac arteries, compression of the hypogastric arteries, ligation of the hypogastric arteries (temporary or permanent), and compression of the aorta.[15]

There is controversy regarding the effectiveness of temporary occlusion of the internal iliac arteries to reduce blood loss and surgical time (evidence level 2C). The ACOG, in 2012, stated that there is no evidence for or against temporary occlusion of the internal iliac arteries, and further studies are needed.[16],[18]

Some authors recommend leaving the placenta in situ for those who wish to preserve fertility. Methotrexate in cases of in situ placenta has been evaluated in some studies, but its use is debated by various authors, as there is no trophoblast cell division in the third trimester, making it ineffective. These two approaches should be further evaluated for clinical use, due to the risks of infection, bleeding, emergency hysterectomy, and other clinical complications, as well as the risk of maternal death.[5]

OBJECTIVES

GENERAL OBJECTIVE:

Evaluate the importance of prenatal diagnosis and surgical intervention in pregnancies with placental creta)accretion.

SPECIFIC OBJECTIVE:

Considering the prenatal diagnosis of placenta accreta, evaluate the surgical intervention of cesarean section/hysterectomy (placenta in situ) as a healthy resolution for the maternal-fetal dyad.

RESULTS AND DISCUSSION

Presentation of 4 clinical cases of placental accretion in a "case series" format, where the probable diagnosis was made through obstetric ultrasound with Doppler, and the decision was made to prepare for delivery through cesarean section with hysterectomy with placenta in situ.

CASE REPORTS

CASE 1

Patient, VGS, 38 years old, G4P3A0, resident of Goiatuba, Goiás, received prenatal care in her city with a diagnosis of toxoplasmosis during pregnancy, treated with spiramycin, and denied other comorbidities or complications. Due to the toxoplasmosis diagnosis, she was referred to Goiânia where she underwent amniocentesis, ruling out vertical transmission, but discovered a central-total placenta previa with accretion. The patient did not experience any bleeding or other complications throughout the pregnancy. Therefore, an elective cesarean section with abdominal hysterectomy was scheduled at 38 weeks and 3 days, on 09/05/2020. The cesarean-hysterectomy plan included: prior preparation of blood bank,

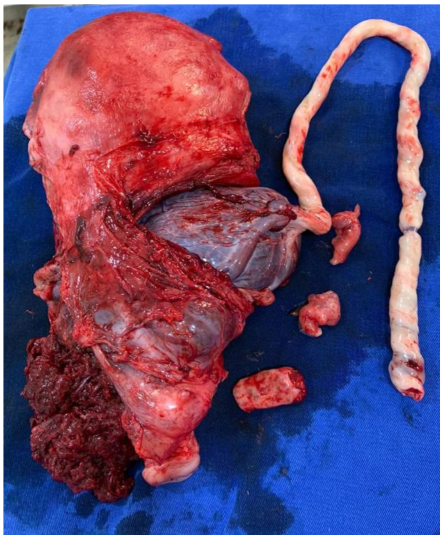

Figure 7: Image of the surgical specimen from case 1 showing the uterus with placental accretion.

CASE 2:

Patient, LOM, 41 years old, G2P1A0, resident of Goiatuba, Goiás, was receiving prenatal care in her city and was treating hypothyroidism during pregnancy with Puran 50mcg, with no other comorbidities or complications. During pregnancy monitoring, she was diagnosed at 32

weeks with posterior/central-total placenta previa with accretion and was referred to Goiânia. The patient did not experience any bleeding or other complications during the pregnancy. Therefore, an elective cesarean section with abdominal hysterectomy was scheduled for 39 weeks on 05/07/2020. However, during the operation, her husband requested that the medical team attempt to preserve the uterus. As a result, the therapeutic plan was changed, and a conservative approach was adopted, keeping the uterus with placenta in situ. Four hours after the surgery, the patient presented with hemorrhagic shock, requiring re-surgery and hysterectomy. During the surgery, the patient received the 4 units of red blood cell concentrates and 2 units of plasma as planned and was transferred to the ICU, where she stayed for 15 days. In the ICU, she required an additional 2 units of red blood cell concentrates and developed a pulmonary complication (pneumonia), necessitating intubation for 2 days. After ICU discharge, she spent 2 days in the ward before being medically discharged.

