Taiwanese Journal of Obstetrics & Gynecology 56 (2017) 147–152

Contents lists available at ScienceDirect

Taiwanese Journal of Obstetrics & Gynecology

journal homepage: www.tjog-online.com

Original Article

Intraoperative aortic balloon occlusion in patients with placenta previa and/or placenta accreta: a retrospective study

Fangyuan Luo [a], Lan Xie [a, *], Ping Xie [b], Siwei Liu [a], Yue Zhu [b]

[a] Department of Obstetrics and Gynecology, Sichuan Academy of Medical Sciences and Sichuan Provincial People's Hospital, Chengdu, Sichuan, China
[b] Department of Interventional Radiology, Sichuan Academy of Medical Sciences and Sichuan Provincial People's Hospital, Chengdu, Sichuan, China

ARTICLE INFO

Article history:
Accepted 23 November 2016

Keywords:
aorta
balloon occlusion
caesarean section placenta accreta
placenta previa

ABSTRACT

Objective: To introduce the primary experience of using aortic balloon catheters during cesarean section for placenta previa and/or placenta accreta.
Materials and Methods: From January 2013 to May 2015, 43 patients who were preoperatively diagnosed with major placenta previa and/or placenta accreta and who underwent prophylactic aortic catheterization before caesarean section (CS) were included in the study. We analyzed the clinical data of the study population. Surgery- and catheterization-related complications were also reported.
Results: Major placenta previa or placenta accreta was surgically confirmed in 42 patients, 28 of whom had both conditions. The mean patient age was 32.3 ± 5.5 years, whereas the median gestational age at delivery was 260 (range, 153–280) days. Twenty-nine (67.4%) patients had previously undergone CS, and 13 (30%) patients had undergone emergency surgery for antenatal hemorrhage. The median estimated blood loss during surgery was 500 (range, 100–3,000) mL, and the median duration of occlusion was 20 (range, 5–32) minutes. Hysterectomy was performed in five (11.6%) patients and uterine artery embolization in two (4.6%) patients. Two patients with placenta percreta experienced surgery-related complications, and two patients required hospital readmission. No major catheterization-related complications were observed. Forty-two live births were recorded, and the Apgar score of the infants at 5 minutes was > 7.
Conclusion: Intraoperative aortic balloon occlusion is a relatively safe method for treating placenta previa and/or placenta accreta during scheduled and emergency CS and might be helpful to prevent hysterectomy and embolization in women wishing to preserve fertility.
© 2017 Taiwan Association of Obstetrics & Gynecology. Publishing services by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).

Introduction

Placenta previa and morbidly adherent placenta (MAP) may cause significant maternal morbidity and mortality from postpartum hemorrhage (PPH), which accounts for ~ 29% of maternal mortality cases [1–3]. MAP includes placenta accreta, increta, and percreta because it penetrates through the decidua basalis into and through the myometrium. For ease of description, the term "accreta" is usually used for all three conditions.

With the rising incidence of cesarean section (CS) due to increasing maternal age, the incidence of placenta previa and its complications, including placenta accreta, is increasing [4–6]. Elective delivery by CS is recommended for major placenta previa [3], and cesarean hysterectomy although leaving the placenta *in situ* is recommended for placenta accreta [3,7]. For women with placenta accreta who wish to preserve fertility, alternative options include manual removal of the placenta with resection of the invaded area and conservative management leaving the placenta *in situ*; the former approach has a possible risk of massive bleeding upon separation of the placenta, although the latter approach may be associated with secondary complications due to the prolonged retention of placental tissue [8–12].

Intraoperative aortic balloon occlusion (IABO) has been shown to effectively reduce intraoperative hemorrhage in major pelvic surgical procedures [13]. Recently, obstetricians have introduced this technique during CS in patients with placenta accreta and placenta previa because it might not only control bleeding during hysterectomy but may also decrease the likelihood of hysterectomy [14,15].

* Corresponding author. Department of Obstetrics and Gynecology, Sichuan Academy of Medical Sciences and Sichuan Provincial People's Hospital, Number 32 West Second Section First Ring Road, Chengdu, Sichuan, China.
E-mail address: 841423692@qq.com (L. Xie).

http://dx.doi.org/10.1016/j.tjog.2016.11.004
1028-4559/© 2017 Taiwan Association of Obstetrics & Gynecology. Publishing services by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).

In this study, we sought to clarify the maternal and fetal outcomes of a group of patients with major placenta previa and/or placenta accreta who underwent IABO and manual removal of the placenta during CS.

Materials and methods

This retrospective study was conducted from January 2013 to May 2015 and was approved by the ethics committee of the Sichuan Academy of Medical Sciences and Sichuan Provincial People's Hospital, Chengdu.

Inclusion and diagnostic criteria

Patients whose ultrasound or magnetic resonance (MR) imaging findings revealed major placenta previa and/or placenta accreta met the diagnostic criteria. Those patients with clinical risk factors for placenta accreta, a strong desire to preserve fertility, antepartum bleeding < 500 mL and stable vital signs were included in the study.

