

Placenta Percreta Left in Situ Invades the Sigmoid Colon: A Case Report

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Abstract

Background: Placenta percreta rarely invades pelvic or abdominal organs other than the urinary bladder or rectum. The optimal management of this condition is yet to be determined. For patients who wish to preserve their fertility, uterine artery embolization has been employed in an attempt to decrease maternal morbidity and preserve fertility.

Case: Herein, we present the case of a 32-year-old female patient presenting for low anterior resection of the colon due to invasion by placenta percreta left in situ.

Conclusion: Invasion of sigmoid colon by placenta percreta left in situ as part of conservative management of placenta percreta has never been reported in the medical literature. A multidisciplinary approach involving an interventional radiologist, urologist, colorectal surgeon, and obstetrician is required to obtain the best outcome.

Keywords: Percreta left in situ, Invasion of the sigmoid colon

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Introduction

Normal placentation involves the adherence of the blastocyst to the decidualized endometrium. On the other hand, abnormal placentation occurs when the placenta adheres to the myometrium instead of the decidua, leading to what is nowadays known as the accreta spectrum. Risk factors for the accreta spectrum include endometriosis and uterine scarring due to previous cesarean sections, previous curettage, or previous manual removal of a retained placenta (1). Having said this, the incidence

of abnormal placental adherence has increased tenfold over the last 50 years (2, 3), which parallels the increasing rates of cesarean sections. Abnormally adherent placenta is classified according to its degree of invasion of the myometrium. When the placenta penetrates completely through the full thickness of the myometrium, it is classified as placenta percreta, which possibly involves adjacent structures. Pelvic structures, mainly the urinary bladder and the rectum, are most commonly involved; small bowel or sigmoid colon involvement is rare. To the best of our knowledge, no cases of sigmoid colon involvement

by placenta percreta left in situ as conservative management of placenta percreta have been reported in the literature.

Case Report

A previously healthy 32-year-old woman (gravida 2, para 2) presented with abdominal pain two weeks after a cesarean section. She had a history of two cesarean sections. At the time of her most recent delivery, she was 36 weeks pregnant, as confirmed by an ultrasound, with a diagnosis of placenta percreta confirmed by ultrasound and MRI with the invasion of the sigmoid colon. The patient was counseled regarding all treatment options, including conservative management. Her obstetrician informed her that the conservative approach to her case is newly adapted with no solid universal guidelines. The whole surgical procedure and the postoperative risks and complications were explained, and she opted for conservative management.

At the time of the scheduled cesarean section, the patient's vital signs were stable, and she had no vaginal or rectal bleeding or hematuria. The patient was scheduled for an elective cesarean section under general anesthesia. Six units of packed red blood cells, six units of fresh frozen plasma, and six units of cryoprecipitate were prepared. Dexamethasone was given to improve fetal lung maturity. A baby girl weighing 2.2 kg with an Apgar score of 7 and 9 at 1 and 5 minutes, respectively, was delivered. No attempt was made to separate the placenta, which was left in situ, and the cord was ligated proximal to the placental insertion.

Surgery was smooth with no reported intraoperative complications and an estimated intraoperative blood loss of 500 ml. After delivery and while in the operating theater, uterine artery embolization was performed successfully. Post-surgery, the patient was transferred to an intensive care unit for monitoring. The patient was transferred to a regular ward 48 hours post-delivery and was discharged on day ten after surgery.

Fourteen days post her elective cesarean section and uterine artery embolization as a conservative treatment for a known placenta percreta invading the sigmoid, the patient presented with a two-day history of abdominal pain, mainly located on the left side of the abdomen. On physical exam, her vitals were stable with signs of peritonitis. Laboratory workup showed leukocytosis and elevated inflammatory markers. A CT scan of the abdomen and pelvis showed a mass-like structure in the wall of the sigmoid colon, with possible abscess formation. Consequently, the patient was transferred to our institute for further management, where an open low anterior resection with primary end-to-end anastomosis was done. The patient had an uneventful hospital stay and was discharged home on day six post-surgery.

