

A case of Couvelaire uterus with coagulation dysfunction saved successfully with SR PPH suction cannula

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ABSTRACT

Couvelaire uterus is one of the complications associated with placental abruption, and the incidence is around 1%. Blood seeps into the uterine musculature and reaches beneath the serosa. The uterus shows the signs of ecchymosis, flabby, cannot contract and retract and results in atonic post partum hemorrhage (PPH). As this uterus likely to bleed in postoperative period, the treatment of choice is obstetric hysterectomy. In such cases, the women lose their fertility function. In this case, we have successfully used samartha ram post partum hemorrhage (SR PPH) suction cannula to achieve contraction and retraction and saved the uterus.

Key words: Couvelaire uterus; SR PPH Suction cannula; Coagulation dysfunction.

Introduction

Abruption of the placenta refers to premature separation of a normally implanted placenta after 20 weeks of gestation but prior to delivery of the baby. Abruption occurs in 0.4–1% of pregnancies. It is a serious obstetric condition that increases maternal and neonatal morbidity and mortality.^[1,2] Couvelaire uterus results due to extensive extravasation of blood into the uterine musculature reaching beneath the serosa. Uterus shows signs of ecchymosis, which may extend to tubes and ovaries. The peritoneal cavity may also get filled with blood. Women usually slip into coagulation failure, which is potentially life-threatening complications to both mother and fetus. In such cases, obstetric hysterectomy is the treatment of choice to save the mother. The purpose of presenting this case report is to show that fertility function can be preserved by using SR PPH suction cannula even in cases of Couvelaire uterus.

Case Report

A 23-year-old primi at 37 weeks of crown rump length (CRL) gestation, presented to the emergency department

at 10.17 am with complaints of headache, vomiting, intense diffuse pain abdomen with decreased perception of fetal movements. There was no H/O bleeding per vagina. She was conscious, coherent, her blood pressure was 150/100 mm of Hg, heart rate was 92 bpm, temperature was 37.6°C, and bilateral pedal edema was present. Vague tenderness and rigidity were present on the surface of the uterus, and the fetal heart was absent. She was diagnosed as pregnancy-induced hypertension. No other medical disorders complicating pregnancy were present. On pelvic examination, the cervix was 30% effaced, soft admitting 1 finger. Presenting part was Vertex, at -2 station and there was no bleeding from Ostium of uterus (OS). Artificial rupture of membranes revealed blood-stained liquor. On obstetric ultrasound, fetal cardiac activity was absent and placental abruption was noted.

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Investigations

The urine albumin was 2+, platelet count 52,000/cubic millimeter, alanine aminotransferase (ALT) and aspartate aminotransferase (AST) were 100 and 150, respectively. Serum bilirubin was 2.8 mg% with direct bilirubin 1.9 mg%, serum lactate dehydrogenase (LDH) was 520 IU/L, and there was evidence of hemolysis in peripheral smear. Serum creatinine 2.2 mg%, serum uric acid was 9.5 mg%, and serum blood urea nitrogen (BUN) was 22 mg%. The blood group was O+ ve, hemoglobin (HB) was 7 gr%, and International Normalized Ratio (INR) 3.9.

We opted for a cesarean section in this case as we expected delay in vaginal delivery due to cervical factors, which may lead to life-threatening hemorrhage or disseminated intravascular coagulation.^[3] We arranged adequate compatible blood and blood components. We kept a set of SR PPH suction cannulas ready, so that we can use them in case of need.

SR PPH suction cannulas

Samartha Ram *et al.* developed these cannulas to create negative pressure inside the uterine cavity to achieve rapid contraction and retraction of the uterus to stop atonic bleeding.^[4] Different sizes of cannulas are made to match different cervical dilatations and also to use for different purposes [Figure 1].^[5]

At laparotomy, a massive intraperitoneal bleeding of about 3 liters was noted, and the blood was coming out from Fallopian tubes, and there was Couvelaire uterus with no rupture [Figure 2]. A dead male baby weighing 2.75 kg was delivered. The placenta was totally separate from the uterus, and retroplacental clots of about 1000 g were present.