CASE 3:
Patient, NVCO, 36 years old, G3P2A0, monochorionic diamniotic twins, resident of Anápolis, Goiás, received prenatal care in her city and had gestational hypertension with preeclampsia and maternal tachycardia, being monitored by both a cardiologist and her obstetrician. At 22 weeks of pregnancy, she was diagnosed with fetofetal transfusion and central-total placenta previa with accretion, and was referred to Goiânia where she underwent fetoscopy with laser treatment and lung maturation without complications. At 25 weeks of gestation, she began experiencing persistent vaginal bleeding due to the placenta previa, and at 27 weeks and 5 days, pregnancy termination was indicated. On 09/11/2020, a cesarean section with abdominal hysterectomy was performed as planned in case 1, and 3 units of red blood cell concentrates and 2 units of plasma were transfused during the surgery. The surgery was carried out as planned, and the patient stayed in the ICU for 2 days and 5 more days in the ward before being discharged. Unfortunately, the newborns passed away due to prematurity, and the patient developed depression.

CASE 4:
Patient, TGCOL, 32 years old, G2P1A0, resident of Jataí, Goiás, received prenatal care in her city with no comorbidities or complications during pregnancy, and no history of Müllerian malformation or previous leiomyomatosis. From the beginning of her pregnancy, she was diagnosed with placenta previa, but at 30 weeks, a central-total placenta previa with accretion was identified. She began monitoring in Goiânia and underwent lung maturation. At 33 weeks and 1 day, she started experiencing vaginal bleeding, and a cesarean section with planned hysterectomy was scheduled for 10/07/2020, as mentioned in case 1. The procedure was carried out as planned, and she was transferred to the ICU afterward. She stayed in the ICU for 2 days and was discharged 1 day later in good general condition.

DISCUSSION

The obstetrician, by identifying risk factors, performing a preoperative diagnosis (ultrasound), and providing appropriate intrapartum management, can significantly improve the prognosis of placental accretion.

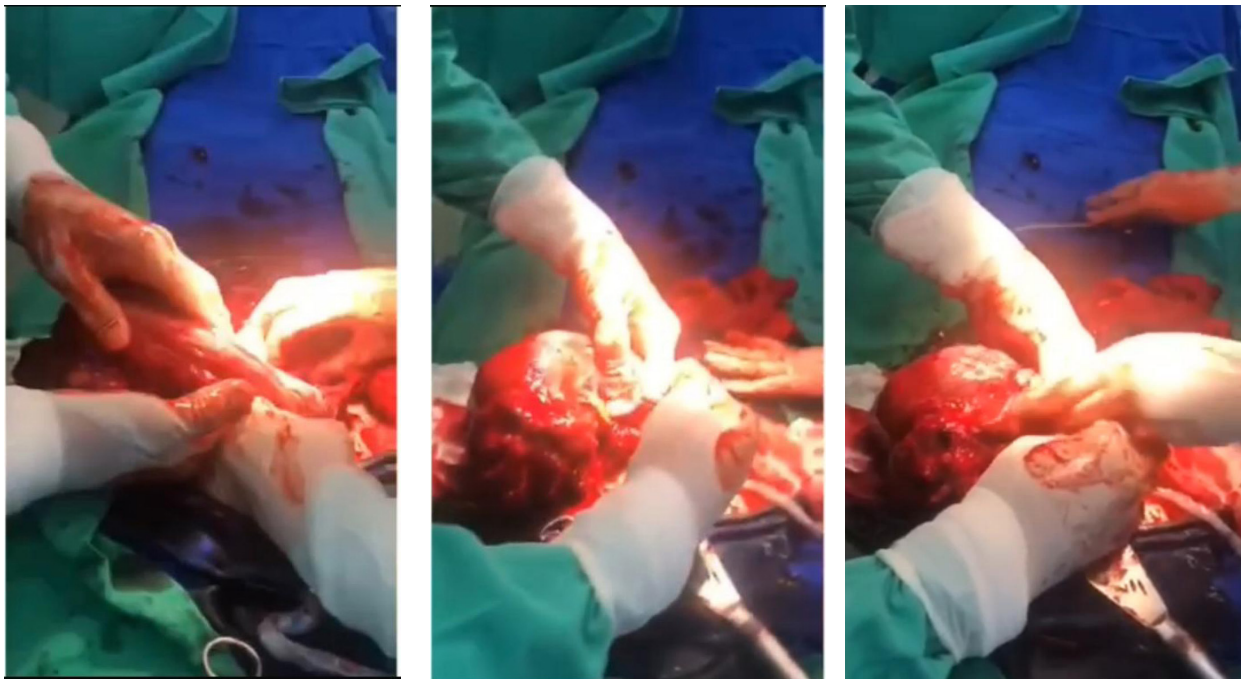

Figure 8: Cesarean section surgery with total hysterectomy due to placental accreta presenting significant hemorrhage.

