

# Postpartum Uterine Wound Dehiscence: A Case Report

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## Abstract

**Introduction:** Late postpartum hemorrhage following a Caesarean section (CS) is uncommon. A partial or complete dehiscence of the lower segment CS incision is a rare but possible cause.

**Case:** A 33-year-old woman underwent a lower segment CS for chorioamnionitis and failure to progress in labour at 40 weeks and 5 days of gestation. On the 43rd postpartum day, she developed heavy vaginal bleeding. Emergency laparotomy revealed a complete dehiscence of the lower uterine segment incision. A subtotal hysterectomy was performed to control the bleeding, and the postoperative course was uneventful.

**Conclusion:** Dehiscence of a lower uterine segment incision is a rare but potentially dangerous cause of late postpartum hemorrhage.

## Résumé

**Contexte :** Il est peu courant de constater une hémorragie post-partum tardive à la suite d'une césarienne. Bien que rare, une déhiscence partielle ou complète de l'incision d'une césarienne du segment inférieur peut en constituer la cause.

**Cas :** Une femme de 33 ans a subi une césarienne du segment inférieur en raison d'une chorioamnionite et de l'échec du travail à 40 semaines et cinq jours de gestation. Le 43<sup>e</sup> jour à la suite de l'intervention, elle a présenté des saignements vaginaux abondants. Une laparotomie d'urgence a révélé une déhiscence totale de l'incision du segment inférieur de l'utérus. Une hystérectomie subtotale a été effectuée afin de juguler le saignement et la période postopératoire n'a connu aucun incident.

**Conclusion :** La déhiscence d'une incision du segment inférieur de l'utérus constitue une cause rare, mais potentiellement dangereuse, d'hémorragie post-partum tardive.

J Obstet Gynaecol Can 2006;28(8):713-715

## INTRODUCTION

Late postpartum hemorrhage is defined as vaginal bleeding that occurs between 24 hours and six weeks after delivery.<sup>1</sup> The most common causes are infection, subinvolution of the placental site, retained placental tissue,

and hereditary coagulopathy.<sup>1</sup> Late postpartum hemorrhage after a Caesarean section (CS) is estimated to occur at a rate of approximately 1 in 365 cases.<sup>2</sup> A rarely described cause is the partial or complete dehiscence of the lower uterine segment incision. We describe here a patient with late postpartum hemorrhage following CS that was caused by dehiscence of the uterine incision.

## CASE

The patient was a 33-year-old primiparous woman who underwent an induction of labour at 40 weeks and 5 days of gestation. The course of pregnancy had been normal, and the patient had no significant medical or surgical history except for mild asthma. After 11 hours of labour, a diagnosis of chorioamnionitis was made (on the basis of maternal fever of 38°C and fetal tachycardia of 160/min.), and the patient was treated with intravenous ampicillin. One hour later, a transverse lower segment CS was performed because of the chorioamnionitis and failure to progress in labour. The uterine incision was closed in two layers using size 0 chromic catgut. Hemostatic sutures were placed at the angles of the incision.

Twelve hours after the surgery, moderate oozing from the wound was noted. At that time, the patient's hemoglobin concentration was 102 g/L. Because the patient was hemodynamically stable, no intervention was felt to be required, and observation continued. At 24 hours after surgery, her hemoglobin concentration had fallen to 72 g/L, but the patient had no fever or active bleeding, and the postoperative course remained clinically stable. The patient was not transfused. A superficial wound dehiscence without evidence of infection was noted and managed conservatively without antibiotics.

For the remainder of her postpartum hospital stay, the patient was clinically stable, with normal vital signs, a healing skin incision, and normal postpartum vaginal discharge. She was discharged on the fourth postoperative day and was advised to continue taking iron supplements. The

**Key Words:** Postpartum hemorrhage, Caesarean section, endomyometritis, dehiscence

Competing interests: None declared.

Received on January 3, 2006

Accepted on February 27, 2006

patient returned to normal activity and was seen several times as an outpatient for examination of the incision. She continued breastfeeding, and vaginal discharge ceased after approximately four weeks.

