Juniper Online Journal of Case Studies
ISSN: 2476-1370

Juniper Publishers
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Case Report
Volume 13 Issue 3 -April 2022
DOI: 10.19080/JOJCS.2022.13.555862

JOJ Case Stud

Case Report of Cervical Birth Trauma Leading to Postpartum Haemorrhage in Teenage Pregnancy

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Submission: March 18, 2022; **Published:** April 01, 2022

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Abstract

Background: Postpartum haemorrhage PPH is an extremely important, and regrettably, an indelibly common complication of childbirth affecting nearly 10% of all deliveries. When it occurs, it is however, extremely rare to find a cervical injury as the primary cause of bleeding. We present this report as reminder that this may in fact be so. This is important, because if not identified, haemorrhage may continue unabated, leading to a heightened risk of maternal harm and escalating morbidity.

Case: Presents a 16-year-old woman following unassisted vaginal delivery complicated by postpartum haemorrhage from a spontaneous cervical tear. Appropriately identified, the injury was successfully repaired by suture during EUA in theatre under regional anaesthesia.

Conclusion: An incidence of cervical injury leading to significant postpartum haemorrhage following spontaneous vaginal delivery that was successfully managed leading to safe, effective, early care.

Keywords: Postpartum haemorrhage; Gestational thrombocytopaenia; Aetiology; Haemostasis; Cervical tears; Serology; Dyspareunia; Dysmenorrhea

Introduction

Postpartum haemorrhage is an inherent and extremely common complication of childbirth. Left untreated, it may account for nearly one quarter of all maternal deaths worldwide. It is defined as significant bleeding after childbirth. Although the total loss is usually less than 500mls, it may be significantly greater, with a severe haemorrhage exceeding 1000mls or in other words, up to 25% total blood volume [1]. Most commonly, a PPH occurs immediately after delivery, usually within the first 24 hours (primary). Risk of bleeding may, however, continue for the next 6 weeks (secondary). The incidence of PPH in Australia is between 5 and 15% [1]. Causes include most commonly failure of the uterus to contract, or to remain contracted following birth. Other causes may include retained products such as placenta, trauma or tears to the tissues of the genital tract including the cervix, infection and abnormalities of maternal circulation or haemostasis. With the most common cause being abnormalities of sustained tone, it is not surprising that protocols of emergency care prioritise this as the target of first line management. Cervical tears, being typically much less common, may sometimes be neglected or overlooked in such algorithms of standardized care [2].

Case Presentation

We present the case of a 16-year-old G1P1 who presented in spontaneous labour at 39+1 weeks. Her pregnancy though welcomed, was unplanned. Her periods prior had been irregular and so estimated date of confinement was determined using a dating ultrasound at 9+3 weeks. At time of booking in, she had a BMI of 23, enjoyed good social support from her parents and partner and was noted to have sporadic tobacco and cannabis use for the previous 3 years, which had subsequently ceased following news of the pregnancy. Routine screening showed blood group A positive, negative antibodies, normal serology including rubella and a low risk first trimester combined screen. She had a normal morphology scan at 20 weeks confirming normal placental localization to the anterior fundus. She went on to have a normal glucose tolerance test and was group B Streptococcus negative. She remained well and engaged throughout her antenatal care.

Interestingly, in the context of later events, she was found to have gestational thrombocytopaenia at term with her platelet count falling to 117 prior to delivery. This was not thought to be significant. She was mildly iron deficient with normal haemoglobin levels and remained on oral iron supplementation. In the week leading to delivery, she presented to the maternity unit with reduced foetal movements on two occasions. Clinical findings on each occasion were reassuring and conservative care was provided.

She presented to birth suite in the early morning of the day of delivery. She was found to be in early labour, with 2-3 mild irregular tightening occurring every 10mins. Vaginal examination performed with consent, found her to be 4cm dilated, with a partially effaced cervix with the station of the presenting part (cephalic) at -1. Plan of care was to admit for observation with the expectation of normal progress. Repeat examination was requested 3 hours later in the setting of continued contractions with increased maternal discomfort and pelvic pressure. Abdominal findings showed a well engaged head however the cervix remained unchanged. Following informed discussion, amniotomy was performed releasing copious, pink stained liquor. She then progressed quickly, feeling a strong urge to push approximately 1½ hours later. Re-examination confirmed full dilation and she was supported towards a safe, unassisted vaginal delivery 25mins later. Routine administration of 10 units intramuscular oxytocic occurred. The baby weighed 3530g, with Apgar's of 9 at 1min and 10 at 5mins. Third stage was complete at 14 mins with the placenta delivered intact by controlled cord traction.

