

Primary, Spontaneous, Complete Colporrhexis during Precipitate Vaginal Birth after Cesarean Section (VBAC)

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Abstract

Background: Obstetric hemorrhage emerges as the most common cause of severe maternal morbidity and mortality around the globe. Colporrhexis or rupture of the vaginal vault is a rare, but dangerous complication of labor and is a rare cause of postpartum hemorrhage. **Case Report:** We hereby report 32 years old second gravida undergoing vaginal birth after cesarean section, who in second stage of labor sustained a spontaneous posterior vaginal wall tear extending in to the posterior fornix opening into the pouch of Douglas, which was managed successfully by both vaginal and abdominal approach. **Conclusion:** This case-study also highlights the importance of quality of care as one of the determinants of phase III delay affecting the prognosis and outcomes while caring for near misses in obstetrics.

Keywords: Labor, Postpartum Hemorrhage, Pregnancy, Vaginal Birth after Cesarean.

Introduction

Colporrhexis causing separation of cervix from the vaginal fornix is an unanticipated, but perilous complication of labor. It can be life-threatening and easily missed, with the diagnosis being overlooked. Majority of cases of primary colporrhexis are of traumatic origin. The etiology of the infrequent primary spontaneous colporrhexis as in our case is mostly hypothetical. While secondary colporrhexis is reported along with vaginal birth after caesarean section, a reported case of primary colporrhexis after previous caesarean section is apparently rare. We hereby present one such extremely rare case of primary, spontaneous, complete colporrhexis during precipitate vaginal birth after caesarean section.

Case Report

The patient was 32 year old, gravida 2, para 1 women who had a past history of cesarean delivery by low transverse incision, having delivered a

3.8 kg healthy male child. Patient had an uneventful antenatal course and had made an informed decision for a planned vaginal birth after cesarean section (VBAC). She was admitted to the hospital at 39 weeks of gestation in latent phase of labor with a singleton fetus in left occipito-anterior (LOA) position. She progressed spontaneously from 3 cm to full dilatation in one hour and within 15 minutes she had a spontaneous vaginal delivery with right medio-lateral episiotomy of a singleton live healthy female baby of 3.2 kg with Apgar 9 at 1 minute. The labor was not induced or augmented, however the patient mentioned eating date fruits.

Immediately after delivery of the baby and complete placenta, there was excessive vaginal bleeding. As per Advanced Life Support in Obstetrics (ALSO) guidelines [1], a second large bore intravenous line, continuous monitoring of vital signs, bimanual uterine massage, oxytocin infusion, intramuscular methylergonivine, misoprostol 1 mgm per rectal, blood group typing

and cross match etc. were implemented. Her vitals were stable and uterus was contracted, but still she was having profuse vaginal bleeding. Exploration of the lower genital tract revealed a long midline laceration over the posterior vaginal wall extending to the posterior fornix with suspicion of avulsion of vaginal vault posteriorly. There was no extension of the episiotomy. Decision was made for exploration under anesthesia, as she was not under epidural.

Patient was transferred to the operation theatre. The genital tract was thoroughly and systematically explored under general anesthesia and confirmed the previous finding of the midline posterior vaginal wall tear. The previous uterine scar and cervix were intact. The rectum and anal canal were unaffected. Attempt was made to suture this rent vaginally, but its apex was opening into the pouch of Douglas (POD) and was not accessible. A decision for laparotomy was made. Intra-operatively, there was hemoperitoneum. The previous uterine scar and bladder were undamaged. There was midline tear seen in the inferior aspect of POD extending down to the previously noted vaginal wall tear. Posterior lip of the cervix was intact but exposed through the avulsed posterior vaginal vault. Both uterine vessels and ureters were intact. Edges of the tear were grasped by Allis forceps and anatomy restored by first layer of continuous and second layer of interrupted sutures. Vagina was re-explored. The total estimated blood loss was approximately 2000 ml. Patient was shifted to intensive care unit (ICU) for close monitoring. Patient received five units of packed red blood cells and four units of fresh frozen plasma. After 24 hours she was shifted to the ward and monitored closely when she developed mild right lung atelectasis and pleural effusion which was managed conservatively. She was discharged after four days.

On her review one week later in the outpatient department (OPD), she was stable, wound was healing well and there was slight stricture at the level of mid vagina. On her follow-

up two months later in OPD, she reported normal sexual relationship without any dyspareunia or mechanical difficulty during sexual act. The patient was recommended and counseled for elective cesarean section in the future pregnancy.

Discussion

Obstetric hemorrhage emerges as the most common cause of severe maternal morbidity in almost all maternal 'near misses' and mortality audits in both developed and developing countries [2]. Primary postpartum hemorrhage (PPH) occurring within 24 hours of delivery is the leading type of major obstetric hemorrhage [3]. The most common etiology of primary PPH is uterine atony, followed by genital tract trauma. Predisposing factors to trauma include parity, operative delivery, birth weight and precipitate labor; meanwhile episiotomy does not protect against severe laceration's occurrence [4].

