

Placenta percreta with bladder invasion

A plea for multidisciplinary approach

Fabmy M.I. Shawish, MS, FRCS, Fayeze T. Hammad, FRCSED.PHD, FARCS, Essa M. Kazim, FRCS.

ABSTRACT

Placenta previa percreta with the urinary bladder invasion is a rare but potentially lethal condition. It has an increasing clinical significance due to its association with previous cesarean sections and uterine curettage. Herein, we report on a patient with placenta percreta and bladder invasion, who presented with hematuria and in whom delivery was delayed to almost full term highlighting the potential catastrophic results and the need for a multidisciplinary approach with the need to involve surgeons who are familiar with vascular and urologic surgery. We also present an elegant MRI of placenta percreta invading the urinary bladder, which shows that MRI is potentially an excellent diagnostic modality in this difficult condition.

Saudi Med J 2007; Vol. 28 (1): 139-141

From the Department of Urology, Dubai Hospital, Dubai, United Arab Emirates.

Received 26th March 2006. Accepted 28th June 2006.

Address correspondence and reprint request to: Dr. Fayeze T. Hammad, Department of Urology, Level 9 West, Dubai Hospital, PO Box 7272, Dubai, United Arab Emirates. Tel. +971 (50) 4880021. Fax. +971 (4) 2719340. E-mail: fayeze@mail2doctor.com

Placenta percreta is a rare obstetric complication associated with significant blood loss. The placental trophoblastic tissue is separated normally from myometrium by the decidual plate. Attachment of the chorionic villi to the myometrium is called placenta accreta, which results in difficult separation of the placenta after delivery. In placenta increta, there is a partial invasion of the myometrium,

whereas in placenta percreta, the villi penetrate the myometrium completely with possible invasion to the adjacent organs such as, the urinary bladder. The invasion of the bladder by placenta percreta is rare with only limited case reports.¹⁻⁴

Clinically, placenta percreta is becoming an increasing clinical concern due to the rise in its incidence over the past 3 decades. This rise has been related to the increase in the incidence of cesarean section and uterine curettage, which results in uterine scarring and hence, abnormal placentation.¹⁻⁴ The management of placenta percreta with the urinary bladder invasion is not well-established due to lack of randomized controlled trials, which will probably never be performed in this uncommon, but increasingly significant abnormality. Therefore, our management is guided by the results of retrospective series and case reports. Herein, we report on a patient with placenta percreta and bladder invasion, who presented with hematuria and in whom delivery was delayed to almost full term highlighting the potential catastrophic results. We also present an elegant MRI of placenta percreta invading the urinary bladder.

Case Report. A 33-year-old woman, gravida 5, Para 4, who had 4 cesarean sections previously, presented at 21 weeks of gestation with gross hematuria and vaginal bleeding associated with a lower abdominal pain. There were no previous urinary symptoms and no relevant medical history except that she had pregnancy-induced diabetes. On examination, she was pale but the vital signs were stable. On admission, her hemoglobin was 9.5 g/dl. Renal function was normal and urine examination did not show any evidence of infection. Ultrasound scan revealed a viable fetus and placenta previa, with a possibility of placenta percreta with urinary bladder involvement. This diagnosis was subsequently confirmed with MRI (Figure 1). Cystoscopy showed a 3 x 4 cm edematous sub-mucosal bluish lesion protruding into the lumen, located in the base of the bladder, and extending to the left lateral wall but sparing the left ureteric orifice. To rule out a more source of bleeding from the upper tract, both ureters were catheterized and cleared urine was obtained. Postoperatively, the bleeding settled in 4 days with bed rest and bladder irrigation. Due to cultural reasons, the patient and her family preferred a conservative approach, which

