

Management of Placenta Percreta with Bladder Invasion

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ABSTRACT

Placenta percreta is an abnormal penetration of placental tissue through entire uterine wall and encroachment into the surrounding organs such as bladder and rectum. We present a case report of placenta percreta with bladder invasion to highlight the catastrophic nature of this clinical entity, which, if managed appropriately, is associated with a better outcome. A 29-year-old gravida 3, para 2 (both cesarean deliveries) was referred from a peripheral clinic to our tertiary care hospital with suspicion of major placenta previa accreta. She presented at 36 weeks gestation with complaints of continuous mild to moderate lower abdominal pain and hematuria for

two days. Doppler ultrasound found central placenta previa extending up to bladder mucosa. Surgery was planned in collaboration with a multi-disciplinary team and was performed the following morning. A healthy baby girl was delivered by cesarean section followed by subtotal hysterectomy and bilateral internal iliac artery ligation leaving behind the whole placenta due to its morbid adherence to the bladder. Postoperatively methotrexate therapy was given. During follow-up, patient complained of urinary incontinence and underwent surgical correction in collaboration with a urologist. Patient had complete recovery at one year follow-up.

Keywords: Placenta previa percreta; Hematuria; Bladder invasion; Cesarean section

INTRODUCTION

Placenta percreta is an abnormal penetration of placental tissue through the uterine wall with encroachment into surrounding organs such as bladder or rectum.

There is a well-known association between repeated cesarean sections, placenta percreta and abnormal placentation [1]. Other risk factors include previous uterine surgery such as myomectomy, dilation and curettage, and endometritis [2, 3]. Bladder invasion with placenta percreta is a rare occurrence, but can be lethal both for mother and fetus. In literature, different management strategies have been mentioned, varying from conservative to radical approaches depending upon the extent of placental invasion, involvement of other organs, intraoperative hemorrhage and expertise of the surgeon [4]. In our case, less radical surgical procedure was adopted with better outcome.

CASE REPORT

A 29-year-old female gravida 3, para 2, with history of two cesarean sections, was referred to our tertiary care hospital at 36 weeks of gestation with complaints of lower abdominal pain and hematuria. She had pallor with blood pressure 110/70 mm Hg and regular pulse 90/min. Laboratory investigations showed hemoglobin 8.0 gm/dL, and numerous red blood cells and bacteria on urine microscopy. A previous ultrasound report showed a single alive fetus with major placenta previa and color flow Doppler (done after admission) showed placenta previa percreta with urinary bladder invasion.

Surgery was planned in collaboration with a multi-disciplinary team including general surgeons, urologist, hematologist and anesthetist. Large vascular channels were visible in the lower segment of the uterus. A live female baby weighing 2.7 kg was delivered through classical scar. As there was no cleavage plane between bladder and lower segment of the uterus to direct surgical dissection, a subtotal hysterectomy with ligation of internal iliac arteries was performed

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and whole placenta was left in the abdomen after cutting the umbilical cord. Methotrexate therapy was started 48 hours after surgery for placental resorption. Patient was discharged 10 days postoperatively. Follow-up MRI abdomen and beta human chorionic gonadotrophin hormone (beta-HCG) were indicative of adequate placental resorption. Patient was re-admitted with high-grade fever and hematuria associated with urinary incontinence. Urine microscopic examination found numerous pus and red blood cells. A cystoscopic examination found a big hole in the bladder base. Patient underwent bladder repair surgery by urologist during which shrunken placenta was removed. Patient completely recovered and was without any urinary problems at one year of follow-up.

DISCUSSION

The incidence of placenta percreta has risen substantially due to the increased rate of cesarean sections. A 10-fold rise has been reported during the past 50 years, and incidence rate varies between 1/210 to 1/2500 births [5]. Morbidly adherent placenta occurs when there is abnormally firm attachment of placental villi to the uterine wall with the absence of the normal

Figure 1: Subtotal hysterectomy with placenta in-situ in a case of placenta percreta with extensive bladder invasion