Vaginal birth after cesarean section is evidence based good practice in obstetrics, it could be associated with a low percentage of rupture uterus or scar dehiscence, yet to our knowledge it is not associated with primary colporrhexis. The antenatal and intrapartum care of this patient complied with that recommended by the green-top guideline for vaginal birth after cesarean section [5]. Precipitate labor is an unusually short labor, which culminates in delivery of the fetus within three hours of onset of active labor [6]. Precipitate birth can lead to extensive lacerations of the cervix, vagina, vulva, or perineum or uterine rupture, postpartum atonic uterus, increased need for blood transfusion and longer duration of hospital stay [7]. In our case, it resulted in primary, spontaneous, complete colporrhexis.

Colporrhexis [8,9], otherwise referred to as rupture of the vaginal vault, causing separation of cervix from the vaginal fornix is a rare, but dangerous complication of labor. Primary colporrhexis is defined as a tear limited to the vaginal vault without cervical or uterine extension.

This type constitutes merely 2.5% of the entire uterine and vaginal ruptures, whilst 97% of vaginal vault ruptures have concomitant extension into the cervix or lower uterine segment and are catalogued under secondary colporrhexis. Excessive retraction of the uterus can tear the cervix from its vaginal attachment resulting in spontaneous colporrhexis [10]. Those of traumatic origin often result from unskillful obstetric maneuvers [8-10]. Complete colporrhexis involves the entire vaginal wall thickness including the overlying peritoneum; while in incomplete variety, only the vaginal mucosa and muscularis are involved [8,9].

In our case the rapid progress and very short second stage of labor led to shearing effect of the descending head on the upper posterior vaginal wall and did not affect the external or the internal anal sphincters. Whether, the previous pregnancy where there was persistent occipito-posterior position of fetal head at full dilatation without progress caused a weakening of vaginal vault is a matter of speculation. Colporrhexis is a surgical emergency. In spite of the fact that such tears may be unsuspected, they usually present as hematomas or brisk hemorrhage as in our case. Meticulous exploration of such extensive vaginal vault tears is warranted. If tear is accessible, repair from below will suffice. In case of any suspicion of peritoneal perforation or of retroperitoneal or intra-peritoneal hemorrhage, there should be no hesitancy in considering laparotomy along with resuscitative measures. With such extensive damage, intra-uterine exploration for possible rupture, especially as in our case of VBAC, is also indicated. Surgical repair along with simultaneous zealous blood replacement, effectual analgesia or anesthesia and adept assistance are imperative [11].

Injudicious and aggressive use of pharmaceutical uterine muscle stimulators as well as the widespread use of traditional preparations of pressed date fruits, castor oil and other traditional drinks in different parts of the world, can provoke strong uterine contractions that lead to precipitate

labor [12], which can subsequently predispose to severe maternal morbidity. Date fruits and other traditional beverages are commonly used in Gulf areas to stimulate and initiate labor pains [12]. Few studies done to cover this area reported that date fruits facilitate and increase rate of cervical dilatation. However, more studies are needed before any conclusive evidence can be drawn.

“Maternal Near Miss” is defined as severe obstetrical complication that nearly caused maternal death, but the woman survives either due to a stroke of luck or due to appropriate and timely medical care [13]. There are many classifications of near miss based on organ failure, admission to ICU and on the type of complication. Our case fulfills the criteria of near miss as regards to blood loss, need for blood transfusion and admission to ICU. Near miss reporting and analyzing has been established as an appropriate tool for evaluation and measurement of quality of care provided in obstetrics. The ‘three delays model’ was developed for more comprehensive analysis of causes and preventability strategies to avoid or to minimize the long run complications of near miss. This model is composed of three phases: phase I - delay in decision to seek care by the individual and/or family, phase II - delay in reaching an adequate health care facility, and phase III - delay in receiving adequate care at the health facility. Phase III delay in terms of early diagnosis of the complications and time to start appropriate management are crucial factors in minimizing the mortality and morbidity [14].

In our case the systematic approach of diagnosis of the complications following the guidelines, allowed early diagnosis of the colporrhexis within few minutes following delivery, facilitating an early recourse to examination under anesthesia. As it was impossible to approach the fornix vaginally, an early decision was made for laparotomy. This double approach aided in achieving complete hemostasis and to restore anatomy. It took about three hours to control bleeding and to stabilize the patient. It needs to

be emphasized that the pattern of management of the case, dependent on the woman being cared for in a consultant-led maternity unit with early and proper diagnosis of near miss, access to laboratory and blood bank facilities, skilled obstetric and anesthetic staff readily available in-house, well equipped operation theatre and availability of essential medicines are all key stones in saving the patient's life [15].

Conclusion

A case of primary, spontaneous, complete, intra-partum colporrhexis caused by precipitate vaginal birth after previous caesarean section is presented. The rareness of this unforeseen condition is emphasized. Also, to be stressed is the fact that such rare cases of maternal "near-misses" need well trained obstetrical and anesthetic team and fully equipped theatre to prevent maternal death and to minimize maternal morbidity.

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