SR Cannula application

As the cervix was admitting only 1 finger, we selected 12 mm (D) × 14 cm long cannula [cannula 5 in Figure 2].

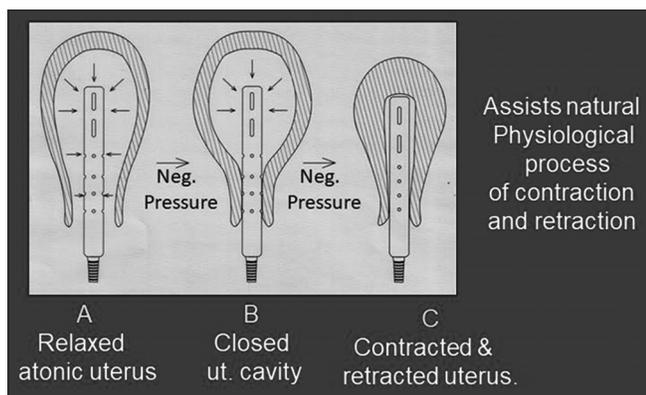


Figure 1: (Original): Mechanisms of how negative pressure inside the uterine cavity stops atonic bleeding

The nipple of the cannula was firmly fixed to one end of the suction tube. Other free end of the tube was inserted through the uterine wound and through the cervix, and then pushed into the vagina. One of the assistants inserted fingers into the vagina, caught hold of the tube, pulled it out and then connected to the suction machine. Cannula was arranged in proper position inside the uterus, cut edges were brought close together, and then the negative pressure was applied. The flabby uterus got contracted and retracted within 2 minutes and the bleeding stopped [Figure 2]. The uterus was closed while suction was working. The negative pressure of 650 mm Hg was maintained for 20 minutes and then stopped. We have also given 10 units oxytocin in a drip to assist the cannula in its action. The peritoneal cavity was explored to rule out other causes of bleeding. The patient received 3 units of Packed Red Blood cells (PRBCs), 2 units of Fresh Frozen Plasma (FFP), and 2 units of platelets. In the postoperative period, suction was put on for 10 min whenever there was a recurrence of bleeding. The cannula was removed after 24 hours.

Discussion

Couvelaire uterus is one of the complications associated with placental abruption (incidence). Blood seeps into the uterine musculature and reaches beneath the serosa. The uterus shows the signs of ecchymosis. Uterine musculature is so much damaged, it is flabby, and it cannot contract and retract. As this uterus may likely to bleed in postoperative period, the treatment of choice is obstetric hysterectomy. In such cases, the women lose their fertility function. In this case, we have successfully used prophylactic SR PPH suction cannula to achieve contraction and retraction and saved the uterus.^[5] When negative pressure applied, the soft cervical tissues get sucked into the perforations of the cervical portion of the cannula, and the uterus becomes a closed cavity. Further continuation of negative pressure results in global constriction, contraction, and firm retraction of the uterus on the surface of the cannula, which stops bleeding. As this is a physical method, and does not depend on biological factors, it does not fail. The cannula cannot correct coagulation defects

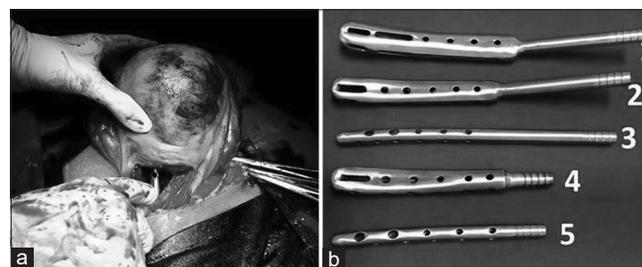


Figure 2: (Original): (a) Contracted and well-retracted Couvelaire uterus after application of SR PPH Suction cannula (b) Different sizes of cannulas to match different cervical dilatations, and for different applications

in blood but stops bleeding from uterus. On literature search, we could not find any similar case and hence reported.

Conclusions

SR PPH suction cannula can be used in cases of Couvelaire uterus to save fertility function. As this is the first case report, we need more case reports to confirm our results.

Acknowledgement

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Ethical approval

Written informed consent was obtained from the patient for publication of this case.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients

understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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