

Intraoperative Hemorrhage in a Dangerous Placenta Previa Patient-A Case Report

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Abstract

Dangerous placenta previa refers to somebody has a history of cesarean section while this pregnancy was placenta previa with the placenta attached to the original scar. The placenta can be adhered to the surface of the uterus, invasion into myometrium or completely penetrate the muscle and tissues in these placenta previa patients. It happens in these persons like older maternal ages (over 35 years), the frequency of pregnancy, history of previous cesarean section and so on [1-6]. Placenta implantation is a kind of serious complications of placenta which is mainly caused by placental villi penetrating into the myometrium. Now we would talk about our treatment of a dangerous placenta previa patient with intraoperative hemorrhage which could provide a reference in this kind of case.

Keywords: Dangerous placenta previa; Hemorrhage; Bilateral uterine artery embolization; Cesarean section; Cystoscopy

Introduction

Dangerous placenta previa refers to somebody has a history of cesarean section while this pregnancy was placenta previa with the placenta attached to the original scar. The placenta can be adhered to the surface of the uterus, invasion into myometrium or completely penetrate the muscle and tissues in these placenta previa patients. It happens in these persons like older maternal ages (over 35 years), the frequency of pregnancy, and history of previous cesarean section and so on. Placenta implantation is a kind of serious complications of placenta which is mainly caused by placental villi penetrating into the myometrium. Termination of pregnancy timely is the most important means of dealing with placenta previa [1-6].

Case Report

A 35 years old female patient 72 kg. She was admitted to hospital with 21+1 week's gestation and 6 days of placenta previa. Her menstrual regularity with a history of childbearing 3-0-0-3 (cesarean section in 2009 and 2012 respectively). At 19 (+6) gestational weeks, the B-ultrasound showed that the placenta was located in the anterior wall and completely cover the uterine neck, the placental blood vessels invade myometrium and the boundary of the bladder were not clear (Figure 1). At 20 (+2) gestational weeks, MRI showed complete placenta previa, placental invasion probably (Figures 2-4). She was no abdominal pain, vaginal bleeding and fluid flow during the process. The physical examination revealed the temperature was 36.5 °C, heart rate 80/minute and the blood pressure was 150/108 mmHg. Check shows Hb 130 g/L, others are normal. The patient were diagnosed as 21+1 weeks of gestation, G4P3, dangerous placenta previa, pregnancy complicated with chronic hypertension, scar uterus.

After the discussion of various sections of the hospital (Department of Radiology, Department of Cardiology, Obstetrics, Gynecology,

Urology, Department of anesthesia, Blood transfusion, DSA), the patient would underwent bilateral uterine artery embolization combined with Cesarean section and cystoscopy. After entering the operation room, the patient's blood pressure was 170/100 mmHg, the heart rate was 76 times per minute, SpO₂ 100% and BIS 93. Puncture the right Internal Jugular Vein under local anesthesia, and then measure the Invasive blood pressure. The blood gas showed Hb130 g/L. We gave her anesthesia induction with propofol 150 mg, sufentanil 30 µg, cisatracurium 10 mg. Propofol 300 mg/h and remifentanil 0.5 mg/h were using during the operation.

The BIS maintained at 40-55. Put the patient with bladder lithotomy position, and then the urologists put bilateral DJ tube after see the bilateral ureter by the cystoscopy, Recovery of patient position. Radiologists did femoral artery puncture and radiography, placed balloon into it (Figures 5-6). After routine disinfection of the abdominal cavity, the fetus was taken out by cesarean section, the Apgar score was 0. Use Alice clamp uterine incision and check it, inject the oxytocin 20 µg, caebetocin 100 µg, romethamine 250 µg to the uterine body.

Then filling the internal iliac artery balloon to temporary block of blood flow. 5 minutes later, the placenta peeled off from the fetal surface, we saw the placenta was implanted into the myometrium of the lower part of the uterus and a large amount of blood gushed from the surface, the bleeding about 2500 ml in all, blood stopped oozed as the doctor quickly stitched the cut. Place the Bakri balloon to compression of the lower uterine segment and suture the uterine incision, injection 300 ml water into the balloon, the uterus contracted well. Clean and close the abdomen. Remove the catheter, bilateral uterine artery embolization under DSA, take out the DJ tube and send the patient to SICU with endotracheal tube. The blood pressure maintained at 70-125/46-79 mmHg, the heart rate at 75-120/min, bleeding about 2500 ml, urine 800 ml, supplementary liquid 2000 ml, red blood cells 12 µg, plasma 800 ml, cryoprecipitate 10 µg intraoperative.