The patient profiles in these cases align with the risk factors described in the literature. All cases had a history of a previous cesarean section and a diagnosis of placenta previa, with an average age of 36.8 years (32–41 years) and an average parity (gravidity) of 2.8 (G4–G2). Thus, these findings are consistent with the risk factors cited in the literature: previous cesarean section, placenta previa, multiparity, and maternal age over 35 years.

Ultrasound (USG) with Doppler facilitates visualization through the detection of turbulent flow, the disappearance of the retroplacental hypoechoic space anterior to the myometrium, and the appearance of dilated vessels within the myometrium.[9,19] USG combined with Doppler has a sensitivity of 81.1% and a specificity of 98.9%. However, when analyzing anterior and posterior placentas separately, detection rates of 89.7% and 50%, respectively, are observed.[9]

In this study, all the presented cases underwent ultrasound with Doppler, which enabled the prenatal diagnosis of placental accretion and facilitated delivery planning.

The best therapeutic approach for suspected and confirmed cases of placental accretion is the planned cesarean delivery followed by a total abdominal hysterectomy.[1,17,20]

Total abdominal hysterectomy is considered the ideal treatment for cases of placental accretion. After fetal extraction, the procedure should be performed with the placenta left in situ, as attempts at placental detachment often result in severe hemorrhage.[1]

Peripartum hysterectomy is the best option for patients who do not wish to conceive in the future.[17,20]

The physician must counsel pregnant patients and their families about the pre-, intra-, and postoperative risks, including blood transfusion, organ injury, ICU admission, infection, and

the risk of death. The procedure should be performed by a well-trained team in a specialized center with access to blood component reserves and ICU facilities.[5]

In cases 1, 3, and 4, cesarean deliveries followed by abdominal hysterectomy were planned and performed without complications or adverse events. This reinforces that proper planning of the cesarean section with abdominal hysterectomy—covering the pre-, intra-, and postoperative stages—improves the prognosis of placental accretion, in line with findings from previous studies.

Conservative management of placental accretion, leaving the placenta in situ, may be considered in rare cases when fertility preservation is desired. However, these patients must remain under strict monitoring and be fully informed about the significant risk of severe complications.[1]

Conservative treatment (maintaining the uterus and leaving the placenta in situ) should be considered exceptional due to the high morbid-mortality associated with it.[21]

In case 2, a cesarean delivery with abdominal hysterectomy (HTA) was initially planned. However, during the procedure, the decision was made to preserve the uterus with the placenta in situ. The patient developed hemorrhagic shock 4 hours after the surgery, requiring emergency hysterectomy in a second stage. Conservative treatment should be considered only as an exception, as it carries significant risks of complications.

In all the reported cases, the final treatment involved abdominal hysterectomy (HTA), which aligns with the literature as the best therapeutic approach. Conservative treatment (maintaining the uterus and leaving the placenta in situ) exposes the patient to many complications and should be chosen only in rare cases, following thorough medical counseling for the pregnant patient and their family.

The ideal gestational age (GA) for intervention is still controversial. There is consensus that it should be between 34 and 37 weeks due to pulmonary maturation.[17] According to Zugaib[1], for patients with an early diagnosis, an elective cesarean section at 36/37 weeks is recommended to reduce the risk of complications.

The average gestational age for pregnancy termination in all cases was 34 weeks and 6 days (range: 27 weeks and 6 days to 39 weeks). In case 3, a monochorionic diamniotic twin pregnancy with twin-to-twin transfusion syndrome, the pregnancy was terminated at 27 weeks and 5 days due to vaginal bleeding. The fetuses were born alive but did not survive due to prematurity. In the other cases, all the newborns survived.

Figure 9: Immediate postoperative cesarean section/total hysterectomy for placental accreta and drainage of the peritoneal cavity.

FINAL CONSIDERATIONS

Placental accreta is a pathology with high mortality, but proper management with early diagnosis and birth planning has the potential to improve the prognosis.

Early diagnosis is of fundamental importance in this pathology. Pregnant women with a history of previous cesarean section, placenta previa, multiparity, maternal age over 35 years, and endometrial defects are at increased risk for accreta. Previous cesarean section is considered the most relevant risk factor, with the risk of placental accreta increasing with the number of previous surgeries.

Ultrasound is an excellent tool for evaluating placental pathologies. Therefore, if requested during prenatal care for patients with risk factors, early diagnosis will assist in planning the appropriate treatment.

The planning (preoperative, intraoperative, and postoperative) of the delivery with pulmonary maturation, reserve of blood concentrates, in a tertiary hospital with maternal and neonatal ICU and an experienced multidisciplinary team, changes the prognosis of placenta accreta, improving maternal and fetal survival.

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