A postpartum trickle of vaginal blood was noted. Approximately one-hour post-delivery, the loss continued and weighed estimate suggested a cumulative loss of at least 1000mls. An emergency alarm was triggered and standard management protocol activated. This included immediate bolus of Ergometrine 250mcg by IM and by IV push dose, as well as 1g Tranexamic acid and 40 units Syntocinon by IV infusion. Clinically, the patient was stable with normal cardiovascular outputs. The uterus was firm and central and palpated at the level of the umbilicus. The perineum and external vaginal tissues were intact and there were no significant clots identified during digital examination. Despite this, fresh blood continued to drain from the vagina and a decision for direct visual examination was requested. Unfortunately, this could not be undertaken in the birth suite setting, and the patient was transferred to theatre for examination under anaesthesia. A deep, right lateral vaginal wall laceration was identified which was contiguous with the entire length of the cervix. A separate anterior cervical tear was also identified. All were bleeding actively and were repaired using continuous locked 2/0 Vicryl Rapide sutures with immediate diminution of loss. A single dose of antibiotic was given. She returned to the ward awake and well for continued observation and supportive care.

Total blood loss was approximately 1400ml. Her Haemoglobin fell from 111gm/dL on the day of delivery to 90 the next day [Normal 120-150gm/dL]. She remained clinically asymptomatic and did not require blood transfusion. She was given 1g Ferinject by infusion prior to discharge. Her recovered uneventfully and was discharged on day 3 happily breastfeeding. Postpartum debrief was conducted and a postnatal appointment arranged for 6 weeks which found her well and importantly, with no evidence of sustained cervical trauma. Pelvic USS including cervical length, was normal.

Discussion

Whilst the incidence of postpartum haemorrhage is common, affecting nearly 10% of all births, the proportion of those associated with concomitant cervical injury is rare [3]. Indeed, clinically significant cervical trauma occurs in only 1.1% of nulliparous births and in about 0.5% of multiparous deliveries [4]. As in our case, risk factors include precipitous labour and delivery [2] but may also follow assisted vaginal delivery with forceps or ventouse. Induction of labour [5] and the use of oxytocics may also increase the likelihood, perhaps through association of a more rapid or aggressive progress towards delivery. Young women also appear to be more at risk. A history of prior cervical cerclage is however, the most significant risk factor and may result in a more than 10-fold increase of incidence [4,5]. Other surgical procedures involving the cervix, such as LLETZ, cone biopsy and uterine D&C [6] may also be implicated. As noted, our patient had evidence of thrombocytopaenia at term with a decline in platelet count below normal levels pre-delivery. Given the findings at examination and her response to appropriate surgical management, we propose that this unlikely to be a significant provocateur in her overall cohort of risk.

We presented this case because it demonstrates the continued relevance of postpartum haemorrhage as a cause of birth morbidity and tragically, worldwide of maternal death. It can be immediate and catastrophic, or, as in our case, more slowly cumulative and insidiously progressive [7]. Our case highlights the importance of continued vigilance and mindfulness of best practice protocols and the familiarity of routine that comes from regular practice of birth drills and emergency scenarios [8]. The case also highlights an otherwise rare aetiology of significant postpartum bleeding. A cervical tear can be hidden. It can elude timely identification because attention to other, more common causes may betray a broader purpose to consider other alternatives [2]. Because of this, if left undiscovered, a cervical tear may thwart the efforts of effective management and thus promulgate an outcome that might otherwise, have been more easily resolved. In cases of less urgency, undiagnosed cervical injury may lead to long-term sequalae such as ongoing discomfort or dyspareunia, dysmenorrhea though fortunately, there is no evidence of affect to subsequent pregnancies such as preterm labour or incompetence [2]. Whilst we present this case as an ad

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memoire to keep mindful the possibility of cervical injury, we do not, in the absence of specific indication, advocate an obligatory exclusion of cervical trauma following birth. Rather, we encourage a systematic investigation of all possible causes.

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