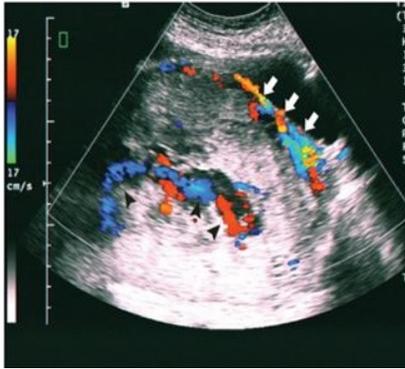


Figure 1: The B-ultrasound showed that the placenta was located in the anterior wall and completely cover the uterine neck, the placental blood vessels invade myometrium and the boundary of the bladder were not clear.



Figure 4: MRI showed complete placenta previa.

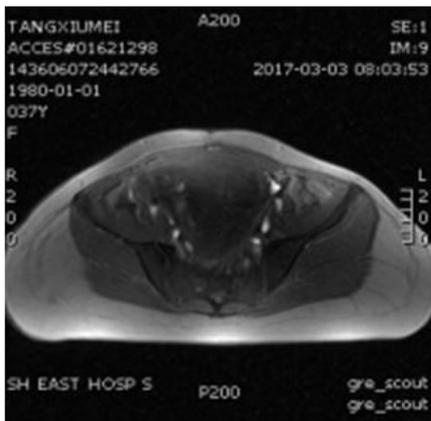


Figure 2: MRI showed complete placenta previa.

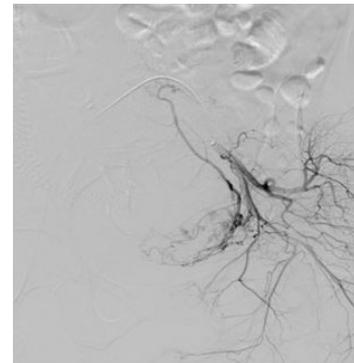


Figure 5: Radiologists did femoral artery puncture and radiography, placed balloon.



Figure 3: MRI showed complete placenta previa.

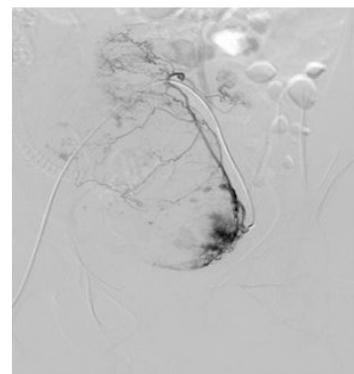


Figure 6: Radiologists did femoral artery puncture and radiography, placed balloon.

Discussion

Dangerous placenta previa was first proposed by Chattopadhyay refers to somebody has a history of cesarean section while this pregnancy was placenta previa with the placenta attached to the

original scar [7]. The placenta can be adhered to the surface of the uterus, invasion into myometrium or completely penetrate the muscle and tissues in these placenta previa patients. When the placenta implantation, the uterus scar place is more likely to cause the postpartum hemorrhage, in addition, uterine resection needed in patients with severe hemorrhage which is threatening the lives of mother and baby [7-9]. It happens in these persons like older maternal ages (over 35 years), the frequency of pregnancy, history of previous cesarean section and so on [10]. Placenta implantation is a kind of serious complications of placenta which is mainly caused by placental villi penetrating into the myometrium.

Placenta implantation is due to placental villi penetrating into the myometrial tissue, it occurred at the early stage of pregnancy but not latter half of gestation. Placenta implantation is one of the most serious complications of obstetrics. Abortion, odinopoeia, cesarean section, puerperal infection, placenta previa and advanced age are considered as the high risk factors of placenta implantation. Its diagnosis is difficult, for those maternal with high risk factors, prenatal color Doppler ultrasound is necessary, we can also use B-ultrasound, AFP and other tests to improve the diagnostic rate.