The diagnostic criterion of major placenta previa was a completely covered cervix on ultrasound and/or MR imaging. Ultrasound findings considered to be consistent with placenta accreta were an irregular retroplacental sonolucent zone, thinning or disruption of the hyperechoic serosa-bladder interface, the presence of focal exophytic masses invading the urinary bladder, abnormal placental lacunae, or hypervascularity of the placenta-myometrium interface and bladder wall [3,16]. MR imaging findings considered to be consistent with placenta accreta were uterine bulging, heterogeneous signal intensity within the placenta, or dark intraplacental bands on T2-weighted imaging [3]. Clinical risk factors for placenta accreta included the presence of placenta previa complicated by a history of at least one prior CS, or having had more than three previous pregnancies.

The postoperative diagnosis of placenta accreta was based on the following: (1) the pathology of either placental bed biopsies or hysterectomy specimens indicating that the placental villi were in direct apposition to the myometrium [17]; and (2) the surgeon's inability to develop a clear cleavage plane between the placenta and the uterus with massive bleeding from implantation [15].

Procedure

All patients who opted for IABO before CS were adequately counseled, and they provided written informed consent for the procedure. Patients with asymptomatic placenta previa or placenta accreta opted for elective surgery after 36 weeks, and patients with prenatal vaginal bleeding or uncontrolled contractions had an emergency CS.

All patients underwent an elective/emergency CS after aortic catheterization by an experienced interventional radiologist. After local anesthesia, the right femoral artery was punctured using the Seldinger technique, and a 12-F sheath (RCF-12.0-38-J, Cook Medical Inc., Bloomington, IN, USA) was inserted. A 10-F occlusion balloon catheter (CODA-10.0-35-100-32, Cook Medical Inc., Bloomington, IN, USA) was inserted with its tip in the aorta but below the level of the renal artery (Figure 1, Position of the aortic balloon catheter). Accurate placement of the balloon and effective vascular occlusion were angiographically confirmed during balloon inflation using a contrast agent. The balloon was then deflated and the volume of the contrast agent required to inflate each balloon (5–8 mL) was recorded in the patient notes. The sheath/balloon catheter system was then fixed to the skin.

The patients were transferred from the interventional radiology (IR) suite to the operating room for CS under general anesthesia. Immediately after delivery and umbilical cord clamping or before the uterine incision, according to the obstetrician's request, the balloons were inflated using a predetermined volume of normal saline. The occlusion duration was recorded for all patients. Manual extraction of the placenta was then attempted. The patients were administered uterotonic agents, such as oxytocin or carboprost trometamol, and hemostatic suturing and/or internal iliac artery (IIA) ligation were performed, if necessary. The indication for hysterectomy was uncontrolled bleeding despite the aforementioned surgical and medical interventions.

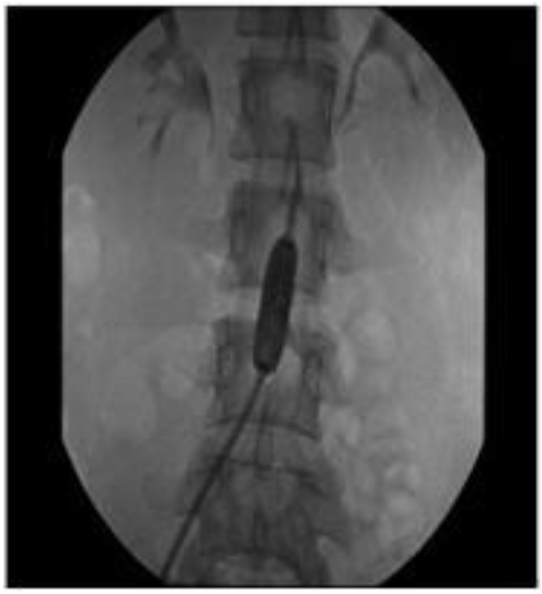

Figure 1. Position of the aortic balloon catheter.

The balloons were routinely deflated before closing the peritoneal cavity to confirm hemostasis. For continuous bleeding that was not massive, the patient was transferred to the IR suite for uterine arterial embolization (UAE). The catheters were removed by the radiologist as soon as the patient's vital signs stabilized.

Perinatal outcomes such as estimated blood loss (EBL), duration of surgery, duration of occlusion, transfused blood product units, incidence of hysterectomy and UAE, number of intensive care unit (ICU) and neonatal intensive care unit (NICU) admissions, and Apgar scores at 1 minute and 5 minutes after birth were considered. Estimated blood loss was quantified based on the volume of suction containers, the weight of the surgical pads, and visual estimation of vaginal blood loss. Surgery- and catheterization-related complications were also reported.

Statistical analysis

The Kolmogorov–Smirnov and Shapiro–Wilk tests were used to assess normal data distribution. Data are presented as the mean ± standard deviation or median and range, where appropriate. Continuous variables were analyzed using the Mann–Whitney U-test. Categorical variables were presented in the form of a rate. Data were analyzed using SPSS 19.0 (SPSS Inc., Chicago, IL, USA). Statistical significance was set at $p < 0.05$.

Results

Characteristics of the study population

During the study period, 43 patients who were preoperatively diagnosed with major placenta previa and/or placenta accreta

Download English Version:

https://daneshyari.com/en/article/8784603

Download Persian Version:

https://daneshyari.com/article/8784603

Daneshyari.com