

CESAREAN HYSTERECTOMY FOR PLACENTA PERCRETA INVADING THE ANTERIOR ABDOMINAL WALL: ANESTHETIC CONSIDERATIONS

- A Case Report -

KRZYSZTOF M KUCZKOWSKI* AND TODD MILLER**

Abstract

Placenta accreta is defined as an abnormal adherence of the placenta to the uterine wall owing to a faulty or an absent decidua basalis. Placenta accreta is further subdivided into placenta accreta vera, increta and percreta, depending on the level of invasion of the uterine wall and surrounding structures. Placenta percreta represents invasion to the serosa and/or other pelvic structures. We herein present the case of a pregnant patient with placenta percreta invading anterior abdominal wall and review the perioperative (Cesarean hysterectomy) anesthetic management of this complication.

Keywords: Pregnancy; complications; abnormal placentation; placenta accreta, increta, percreta, previa, bleeding, Cesarean section, hysterectomy, obstetric anesthesia; complications.

Introduction

Placenta accreta is an abnormal adherence of the placenta to the uterine wall owing to an absent or faulty decidua basalis. Separation of

From Departments of Anesthesiology and Reproductive Medicine University of California San Diego, San Diego, California, USA.

* MD, Assist. Clinical Prof. of Anesth. & Reproductive Med., Director Obstet. Anesth.

** MD, Senior Resident in Anesth.

Mailing Address: Krzysztof M Kuczkowski, MD, Department of Anesthesiology, UCSD Medical Center, 200 W. Arbor Drive, San Diego, CA 92103-8770, Tel: 619 543-5720, Fax: 619 543-5424, E-mail: kkuczkowski@ucsd.edu.

the placenta accreta from the uterine wall can result in fatal hemorrhage¹. The incidence of this devastating problem is increasing secondary to the increased incidence of Cesarean section. The association of placenta accreta with other forms of abnormal placentation, such as low-lying placenta or placenta previa, is common^{2,3}. Although rare, the diagnosis of placenta accreta may lead to life threatening complications (e.g. massive hemorrhage) and significantly impact the obstetric and anesthetic management of these parturients². The obstetrician and the obstetric anesthesiologist must know, on-the-spot, how to deal with this problem.

We herein present the case of a pregnant patient with placenta percreta invading anterior abdominal wall and review the perioperative (Cesarean hysterectomy) anesthetic management of this complication.

Case Report

A 21-year-old gravida 3 para 2 with a history of two prior Cesarean sections was admitted to the hospital at 34 weeks gestation with the diagnosis of placenta percreta invading the bladder and anterior abdominal wall. The decision was made to proceed with elective repeat Cesarean section and cesarean hysterectomy.

Two hours prior to the planned surgery an epidural catheter, an arterial line and two large bore peripheral venous catheters were inserted and the patient was taken to the Department of Interventional Radiology for bilateral internal iliac arterial balloon catheter placement. The balloons were inserted, checked for occlusion and subsequently deflated. The patient was taken to the operating room and central venous (right internal jugular vein) access was established under the ultrasound guidance. A T4 sensory level of anesthesia was established with incremental doses of 2% lidocaine administered via the preexisting epidural catheter, and surgery began.

During the early part of the surgery (long vertical skin incision) the patient began to report some discomfort, which required induction of general anesthesia (standard rapid sequence induction with cricoid pressure). Intraoperatively following the delivery of her fetus, the

placenta was confirmed to have grown through the uterine wall, bladder and lower anterior abdominal wall. Therefore, no attempt was made to separate the placenta from the uterine wall, and other structures involved. Bleeding was not excessive, the placenta was left in situ and Cesarean hysterectomy was carefully performed. During surgery the patient remained hemodynamically stable, and blood loss was promptly replaced with crystalloid and colloid solutions. No complications were reported. The patient was extubated at the end of surgery.

Discussion

Historically placenta accreta was an incidental finding at the time of delivery and was associated with high maternal morbidity and mortality¹. The development of new imaging techniques, such as magnetic resonance imaging (MRI) and transvaginal color Doppler sonography, has allowed antenatal diagnosis of this condition and elective preoperative planning of the obstetric and anesthetic management of these patients (elective Cesarean hysterectomy)⁴⁻⁵.

Placenta accreta is defined as an abnormal adherence of the placenta to the uterine wall owing to an absent or faulty decidua basalis. Separation of the placenta accreta from the uterine wall can result in fatal hemorrhage. The incidence of this devastating problem is increasing secondary to the increased incidence of cesarean section^{1,2,6-8}.