The influence on maternal and fetal of placenta previa can be manifested in the postpartum hemorrhage because of the weakly lower uterine segment or the poor contraction, it neither remove the attached completely nor effectively oppression blood sinus bleeding, so postpartum hemorrhage often occurs and difficult to control. It neither make the placenta attached to the completely stripped nor effectively oppression blood sinus bleeding, so postpartum hemorrhage often occurs and difficult to control. When the lower segment uterine decidua dysplasia, placental villi can pass through the decidua basalis and invade the myometrium which could form placenta increta. Due to the placenta abruption surface is close to the cervix that bacterial could invasive the surface of placental through vagina. In addition, the delivery woman maybe weakly, so she can easily infection durning the puerperium. Placenta previa hemorrhage can lead to fetal distress, even to the death of hypoxia; in order to save the life of pregnant women or the fetus, termination of pregnancy can be choosed so the premature birth rate would increase. Repregnancy in scarred uterus, monitoring became more difficult, uterine scar rupture during pregnancy is often reported [7]. Although the poor healing of uterine incision is one of the high risk factors of uterine rupture, there is no accurate method to evaluate and predict the structure and function of uterine scar. Studies have shown that the termination of pregnancy near 37 weeks of pregnancy is conducive to reducing the risk of uterine rupture [8]. However, for this patient, the placenta was found at 20 weeks of gestation and suspected invasive bladder, the final decision was to perform surgical treatment to termination of pregnancy.

Dangerous placenta previa is extremely dangerous; we need to be fully prepared to reduce the incidence of adverse events during the perioperative period [9]. For the placenta previa pregnant women are prone to hemorrhagic shock, DIC and other complications, so the patients should be paid more attention to the evaluation of circulatory function and anemia degree. In addition, the blood test, biochemical examination, the platelet count, fibrinogen quantitation, PT, APTT also needs to be taken seriously. The choice of anesthesia should be considered the severity of the disease and fetal condition. General anesthesia is a safe option for patients with active bleeding, hypovolemic shock and obvious coagulant function abnormality, so as to the poor fetal condition. If the maternal and fetal condition is good, we can choose the spinal anesthesia. The bleeding maternal should be

opened twice or more veins or deep venous catheter and monitoring CVP. Pay attention to the amount of urine to prevent acute renal failure or DIC.

For this patient the operation mode was bilateral uterine artery embolization combined with cesarean section and cystoscopy. When the uterus artery occlusion uterine bleeding was significantly reduced, we have sufficient time to carefully check the placental location and the relationship with the myometrium, the placental tissue was removed as possible without damage the integrity of the uterus it can avoid bleeding even though exposed to a large number of blood sinus placenta, the lower uterine segment or uterine atony. Preoperative bilateral ureteral catheterization was avoided massive hemorrhage placental implantation, blind operation caused by the uterus, bladder and ureter injury. We have try our best to remove adhesions or implants, in addition, uterine ischemia can block the blood supply of the residual of placenta implantation that may prevent long-term complications such as hemorrhage, infection, subinvolution and repeated operation caused by residual placenta. But at the same time, there are some complications such as fever, pain hematoma, infection and so on. In order to prevent the occurrence of these complications, local compression of the common femoral artery puncture site, pay attention to the pulse of the dorsal artery, skin temperature and the active treatment of antibiotics.

The incidence of massive hemorrhage in the placenta previa hemorrhage is very high, [10] the current clinical research presented patients in preoperative need to improve relevant laboratory examinations, including blood routine, coagulation monitoring for transfusion strategy obstetric hemorrhage, Blood Group Test and Transfusion Reaction Examination. Prepare some red blood cell and plasma, set up two good veins at least, the central vein can be built in a better condition, use a variety of methods to evaluate the intraoperative bleeding. As it require hemostasis when bleeding > 500 ml. While the blood loss reach to 30-40% or Hb < 70 g/L, red blood cell transfusion needed. Maintain the hemoglobin above 70 g/L can ensure the tissue perfusion and oxygen supply. In addition, compare with the normal value, PT/APTT > 1.5 times or loss red blood cells 4 U, infusion of fresh frozen plasma can supply the blood coagulation factor and blood-volume. When platelets < $75 \times 10^9/L$, platelet transfusion should be early; When the platelet is blow than $50 \times 10^9/L$, it must be delivered to the platelet as massive blood loss can lead to DIC. At the same time, the lack of FV III vW factor also needs attention. Traditional coagulation laboratory tests do not identify specific types of blood components while Point of care testing (POCT) may be useful in guiding blood transfusion. POCT consists of platelet function and thrombus elasticity (TEG) test, modified thrombelastogram, rapid thrombelastogram.

Conclusion

Dangerous placenta previa is easily occurred the hemorrhage, DIC and abnormal uterine contraction. This kind of disease should underwent cesarean section before internal iliac artery balloon placement, uterine artery embolization after the delivery of the fetus which is safe and effective in reducing intraoperative and postoperative bleeding volume and postoperative complications.

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