Macroscopically, the histopathologic examination

of the specimen showed a left colon measuring 29 cm in length and 5 cm in diameter with a firm subserosal mass of 5×4×3 cm located 10 cm away from the closest surgical margin. The colonic lumen was patent; mucosa over the mass was pale and edematous. Three umbilicated hemorrhagic papules measuring 0.4 cm were noted over the mucosal surface, continuous with a fistulous tract that led and opened into the subserosal mass that appeared to be filled with pus. A grayish spongy tissue measuring 3×2×1 cm firmly adhered to the subserosal mass. Microscopically, sectioning showed intramural abscesses with sinus tract formation discharging fibrinopurulent material and necrotic chorionic villi into the colonic lumen through umbilicated papules (Figure 1). Some of the papules consisted of serosal endometriosis; others turned out to be subserosal placental implantations. The placental tissue featured remotely infarcted chorionic villi with necrosis and dystrophic calcification (Figures 2 and 3). Bowel submucosa, muscularis, and subserosa were thickened, edematous, and showed acute and chronic inflammatory cell infiltrate, including abundant foamy histiocytes, lymphocytes, eosinophils, and neutrophils. The pericolonic fat surrounding the bowel wall showed inflammation and reactive fibrosis. The final diagnosis was serosal endometriosis with post-cesarean section placental implantation resulting in intramural abscess and a sinus tract with intraluminal discharge.

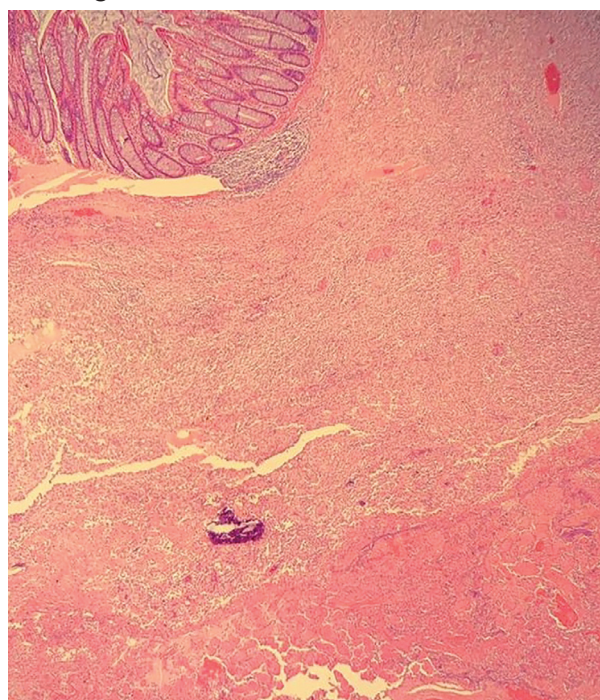


Figure 1: Section showing intact bowel mucosa (upper left) with underlying abscess, dystrophic calcification, and placental tissue (lower right).

Discussion

The morbidly adherent placenta, known as placenta accrete, poses a significant obstetric challenge. It

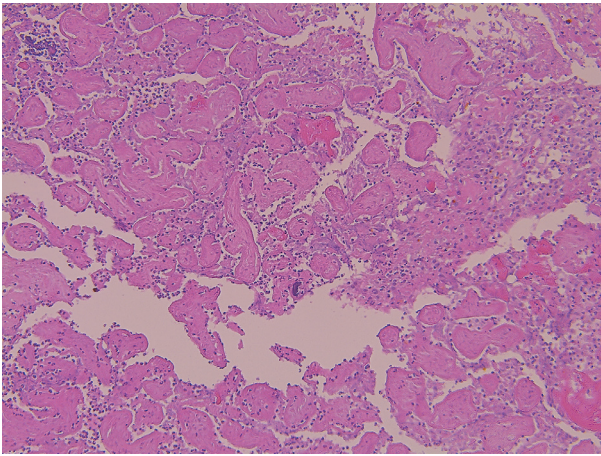


Figure 2: Higher power view of infarcted placental villi.

