A Rare Case of Posterior Uterine Wall Rupture Complicated by Massive Transfusion and Disseminated Intravascular Coagulation

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Uterine rupture is a potentially catastrophic complication of caesarean section. Atypical rupture occurring away from the previous scar site is extremely rare with less than 20 cases reported in the literature. A 38-year-old presented at 37 weeks gestation with maternal collapse. Emergency caesarean section revealed foetal loss and a posterior uterine rupture with an intact lower uterine segment. A subtotal hysterectomy was performed. Disseminated intravascular coagulopathy (DIC) developed rapidly and required massive transfusion. The patient was discharged home twelve days later. Posterior uterine rupture is rare and requires prompt surgical intervention and multi-disciplinary teamwork to prevent serious maternal morbidity.

Key Words: *Hemorrhage, Uterine rupture, Coagulopathy, Obstetric*

INTRODUCTION

Uterine rupture is a potentially catastrophic complication of previous caesarean section. It is associated with significant maternal and neonatal morbidity. It is often attributable to structural compromise of the uterine scar following caesarean section1. Atypical rupture occurring away from the previous scar site is extremely rare, with only a handful of cases documented in the literature2. The majority of the cases have occurred with attempted VBAC and augmented labour. We present a rare case of posterior uterine rupture occurring in a patient booked for elective caesarean section. The case required massive transfusion and was complicated by disseminated intravascular coagulation.

DESCRIPTION

A 38-year-old gravida 3, para 2, presented to hospital at 37 weeks' gestation with maternal collapse. She had two previous lower segment caesarean sections, one for foetal distress and the second as an elective. She had a history of sickle cell trait and her antenatal course had been uncomplicated. There were no identified risk factors for uterine rupture, such as previous myomectomy or connective tissue disorders. She was booked for an elective LSCS at 39 weeks.

The patient presented with acute abdominal pain, hypotension and antepartum hemorrhage estimated at 500mls, without preceding contractions. She had a central pulse of 130, a systolic blood pressure of 60mmHg and a GCS of 10. A diagnosis of uterine rupture was made based on palpable foetal parts in the abdomen. She was taken immediately to theatre for emergency LSCS.

Rapid sequence induction was undertaken using Thiopentone and Suxamethonium. Endotracheal intubation was performed using a C-MAC 4 blade. Post induction her blood pressure was un recordable, but a central pulse was palpable. Phenylephrine and Adrenaline boluses were required to maintain cardiac output. Invasive arterial BP monitoring and a central venous catheter were inserted following fluid resuscitation and control of bleeding. Blood pressure was subsequently supported via a Noradrenaline infusion.

Incision revealed a stillborn foetus in the abdominal cavity with 3 litres of haemoperitoneum and posterior uterine rupture extending into the vagina. The lower uterine segment was intact. To control bleeding the abdominal aorta was placed under manual compression. The incision was extended to an inverted T and a subtotal hysterectomy was subsequently performed. Intraoperative blood loss totalled six litres.

Initial blood gas demonstrated a profound metabolic acidosis with a pH of 6.8. This was corrected with fluid resuscitation and sodium bicarbonate. Disseminated intravascular coagulopathy developed intra-operatively. This was characterised by thrombocytopenia, hypofibrinogen and elevated D Dimer, PT, APTT and TT. The patient received in total seven hundred millilitres of Hartmann's, eleven PRC, six FFP, four Cryoprecipitate and one pool of platelets. This was coordinated via a specialist transfusion team in theatre utilising a level 1 transfuser.

The patient was transferred intubated to the ICU for on-going care. They were extubated the following day and transferred back to labour ward HDU on day 2. Her post-operative stay was complicated by an ileus that was treated conservatively. She was discharged home 12 days after admission.

DISCUSSION

Cases of posterior uterine rupture are extremely rare, with only a handful of cases reported in the literature [1, 2]. The majority of these cases occurred during VBAC or cases of abnormal placental implantation [3, 4]. What is interesting about this case is that the rupture occurred prior to established labor. The patient presented with acute abdominal pain and hemorrhagic shock, without any other prior symptoms. The lack of preceding symptoms meant the patients rupture occurred out of hospital. Without prompt emergency transfer to hospital the outcome would have been very poor. The presence of multiple senior consultants meant bleeding was quickly controlled via descending aortic compression with early decision for emergency hysterectomy.

Cases of atypical rupture can present diagnostic challenges to the clinician. Previous case reports describe early signs of pathological CTG or foetal bradycardia [5]. Antepartum hemorrhage may be present, but in cases of posterior uterine rupture it can often be concealed6. This may delay diagnosis and timely operative intervention with catastrophic consequences. Physiological parameters may also be a late sign of rupture as patients are often young and healthy with high physiological reserve. However, as demonstrated in this case, when these signs do become present they may be associated with severe metabolic dysfunction and rapidly developing DIC.

Prompt recognition and management of DIC is vital in order to prevent severe maternal morbidity. It is a clinical diagnosis, characterized by

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associated laboratory findings, but no specific diagnostic test yet exists [7]. As such scoring systems have been developed to help aid clinician's diagnosis. However, as normal hematological values in pregnancy are altered, scoring systems specific to pregnancy may be more useful. One such score is the pregnancy modified ISTH score described by Erez et al [8]. In this case based on the platelet count, prothrombin time and fibrinogen level, the patient was scored as high probability for DIC. This alongside the surgical team's description of widespread spontaneous bleeding within the abdomen would support the diagnosis. In this case blood products were given promptly and optimally coordinated the presence of the transfusion specialist nurses in theatre. This minimized dilutional coagulopathy via crystalloid infusion and meant the coagulopathy was promptly corrected.

CONCLUSION

Posterior uterine rupture following previous caesarean section is a very rare but potentially life-threatening complication. It may be complicated by disseminated intravascular coagulation requiring massive transfusion. It requires prompt surgical intervention and multi-disciplinary teamwork to prevent serious maternal morbidity or mortality.

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