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Successful management of PPH secondary to complete placenta previa with 2 foley's balloon catheters: A case report

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Abstract
Placenta previa is presence of placental tissue over or adjacent to cervical os. Since the lower uterine segment contracts poorly after separation of placenta, it results in excessive post-partum hemorrhage at times. Management options used to control hemorrhage in placenta previa patients include bimanual compression, placental site hemostatic sutures, uterine artery ligation, pelvic artery embolization and emergency hysterectomy. In 1992, Bakri introduced intrauterine balloon tamponade for treatment of obstetric hemorrhage during cesarean delivery. The overall success rate of balloon tamponade in controlling bleeding is 80%. Because of low density of muscle fibers in the lower uterine segment, control of bleeding from open sinuses can be more difficult. A balloon exerting pressure from both sides may be more efficient to control bleeding from lower parts of uterus. There are case reports of use of cervical dilatation double balloon catheter for PPH. Since Bakri Balloon and cervical dilatation double catheter are costly and not readily available in our setup, 2 foleys catheters simultaneously used along with vaginal gauze packing may be an easier alternative. This is a case report of serious PPH in which 2 foleys balloon catheters were simultaneously used to control bleeding.

Keywords: Placenta previa, PPH, Balloon tamponade, Foleys balloon catheter

Introduction
Placenta previa is the presence of placental tissue over or adjacent to the cervical os [1]. Placenta previa occurs in approximately 1 in every 200 pregnancies at birth [2]. Traditionally four variants of placenta previa were recognized: 1) complete, 2) partial, 3) marginal and 4) low lying [3]. Recent classification includes two variants: true placenta previa- internal cervical os is covered by placental tissue, and low lying placenta, in which placenta lies within 2cm of cervical os but does not cover it [3]. It is associated with maternal mortality as well as morbidity including massive hemorrhage, emergency hysterectomy, infections and adjacent organ damage [4, 5]. Placenta previa results in excessive PPH at times. Once the placenta separates, bleeding is controlled by the contraction of uterine myometrial fibres around the spiral arterioles. Since the lower uterine segment contracts poorly, significant bleeding may occur from the placental implantation site. Intra-operative management options deployed to control hemorrhage in placenta previa patients include bimanual uterine compression, placental site hemostatic sutures, uterine arterial ligation, pelvic artery embolization and emergency hysterectomy [6].
Arterial ligation and uterine compression sutures require a high degree of skill and even then have a low success rate. Pelvic arterial embolization requires time and sophisticated infrastructure and is costly. Hysterectomy in a pregnant uterus has high morbidity and confers loss of fertility. Noninvasive procedures like balloon tamponade treat PPH and preserve fertility as well. In 1992, Bakri introduced intrauterine balloon tamponade for treatment of obstetric hemorrhage during cesarean delivery [7]. The overall success rate of balloon tamponade in controlling bleeding is 80% [8].
Different types of balloons are used to make the uterine tamponade, according to the cause of PPH. After the delivery of baby and placenta, contraction of muscle fibers seals the blood vessels. Because of low density of muscle fibers in the lower uterine segment, control of bleeding from open sinuses can be more difficult. A balloon exerting pressure from both sides may be more efficient to control bleeding from lower parts of uterus.

There are case reports of use of cervical dilatation double balloon catheter for PPH [9].

Since Bakri Balloon and cervical dilatation double catheter are costly and not readily available in our setup, 2 foleys catheters simultaneously used along with vaginal gauze packing may be an easier alternative.

Here, we report a serious case of PPH, originating from the lower segment of uterus during a hysterotomy done for APH due to complete placenta previa in a primigravida, which was successfully controlled using 2 foley's balloon catheters and vaginal gauze packing.

Case Report

An unbooked 18 year old primigravida reported to the antenatal OPD of our department with a history of amenorrhoea of 7 months, associated with bleeding per vagina for last one week. Bleeding was painless, fresh red in color, was minimal in amount and occurred after physical labor. Patient was admitted in the labor room and her investigations done. Patient was negative for all viral markers including Hepatitis B, C, HIV. STS was also negative. Her Hemoglobin at the time of admission was 8.4g/dL, platelets were 1.67 lakh/µL and DLC was normal. Ultrasound showed a single live intrauterine fetus of 27 weeks 3 days gestation with no apparent congenital malformations. Ultrasound showed a complete placenta previa. Patient was admitted and kept on bed rest with bathroom privileges and progesterone supplementation was started. She was planned for blood transfusion. On the same day of her admission, patient had a massive event of antepartum haemorrhage. Patient lost around 800-900cc of blood and her vitals sharply deteriorated. Patient was planned for emergency hysterotomy. 1 unit of whole blood was transfused and surgery initiated. A live female child of birth weight 950 grams was extracted out with APGAR score 5 at the time of birth and was immediately shifted to NICU. Placenta was posterior and completely covering the os. 10 IU of oxytocin was given through i.v. line and 10 IU were given intramuscularly. Placenta was extracted out by controlled cord traction. Placental bed was actively bleeding and uterine massage was continued. Placental bed continued to ooze, there was minimal uterine atonicity as well. Inj. PGF2-α was given and uterine massage was continued. Uterus became well retracted but the placental site on lower uterine segment continued oozing. bilateral uterine artery ligation was done. Hemostatic cho-sutures were applied at the placental site and oozing was controlled to some extent. Uterus was losing its tone intermittently, for which inj. Oxytocin was repeated, inj PGF2 α was repeated as well after 20 minutes, inj Methergine was also given intra-muscularly. Intra-op blood transfusion was continued with second unit of blood. Decision for intrauterine balloon tamponade was taken. Since, bakri balloon and cervical double balloon catheter were not available, we decided to use Foleys balloon catheters. One of the balloons was placed in the uterine cavity and inflated with 50cc of normal saline, its end brought out through the vagina. Another Foleys was placed with the balloon present in the lower uterine segment just over the placental site and inflated with 30cc of normal saline. The catheter tube was brought out through the vagina. Uterine incision was closed over these balloons while taking care, not to pierce the balloons. Abdomen was closed in layers. Patient was then placed in lithotomy position and observed for bleeding from vagina. There was minimal bleeding, vaginal gauze packing was then done. The intrauterine Foleys catheters were labeled and bags attached to collect any bleeding from the uterus. Patient was kept in ICU under observation, put on broad spectrum injectable antibiotics, input output charting was done and another unit of whole blood transfused. After 24 hours, patients vaginal gauze packing was removed, there was no bleeding after that. Her vitals were stable. The intrauterine catheters drained 40cc of fresh red blood during the first 6 hrs after surgery and after that there was no bleeding. Hemoglobin was 7.8g/dL. Patient was allowed clear fluids. 48 hours post-surgery, her intrauterine Foleys catheters were removed after deflating gradually and keeping OT on stand-by. There was minimal bleeding through the os. Patient was transfused one unit Packed Red Blood Cells. Abdominal wound was dressed regularly and her sutures removed on Post op Day 7. There were no signs of intrauterine infection and patient was discharged.

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