This form of abnormal placentation is further subdivided into placenta accreta vera, increta and percreta, depending on the level of invasion of the uterine wall and surrounding structures. Placenta accreta vera is defined as adherence to the surface of the myometrium without evidence of invasion into or through uterine muscle. Placenta increta refers to invasion into the myometrium, and placenta percreta represents invasion to the serosa or other pelvic structures²⁻⁴.

The association of placenta accreta with other forms of abnormal placentation, such as low-lying placenta or placenta previa, is common. Clark et al. noted that women with placenta previa and an unscarred uterus

had a 5% incidence of placenta accreta³. The diagnosis of placenta previa and history of four or more previous cesarean sections increased the incidence of placenta accreta to 67%^{2,3}.

When placenta accreta is diagnosed antepartum, specific preoperative preparations such as autologous blood donation, arterial and central line insertion or hypogastric artery balloon placement, can be undertaken in preparation for surgery^{1,9,10}.

Regardless of the anesthetic technique used, two large bore intravenous catheters, arterial line and possibly central line should be inserted in patients undergoing cesarean section for abnormal placentation¹. Two to four units of packed red blood cells should be immediately available. Vasoactive drugs such as phenylephrine, ephedrine, dopamine and epinephrine should be immediately available. Consideration should be given to the use of the cell saver and acute normovolemic hemodilution. While both of these techniques remain controversial for the parturient, recent data attest to their safety and efficacy. Additionally the use of the bilateral hypogastric artery balloon catheters may be indicated when major bleeding is suspected. These balloons are inserted preoperatively in the radiology department usually under local anesthesia with some intravenous sedation⁹.

Placenta accreta still remains the leading indication for peripartum Cesarean hysterectomy¹¹. Unfortunately, many obstetricians have little or no experience with performance of obstetric hysterectomy, and many anesthesiologists are not aware of anesthetic implications of this condition.

References

1. KUCZKOWSKI KM: Anesthesia for the repeat Cesarean section in the parturient with abnormal placentation: What does an obstetrician need to know? *Arch Gynecol Obstet*; 273:319-321, 2006.
2. MAYER DC, SPIELMAN FJ, BELL EA: Antepartum and postpartum hemorrhage. In Chestnut DH (ed). *Obstetric Anesthesia: Principles and Practice*, Third Edition, Elsevier Mosby, 662-682, 2004.
3. CLARK SL, KOONINGS PP, PHELAN JP: Placenta previa/accreta and prior cesarean section. *Obstet Gynecol*; 66:89-92, 1985.
4. TAIPALE P, ORDEN MR, BERG M, MANNINEN H, ALAFUZOFF I: Prenatal diagnosis of placenta accreta and percreta with ultrasonography, color Doppler, and magnetic resonance imaging. *Obstet Gynecol*; 104:537-540, 2004.
5. OYELESE Y, SMULIAN JC: Placenta previa, placenta accreta, and vasa previa. *Obstet Gynecol*; 107:927-941, 2006.
6. PALACIOS JARAQUEMADA JM, PESARESI M, NASSIF JC, HERMOSID S: Anterior placenta percreta: surgical approach, hemostasis and uterine repair. *Acta Obstet Gynecol Scand*; 83:738-744, 2004.
7. TAKAI N, ETO M, SATO F, ET AL: Placenta percreta invading the urinary bladder. *Arch Gynecol Obstet*; 271:274-275, 2005.
8. PAULL JD, SMITH J, WILLIAMS L, ET AL: Balloon occlusion of the abdominal aorta during cesarean hysterectomy for placenta percreta. *Anaesth Intensive Care*; 23:731-734, 1995.
9. KUCZKOWSKI KM, EISENMANN UB: Nitrous oxide as a cause of internal iliac artery occlusion balloon rupture. *Ann Fran Anesth Reanim*; 24:564, 2005.
10. KUCZKOWSKI KM: Anesthesia for the repeat Cesarean section in the parturient with abnormal placentation: is there cause for concern? Presented at the Annual Meeting of the American Society of Anesthesiologists in Atlanta, GA, USA, October 25, 2005. Published in Problem-Based Learning Discussions – 2005 CD-ROM, American Society of Anesthesiologists Publication Department 2005.
11. ACOG Committee on Obstetric Practice: ACOG Committee opinion. Number 266, January 2002: placenta accreta. *Obstet Gynecol*; 99:169-170, 2002.

Acknowledgement

Presented in part in a lecture entitled “Obstetric anaesthesia and perinatal medicine” at the 8th World Congress of Perinatal Medicine in Florence, Italy on September 10, 2007.

