

# Placenta Percreta with Urinary Bladder Infiltration: A Modified Posterior Approach - A Case Report and Lessons Learnt

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## Abstract

Placenta percreta can be one of the life-threatening obstetric emergencies. Placenta percreta involving the urinary bladder is one of the acute obstetric conditions where the urologist plays a major role in stabilizing the general condition of the patient. In this case report, we present a case of a 28-year-old female, who had a premature delivery at 32 weeks of gestation. This patient continued to have persistent bleeding per vaginum and had frank hematuria, which did not settle down with bladder wash and other forms of conservative management. A modified posterior approach hysterectomy and a partial cystectomy along with the residual placental mass were carried out, following which the mother and the child were stable. The purpose of this manuscript is to highlight the rarity of such a condition and also to stress on the fact that one should be vigilant in having a high index of clinical suspicion in anticipating profuse bleeding following a delivery. Prompt diagnosis and a proactive approach would enable an appropriate treatment for this, otherwise, potentially lethal disease.

**Key words:** Cystectomy, Hematuria, Placenta percreta, Placenta previa

## INTRODUCTION

Placenta percreta is a complication of pregnancy that can sometimes be life-threatening for both mother and fetus. Three forms of abnormal surface formation between the placenta and the uterus are demonstrated: Placenta accreta, placenta increta, and placenta percreta.

As a result of an inadequate development of the decidua, there is an abnormal connection between the trophoblast and the myometrium; in cases of placenta accreta, the chorionic villi grow into the basal decidua; in placenta increta, the chorionic villi penetrate into the musculature,

and in placenta percreta, the villi pass through the myometrium. Infiltration of not only the serosa but also of other neighboring organs such as the urinary bladder and large bowel can occur and serious complications may arise. Here, we present one such case where there is a severe postpartum bleeding and hematuria, necessitating hysterectomy, and partial cystectomy.

## CASE REPORT

A 28-year-old female, who had previously undergone a cesarean delivery in 2007 and dilatation and curettage in 2008, was admitted to the labor ward at 32 weeks of gestation with a history of a sudden severe painless vaginal bleeding from a sonographically diagnosed placenta percreta [Figure 1]. An immediate cesarean section was performed and a live male infant weighing 1.5 kg was delivered. The placenta was found adherent to the lower uterine segment and attempts at removal caused torrential bleeding.

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As the bleeding continued, urologists were called for and bilateral internal iliac artery ligation was done. Even after ligation of internal iliac vessels, there was persistent bleeding from vagina and from the bladder resulting in clot retention. Cystoscopy could not be done and bladder wash was ineffective. Hence, a vesicotomy was performed. The blood clots were removed; both ureteric orifices were identified and Double J stenting was done. There was a huge mass in the supratrigonal region, which was protruding from the posterior wall of the bladder, with active bleeding from the surface. Attempts to pack betadine soaked ribbon gauze and dissection of the bladder from the lower uterine segment were unsuccessful. As the diagnosis of placenta percreta with involvement of the urinary bladder was made preoperatively, such a catastrophe was anticipated in advance and a modified posterior approach hysterectomy was carried out. By a modified posterior approach, hysterectomy and a partial cystectomy along with the residual placental mass were carried out.

This technique consists of posterior entry of the vagina, lateral retraction of the ureters, and sequential ligation of parametria medial to the ureter. Finally, the adherent portion of the bladder was resected (partial cystectomy), with uterus and bladder being repaired in two layers with bilateral stents, suprapubic, and urethral catheters placing *in situ*. Intraoperatively, the patient needed multiple units of packed cells and fresh frozen plasma.

Histopathological evaluation revealed placenta percreta with invasion of trophoblastic tissue through the wall of the lower uterine segment and involving the bladder base [Figure 2].

The stents and catheters were removed 2 weeks later. The mother and child are doing well at present.

## DISCUSSION

Placenta is an intermediary organ that attaches itself to the uterus on one side and is connected to the fetus on the other side. This serves as a vital organ to allow an exchange of gases, eliminate waste products, and effectively supply nutrients to the fetus. Placenta accreta involves a primary deficiency of decidualized endometrium allowing excessive trophoblastic invasion directly onto or into the myometrium.<sup>[1]</sup> Placenta accreta adheres to the myometrial surface. When the placenta invades the myometrium, it is called as placenta increta. The most severe scale of abnormal placental attachment is called as placenta percreta, where the extravillous trophoblasts invade beyond the full thickness of the myometrium and possibly into other intra-abdominal organ structures, usually the bladder.<sup>[2]</sup>