On the 43rd postpartum day, the patient was seen in the emergency department because of vaginal hemorrhage. The vaginal bleeding had started suddenly with the passage of clots. She had no abdominal pain or fever. On examination, she had mild abdominal tenderness, and the uterus was not palpable. The patient had significant vaginal bleeding (estimated 500 to 1000 mL present in the vagina), and her pulse rate was 90/min., her blood pressure was 140/70, and her hemoglobin concentration was 107 g/L.

The cause of the bleeding was not immediately apparent. Retained placental tissue was considered unlikely because delivery had been by CS, and lochia had ceased. Because of the severity of the bleeding it was decided to perform dilatation and curettage.

At pelvic examination under general anaesthesia, the bleeding appeared to have stopped. However, as the cervix was dilated, heavy bleeding resumed. Exploration of the uterine cavity using a curette demonstrated an apparently regular cavity with no retained tissue. An ultrasound examination of the pelvis performed subsequently in the operating room demonstrated a normal-appearing uterus and a thin endometrium with no visible myomas.

Following the ultrasound examination, the vaginal bleeding stopped spontaneously. Treatment with high doses of oxytocin (40 units/L at 150 cc/hour) and Premarin (25 mg IV every 6 hours) was begun. The hemoglobin concentration was reported as 51 g/L, and it was decided to transfuse packed red cells.

Seven hours later, the patient had another acute episode of heavy vaginal bleeding, with loss of approximately 1000 mL. Her hemoglobin had fallen to 40 g/L even though she had already received two units of packed red cells and a third unit was then being transfused. Because active bleeding continued, the decision was made to perform emergency laparotomy, with the possibility that hysterectomy would be required.

At laparotomy there was no free intra-abdominal blood. The uterus was slightly enlarged, equivalent to an 8 to 9 week pregnancy; however, the pelvic tissues seemed very inflamed and friable. The bladder was drawn up over the lower part of the uterus, and after this was taken down dehiscence of the lower segment uterine incision was identified. Arterial bleeding coming from the left angle of the uterine scar was quickly controlled and a subtotal hysterectomy was performed. The integrity of the ureters was confirmed after intravenous injection of methylene blue. The

patient received a total of seven units of packed red cells and four units of fresh frozen plasma. Her blood pressure remained stable throughout the surgery. Postoperative hemoglobin concentration was 99 g/L.

The patient's postoperative course was uneventful. She received another unit of packed red cells on the second postoperative day. She was also given intravenous gentamycin and clindamycin because of the histologic finding of chronic endomyometritis, a lower urinary tract infection, and superficial wound skin dehiscence. The patient was discharged on the 10th postoperative day and remained well thereafter.

## DISCUSSION

Late postpartum hemorrhage following CS is uncommon. The traditional causes of postpartum hemorrhage, which typically are retained placental fragments, are less likely to arise after CS because the delivery of the placenta is directly observed.<sup>3,4</sup> Severe postpartum hemorrhage due to partial or complete dehiscence of the lower segment uterine scar after CS has been reported,<sup>3-11</sup> and it is reasonable to presume that less severe cases that are undiagnosed and unreported may occur more frequently.<sup>5</sup> In these cases, bleeding is likely to arise from eroded vessels at the angles of the incision.<sup>3</sup> The reported cases have been characterized by abundant, painless, and recurrent vaginal bleeding,<sup>6</sup> starting usually between the 7th and 28th postoperative days. In addition, the bleeding episodes may be separated by many days or weeks.<sup>3</sup> However, we have not found any reported case in which vaginal bleeding began as late as in the present case: i.e., on the 43rd postpartum day.