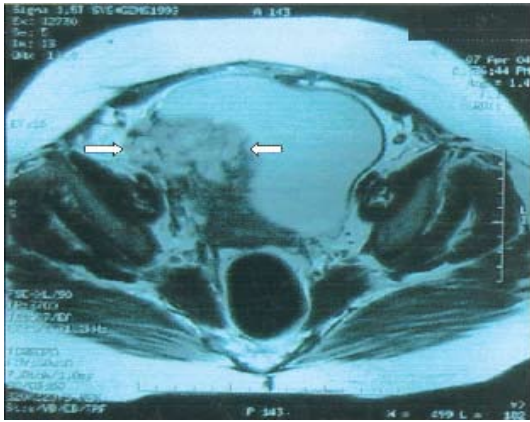


Figure 1 - The MRI of the pelvis showing invasion of the bladder by placenta percreta.

was adopted by the treating team in collaboration with the urologists. Therefore, she was kept in the hospital on bed rest. She had intermittent hematuria, for which she required a total of 13 units of whole blood, 8 units fresh frozen plasma, and 6 units of platelets. At 38 weeks of gestation, she underwent cesarean section and gave birth to a healthy baby. Intra-operatively, the placenta was found to be severely adherent to the myometrium and invading the bladder wall. Separation of the placenta was not feasible and was complicated with heavy bleeding from the placental bed, and therefore, subtotal hysterectomy was performed. A tear in the bladder was noticed and repaired in a single layer. During the procedure, she had a severe hemorrhage, for which she required 5 units of whole blood, 8 units of fresh frozen plasma, and 6 units of platelets. Unfortunately, she sustained a cardiac arrest for 20 minutes. After resuscitation, she was transferred to the Intensive Care Unit where she never gained consciousness. Two weeks later, she died of cardio-respiratory arrest secondary to anoxic encephalopathy.

Discussion. The management of placenta percreta with the bladder invasion is challenging, and the optimal approach is not well-established. Therefore, several factors need to be considered including patient's symptoms and their severity, time of presentation, status of the fetus, mother's parity and other morbidities, and the need to preserve the fetus and uterus. This is further complicated by patient's preference in view of familial and cultural considerations. Although, the optimal management of placenta percreta with the bladder invasion is not clear, 2 important issues need to be considered: the timing of intervention to terminate the pregnancy and the operative details, which include management of the placenta. The time of intervention depends on several factors including the

presenting complaint and its severity, and the effect on the mother and the fetus. For example, intervention is indicated if the patient presents with severe antepartum hemorrhage, which is not responding to conservative measures. In cases when both the mother and fetus are stable, delaying intervention is reasonable; however, care should be taken not to exceed 35 weeks of gestation as the incidence of antepartum hemorrhage has been found to increase markedly beyond 36 weeks.⁵ In the current case, although it is difficult to ascertain, delaying the delivery to 38 weeks probably allowed more invasion of the placenta to the uterus and bladder, and hence, contributed to the increased bleeding encountered at the time of surgery.

Two important decisions need to be made in relation to the intervention in cases of placenta percreta with the urinary bladder invasion. The first is whether to perform hysterectomy or adopt a conservative approach. The second decision is related to the need to ligate the internal iliac artery. Although, O'Brien et al⁵ has shown from their survey that more surgeons would opt for conservative uterine management if there is involvement of adjacent organs, almost all cases of reported placenta percreta with bladder involvement had undergone either total or subtotal hysterectomy.¹⁻⁴ Saving the uterus in placenta percreta with the bladder invasion was reported by Jaraquemada et al,⁶ who performed an uterine conservation by early vascular control at the level of infrarenal aorta followed by uterine and vesical repair. In the current case, the gentle trial to separate the placenta might have aggravated the bleeding, and a pre-planned hysterectomy could have ended in a better outcome. Severe bleeding is the main reason for death in patients with placenta percreta with bladder invasion. To decrease the rate of bleeding, Dubois et al⁷ recommended either prophylactic bilateral internal iliac ligation or preoperative cannulation of the hypogastric arteries with an occlusion balloon, and intraoperative embolization to decrease blood loss during hysterectomy. Indeed, none of the 8 maternal mortalities that were reported by O'Brien et al⁵ had an internal iliac ligation either due to severe bleeding or potentially a lack of familiarity with the technique. In retrospect, a prophylactic intra-operative hypogastric artery ligation could have saved the life of our patient.