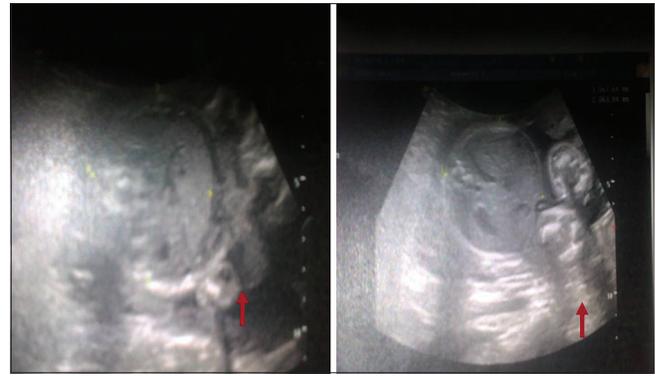


Figure 1: Sonographic appearance of placenta previa

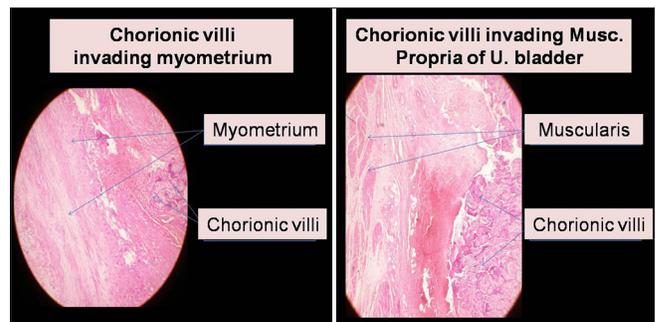


Figure 2: Microphotograph with H & E stain, showing invasion of chorionic villi into myometrium and urinary bladder

The overall incidence of placenta accreta, increta, and percreta vary between 1:540 and 1:93,000. The average incidence is ~1:7000.<sup>[3]</sup> The various factors that can predispose to an abnormal placental location include prior cervical dilatations and curettages, endometritis, submucous myomas, and uterine scars.

Clark *et al.* studied the causal relationship between abnormal placentation and previous cesarean section. In their study, they observed that the spongy decidua cannot be found and the myometrial vessels that are well perfused might open up, resulting in torrential bleed and shock. Prompt diagnosis and appropriate treatment are, therefore, of paramount importance.<sup>[4]</sup>

In patients who have undergone previous cesarean sections, one should always be aware of the correlation of placenta previa with abnormal placentation. Of course, placenta percreta can also occur during first pregnancies without any prior gynecological operations or endometritis.

Sonography, to a certain extent, can localize the status of the placenta.<sup>[5]</sup> Finberg *et al.* laid down certain sonographic criteria that could very well suggest placenta accrete. These are the absence of a normal, hypodense retroplacental myometrial zone, a reduced or absent surface between uterine serosa and urinary bladder, and, possibly, the presence of focal exophytic tissue.<sup>[6]</sup> Doppler

sonography can detect an abnormal vascularization of the myometrium.

Magnetic resonance imaging (MRI) can be used as a supplementary diagnostic procedure in cases where the placenta cannot be adequately evaluated by sonography and/or when there is an elevated risk of abnormal placentation.<sup>[7]</sup> Lim *et al.* correlated the probability scores of placenta accreta on magnetic resonance imaging with hemorrhagic morbidity and concluded that the probability scores for antenatal placental MRI may not be associated with increasing degrees of hemorrhage.<sup>[8]</sup>

A further sign of a placenta accreta/increta/percreta may be an otherwise bizarre elevation of alpha-fetoprotein (AFP) levels in the maternal serum. There is a significant relationship between placenta accreta/increta/percreta and elevated AFP levels in maternal blood.<sup>[9,10]</sup> When macroscopic hematuria is found, an infiltration of the urinary bladder must be considered. If placenta percreta is suspected, then a pre-operative cystoscopy is recommended as a planning aid for the necessary operative steps.<sup>[11]</sup> In the present case, there was no macroscopic hematuria so this diagnostic step was not performed.

The therapy of choice for placenta percreta is hysterectomy. Bilateral ligation of the internal iliac arteries offers a possibility to reduce blood loss during the hysterectomy. Various authors have described balloon catheter occlusion of the iliac vessels in patients with placenta percreta. The catheter is implanted preoperatively and inflated, after delivery of the baby, during the hysterectomy.<sup>[12]</sup>

With percreta, subtotal hysterectomy is to be avoided since most arteries remain uncontrolled and reoperation rates are high, approximately 90%.<sup>[13]</sup> A modified approach to hysterectomy is recommended. With this fashion, the uterus is mobilized until the only remaining attachment is where the placenta percreta has invaded the bladder. The involved portion of the bladder is then resected with hysterectomy specimen followed by bladder reconstruction.<sup>[14]</sup>

## CONCLUSION

Placenta percreta with bladder invasion is a major contribution to maternal morbidity and mortality. This particular case is of great importance for the urologist, as the condition is quite rare and many a time, the urologist is caught unaware of this potentially lethal entity, where internal iliac artery alone is not adequate. A high index of clinical suspicion is mandatory in such situations. We present this case to stress out the importance of early recognition of this life-threatening condition and to have a good maternal and neonatal outcome.

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