Reported risk factors for dehiscence of the lower segment uterine scar following CS are multiparity, infection, and an incision placed too low in the lower uterine segment.<sup>4,5,7-9</sup> Incisions that are made too close to the relatively avascular tissue of the cervix lead more often to necrosis of the angles of the wound.<sup>4,7</sup> Where dehiscence is described, the incision may appear healthy or necrotic.<sup>6,8</sup> Some reports describe dehiscence of a CS scar because of severe endomyometritis.<sup>10,11</sup> Others describe patients without clinical endomyometritis.<sup>3-5,7</sup> In the present case, chorioamnionitis may have contributed to the poor wound healing, although no clinical endomyometritis was diagnosed. We hypothesized, because of the hemorrhage on the first postoperative day, that the patient may have developed a uterine hematoma that subsequently developed subclinical infection that caused tissue necrosis. Among the factors associated with poor wound healing are diabetes, malnutrition, older age, immunosuppression, and obesity.<sup>12</sup> The weight of the patient at the time of CS was unknown, but at 32 weeks of pregnancy she weighed approximately

80 kg. Her obesity may have contributed to the superficial wound skin dehiscence, but it should not have contributed to the dehiscence of the lower uterine segment incision.

In the evaluation of hemorrhage following CS, some authors advise performing uterine exploration by curettage, although in one case curettage led to perforation at the site of dehiscence, with consequent development of intraperitoneal hemorrhage.<sup>7,8</sup> Other authors, partly because of this risk, advise digital exploration of the cavity.<sup>3,5,9</sup> Because defects in the incision may be missed by exploring from inside the uterine cavity, direct confirmation of dehiscence requires a laparotomy.<sup>5</sup> Dehiscence should also be strongly suspected if uterine exploration and curettage did not identify other sources of bleeding and if a necrotic defect was palpable at the incision site in the lower segment.<sup>7</sup> However, the diagnosis is often made only after many episodes of bleeding and at the time when the decision is made to perform hysterectomy. The emergency ultrasound examination performed in our patient showed no significant abnormality. No other imaging technique was used. In such a clinical situation, ultrasound examination may be useful to exclude intra-abdominal bleeding and retained products of conception. Ultrasound and magnetic resonance imaging (MRI) have also been used to measure the lower uterine segment thickness after CS.<sup>13,14</sup> However, their clinical usefulness in an acute setting needs to be defined. In retrospect, angiography may have been very useful for identifying the source of bleeding, but because a dehiscence of the uterine scar was not considered, this technique was not used.

Conservative and aggressive approaches have been proposed for the management of dehiscence of a CS scar. Conservative measures include digital debridement and packing of the uterus, antibiotic therapy, and blood transfusion.<sup>3,7,8</sup> The more aggressive measures include debridement of the incision with repeat suture closure, ligation of the internal iliac arteries or uterine arteries, and hysterectomy.<sup>3,7,8</sup> The exploration and resuture of the incision can be difficult because of the friability of the tissue. In addition, because of uterine involution, it may be that there is not enough tissue in the lower uterine segment to allow repair.<sup>3,9</sup> Hemorrhage has been controlled by ligation of the uterine arteries per vagina and by ligation of one internal iliac artery, but authors tend to agree that hysterectomy is the treatment of choice.<sup>3,8</sup> Nevertheless, it has been proposed that uterine artery embolization may be a preferable means of controlling hemorrhage.<sup>9</sup> In our patient's case, embolization was considered but because the bleeding was profuse we concluded that definitive treatment was required. For the same reason, we do not think that earlier diagnosis would have avoided the need for transfusion. In addition, given the

extent of our patient's endomyometritis, we feel that conservative measures would not have avoided the need for hysterectomy.

The consequences of this complication for a future pregnancy are unknown. It has been recommended that all women who retain their uterus after a significant postpartum hemorrhage following CS should undergo evaluation to rule out any defect in the scar.<sup>7</sup> We feel that these patients should undergo elective repeat CS, and should not be candidates for a vaginal birth after CS.

## CONCLUSION

Late secondary postpartum hemorrhage after CS due to a dehiscence of the lower uterine segment incision is, fortunately, relatively rare. There are probably many minor occurrences that are not diagnosed. Significant morbidity is associated with this complication, including the possibility of significant blood loss and the need for emergency surgery. Clinicians must remain aware of the diagnostic and therapeutic options.

## ACKNOWLEDGEMENTS

The woman whose story is told in this case report has provided signed permission for its publication.

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