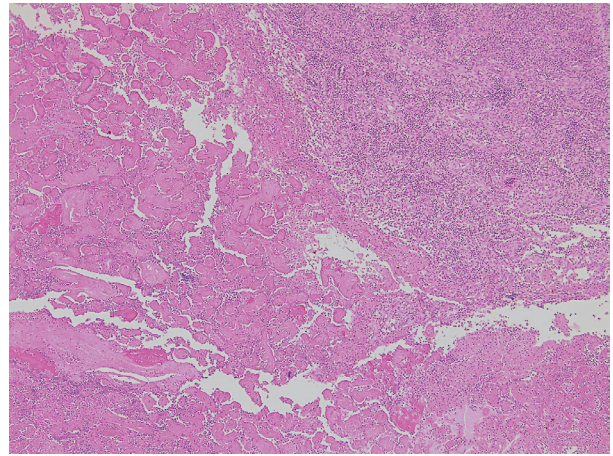


Figure 3: Sinus tract abscess intermixed with infarcted placental tissue.

is divided into subtypes based on the degree of invasion into the myometrium. Placenta percreta is the most severe form, whereby the placenta penetrates completely through the full thickness of the myometrium, with the possibility of invasion of nearby structures. Once a rare diagnosis, it is now the leading cause of postpartum hemorrhage and an indication for a gravid hysterectomy (4). This abnormal adherence has significant clinical implications that can result in severe maternal and neonatal morbidity and mortality, manifested by an increased risk of heavy bleeding and the need for transfusion of blood products and its associated consequences, including dilutional and consumptive coagulopathy, acute transfusion reactions, transfusion-associated lung injury, acute respiratory distress syndrome, and electrolyte abnormalities.

A hysterectomy is sometimes necessary to control bleeding, while reoperation for postoperative bleeding is not uncommon. Other consequences include postoperative thromboembolism, infection, multisystem organ failure, and maternal death (5, 6). Add to this the risk of injuring nearby organs including the bowel, bladder, and ureter, neurovascular structures in the retroperitoneum, and lateral pelvic sidewalls. The most commonly affected pelvic structure is the urinary bladder. Since the initial report by Ochshorn and colleagues (7) in 1969, approximately 40 cases of placenta percreta invading the urinary bladder have been reported. Case reports on placenta percreta with the invasion of adjacent organs other than the urinary bladder are rare. Even rarer is the invasion of the sigmoid colon by a placenta percreta left in situ following cesarean section and uterine artery embolization as conservative management of placenta percreta.

The exact incidence of maternal mortality related to placenta accreta and its complications is unknown, but it has been reported as high as 6-7% in case series (8, 9). The optimal management of this condition is yet to be determined. For patients who wish to preserve their fertility, uterine artery embolization has been employed in an attempt to decrease maternal morbidity. Uterine artery embolization is a well-established method for control of bleeding, whether

as adjuvant control for intraoperative blood loss or prophylactic postoperative use to decrease the risk of postpartum bleeding. The patient in this report underwent uterine artery embolization once directly after the cesarean section and presented two weeks after the procedure for surgical management of the colon due to invasion by placenta percreta left in situ.

Conclusion

Placenta percreta can affect any neighboring uterine structure, considered a life-threatening condition. Conservative management for placenta percreta is slowly evolving, and its clinical course remains poorly understood. The multidisciplinary approach for its management is optimal, involving an interventional radiologist, urologist, colorectal surgeon, obstetrician, and gynecologist. Every attempt should be made for antenatal diagnosis, allowing for better preoperative planning.

Statement of Ethics

This research complied with the guidelines for human studies and was conducted ethically in accordance with the World Medical Association Declaration of Helsinki. Ethical approval was not required as per hospital guidelines and rules. Written informed consent was obtained from the patient to publish the case as well as all the associated images.

Data Availability

All data analyzed in the case report is included in the article. More details are available from the corresponding author upon reasonable request.

Authors' Contribution

M.K.S contributed to the conception, design, acquisition of the work and Writing the work. F.G, S.Y and E.S contributed to the conception,

design and acquisition of the work and drafting and revising the work critically for important intellectual content. All authors have read and approved the final manuscript and agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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Conflicts of interest: None declared.

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