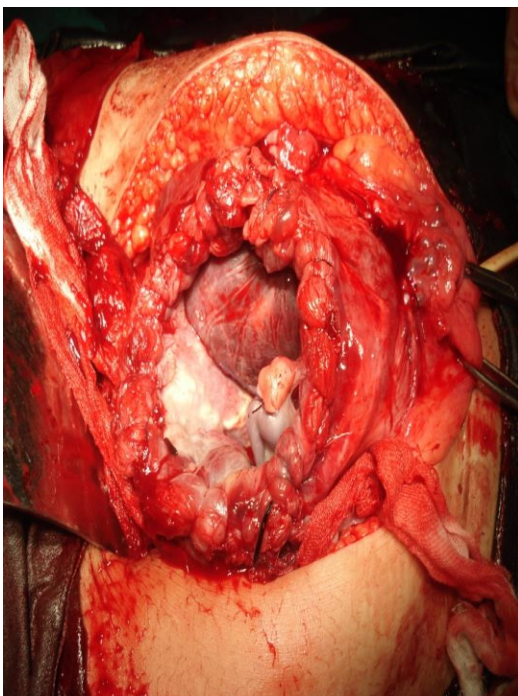
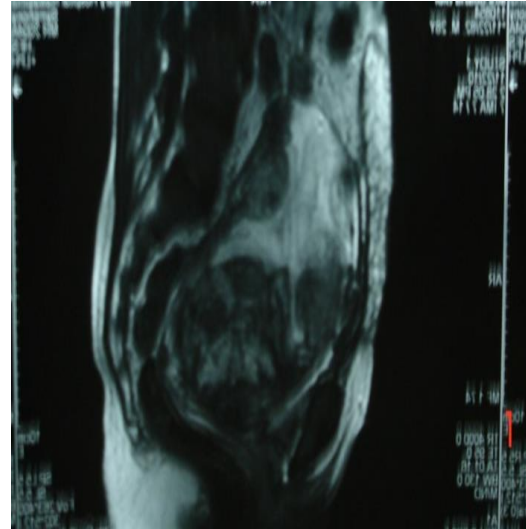


Figure 2: MRI showing retained placenta in Sub-total hysterectomy



intervening decidua basalis and Nitabuch's layer [6].

There are three variants of this condition: 1) accreta: the placenta is attached to the myometrium 75%; 2) increta: the placenta extends into the myometrium 17%; and 3) percreta: the placenta extends through the entire myometrium and uterine serosa 5-7%, this variant can lead to the placental attachment to other organs such as the rectum and bladder [7]. Morbidly adherent placenta remains one of the greatest challenges in modern obstetrics [8]. During pregnancy, adherent placenta may be asymptomatic or may present with antepartum hemorrhage or abdominal pain. Intrapartum adherent placenta is associated with significant maternal morbidity including massive hemorrhage, disseminated intravascular coagulation, hysterectomy, bladder and ureteric trauma, acute respiratory distress syndrome, or acute tubular necrosis. Risk also increases in cases dealt in emergency without proper planning or multi-disciplinary liaison.

The risk factors for morbidly adherent placenta include previous uterine surgery e.g. myomectomy [9], dilatation and curettage, and placenta previa following previous cesarean sections. Our case was diagnosed prenatally as placenta previa percreta involving urinary bladder, was properly prepared for surgery, and managed in collaboration with multi-disciplinary team.

Management of placenta percreta invading the urinary bladder usually requires radical surgery, which may include partial or total resection of the bladder [10]. The most influential variable on

maternal outcome is not attempting to remove the placenta. A retrospective study by Yap et al showed that placental removal before hysterectomy resulted in increased maternal morbidity [11, 12]. A recent review also advised against attempts at placenta removal before hysterectomy [13].

Antenatal diagnosis and adequately planned cesarean hysterectomy without attempts at placental removal reduce maternal morbidity as seen in our case. All efforts should be made to control both intra- and post-operative hemorrhage; internal iliac artery and uterine artery ligation is performed in some cases to control hemorrhage. Ting-Kai Leng et al used prophylactic uterine artery embolization to reduce intraoperative blood loss for placenta percreta with bladder invasion; however, the success rate was low [14]. We tried internal iliac artery ligation which helped us to reduce hemorrhage. Maternal mortality as high as 7-10% has been reported in previous cases [15]. Hysterectomy has traditionally been advised in the management of placenta accreta but there has been a recent movement towards conservative management and preservation of fertility. Strategies include leaving the placenta after cesarean delivery with surgical uterine devascularisation, embolization of the uterine vessels, uterine compression sutures and/or over sewing of the placental vascular bed [16]. A conservative approach was first described by Arulkumarran and colleagues in 1986 by using systemic methotrexate [17]. Methotrexate has an important role in conservative management of placenta percreta with bladder invasion and it has been used in many patients. We used methotrexate in our patient after subtotal hysterectomy with placenta in-situ. This required prolonged follow-up during which patient had another laparotomy for repair of bladder fistula and successful repair.

CONCLUSION

For major placenta previa percreta with bladder invasion, we propose an alternative approach which involves subtotal hysterectomy, leaving the placenta in-situ, prophylactic bilateral internal artery ligation, and adjuvant methotrexate therapy with surgery for bladder fistula later when situation arises. This approach offers the benefit of a less radical, safer surgery by leaving the bladder intact and minimum perioperative hemorrhage with reduced maternal morbidity and mortality.

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