Correct antepartum diagnosis of this serious condition is essential to plan the best line of management. Ultrasonography has proven to be an excellent initial diagnostic tool. Nevertheless, it has its limitations, such as, low sensitivity, especially in early pregnancy. The use of MRI to diagnose placenta percreta with a bladder invasion in the third trimester was first described by Thorp et al.⁸ Later, the same group reported on its use in the first trimester.⁸ Although, no one

has adequate experience to calculate MRI sensitivity and specificity in diagnosing placenta percreta, the elegant and clear images, which were obtained in our case, indicate that MRI is potentially an excellent diagnostic modality in this condition. The current case presented with hematuria that is a rare presentation of placenta percreta with bladder invasion. Indeed, out of the 58 reported cases of placenta percreta with urinary bladder invasion, only 17 patients (29%) were presented with hematuria. Hematuria did not appear to inflict an increased likelihood of blood transfusion or maternal mortality compared to those cases who presented with antepartum hemorrhage reports.¹⁻⁴ However, cystoscopy may be required to identify the exact cause of hematuria, and in this case, it is very important for the urologist to avoid taking biopsy from the lesion as it can aggravate the bleeding.

In conclusion, proper management of placenta percreta with the urinary bladder invasion requires a multidisciplinary approach with the involvement of a surgeon who is familiar with both vascular and urologic surgery, as well as the obstetrician. Early ligation of internal iliac arteries may prevent catastrophic complications. In addition, MRI may prove to be an excellent diagnostic modality.

Acknowledgment. *The authors would like to acknowledge Dr. Amal Shaker for her clinical input in the case.*

References

1. Washecka R, Behling, A. Urologic complications of placenta percreta invading the urinary bladder: a case report and review of the literature. *Hawaii Med J* 2002; 61: 66-69.
2. Karam AK, Bristow RE, Bienstock J, Montz FJ. Argon beam coagulation facilitates management of placenta percreta with bladder invasion. *Obstet Gynecol* 2003; 102: 555-556.
3. Jaswal TS, Singh S, Nanda S, Sangwan K, Chauhan M, Marwah N, et al. Cervical ectopic pregnancy with placenta percreta and bladder wall invasion. *Acta Obstet Gynecol Scand* 2002; 81: 991-992.
4. Al-Ojaimi EH, Subramaniam BV. Placenta percreta with urinary bladder involvement. *Saudi Med J* 2004; 25: 518-521.
5. O'Brien JM, Barton JR, Donaldson ES. The management of placenta percreta: conservative and operative strategies. *Am J Obstet Gynecol* 1996; 175: 1632-1638.
6. Palacios Jaraquemada JM, Pan G. Uterine conservation in patient with consecutive double placenta percreta. *Acta Obstet Gynecol Scand* 2000; 79: 900-901.
7. Dubois J, Garel L, Grignon A, Lemay M, Leduc L. Placenta percreta: balloon occlusion and embolization of the internal iliac arteries to reduce intraoperative blood losses. *Am J Obstet Gynecol* 1997; 176: 723-726.
8. Thorp JM Jr, Wells SR, Wiest HH, Jeffries L, Lyles E. First-trimester diagnosis of placenta previa percreta by magnetic resonance imaging. *Am J Obstet Gynecol* 1998; 178: 616-618.

AAAAAA www.smj.org.sa

Saudi Medical Journal Online features

- ✦ Instructions to Authors
- ✦ Uniform Requirements
- ✦ STARD
- ✦ Free access to the Journal's Current issue
- ✦ Future Contents
- ✦ Advertising and Subscription Information

All Subscribers have access to full text articles in HTML and PDF format. Abstracts and Editorials are available to all Online Guests free of charge who can access link references to PubMed.