

Childbirth resulting in traumatic stretching and prolapsing of the anterior lip of the cervix outside the vagina: A case report

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ABSTRACT

Background: We report on childbirth trauma resulting in a rare stretching and prolapsing of the anterior lip of the cervix beyond the vaginal introitus, and describe the management.

Case Presentation: A 17-year-old primigravida who had normal antenatal care delivered a live normal male baby weighing 3600 g at 39 weeks of gestation. The patient sustained a birth trauma resulting in the anterior lip of the cervix becoming stretched and prolapsing outside the vagina. There was an associated uterovaginal prolapse (Pelvic Organ Prolapse Quantification System grade 2). The prolapse of the cervix recurred after the initial repositioning of the cervix into the vagina. Subsequently, a vaginal ring pessary was applied to reduce the uterus and cervix. The most distal part of the prolapsed cervix was necrotic, remained outside the vagina despite the application of the ring pessary, and was excised. The use of the ring pessary was discontinued at 6 weeks postpartum, the cervix healed without obvious defect, and there was no prolapse at 3-month follow-up.

Conclusion: A stretched cervix that prolapses beyond the vaginal introitus and uterovaginal prolapse are rare complications of childbirth that may be amenable to treatment with a ring pessary and to surgical excision of non-viable cervical tissue.

1. Introduction

The commonest types of birth trauma to the cervix are laceration of the cervical mucosa [1] and bruises. Cervical lacerations complicate 0.5 to 1.1% of vaginal births [2]. Nonetheless, vaginal birth trauma resulting in stretching and prolapsing of the cervix outside the vagina is rare. We report a vaginal birth trauma resulting in stretching and prolapsing of the anterior lip of the cervix beyond the vaginal introitus, and describe the management of the condition. To the best of our knowledge this is the first published report on the condition.

2. Case Presentation

A 17-year-old primigravida had normal antenatal care in a primary healthcare clinic.

At 39 weeks of gestation, she presented to the same clinic in active labour with the cervix 5 cm dilated. After 5 h of supervised labour and pain controlled with injectable pethidine, the cervix was fully dilated. A left mediolateral episiotomy was performed due to imminent perineal

tear. She delivered a normal male baby weighing 3600 g with APGAR scores of 7 and 9 at one and five minutes respectively. The placenta was delivered spontaneously. Immediately after the delivery of the placenta, the cervix prolapsed outside the introitus. There was an associated vaginal bleeding which responded to uterine massage and oxytocin therapy. The episiotomy was repaired. She was subsequently referred to a provincial hospital for further care.

On arrival at the provincial hospital, the following were found: normal vital signs, well contracted uterus of 20-week size, sutured episiotomy with tissue edges incompletely apposed, normal lochia, uterovaginal prolapse of Pelvic Organ Prolapse Quantification System (POP-Q) stage 2, and bruised anterior lip of the cervix which had prolapsed outside the vagina (Fig. 1). Bedside ultrasonography revealed an empty uterus with normal contour and no fluid or mass in the pelvic cavity (Fig. 1). The patient was placed on broad-spectrum antibiotics and analgesia. Haematological investigations were normal. The prolapsed cervix was repositioned into the vagina but the prolapse recurred within 12 h. Examination under anaesthesia was undertaken, with the following findings: the entire anterior lip of the cervix was ragged,

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stretched, bruised and prolapsed outside the vagina (Fig. 1). The posterior lip of the cervix was normal. A size R3.50#7 ring pessary (Bioteque, America Inc., San Jose, CA, USA) was applied into the vagina and the prolapsed uterus and cervix were reduced. However, the most distal part of the prolapsed cervix remained outside the vagina, appeared non-viable and was ligated and excised without any difficulty in achieving haemostasis. The episiotomy was re-sutured (Fig. 1). Histology of the excised portion of the cervix showed necrotic cervical tissue measuring $4.4 \times 2.5 \times 2.0$ cm. The patient was discharged home on day 6 postpartum after observation and intravenous antibiotics for 5 days. She had an indwelling urinary Foley catheter for 10 days to allow time for any possible bladder injury to heal. Pelvic floor muscle training was also recommended because it is helpful in cases of pelvic organ prolapse [3,4]. The ring pessary was permanently removed at the six-week postnatal clinic visit and there was no evidence of uterine or cervical prolapse. At three-month follow-up, the patient had no evidence of prolapse nor any obvious cervical defect.

3. Discussion

The risk factors for birth trauma include operative vaginal birth, birth weight ≥ 4000 g, prematurity, delivery of fetal head between uterine contractions, abnormal presentation, induced labour, prolonged second stage of labour, and precipitous labour [2,5,6]. In the index patient, these risk factors were not observed. We believe that the trauma to the cervix may have occurred due to incomplete dilatation of the anterior lip of the cervix before the birth of the baby; and this suggests that the labour may have been mismanaged. Therefore, possible risk factors for birth trauma may include premature bearing down (pushing against a cervix which is not fully dilated), and this must be addressed to

prevent injury to the cervix. This calls for adequate pain control during labour and careful examination of the cervix to ensure its full dilatation before the mother is encouraged to bear down. Notably, the stroma of the cervix contains collagen (80%), smooth muscle (10–15%) and a small amount of elastin (0.6–1.6%); however, some women have a higher proportion of elastin [7]. In the authors' opinion, stretching of the cervix without its avulsion may occur when the cervix contains a higher than normal quantity of elastin, and in a situation where the traumatic pressure on the cervix has gradually increased and is distributed over an area (and not at a specific spot on the cervix). Additionally, collagen-associated disorders such as Ehlers–Danlos syndrome is associated with increased risk of POP, inguinal hernia, joint hypermobility, arterial aneurysm, and varicose veins [8]. However, neither the patient nor her family members had features suggestive of collagen disorder.

The treatment of puerperal uterovaginal prolapse usually involve reduction with a pessary [9,10]. Repair of obstetric cervical injury is usually not recommended, particularly in the absence of bleeding, laceration greater than 2 cm or distorted anatomy [11,12]. In the index case, the most distal part of the prolapsed cervix was necrotic and so surgical excision was undertaken. The uterovaginal prolapse may have been present before childbirth; understandably, pregnancy and childbirth are risk factors. The healed cervix without any defect in the index case is noteworthy, and may be similar to a case originally reported by Chassar Moir where intrapartum annular detachment of the cervix healed with restoration of normal cervical anatomy [11].

Another important consideration is the relative hypoestrogenic state that occurs in postpartum and breastfeeding mothers [13,14] which may warrant the use of intra-vaginal oestrogen cream. Importantly, breastfeeding does not delay the recovery of pelvic floor dysfunction following childbirth [14]. In the index case, intra-vaginal oestrogen cream was not

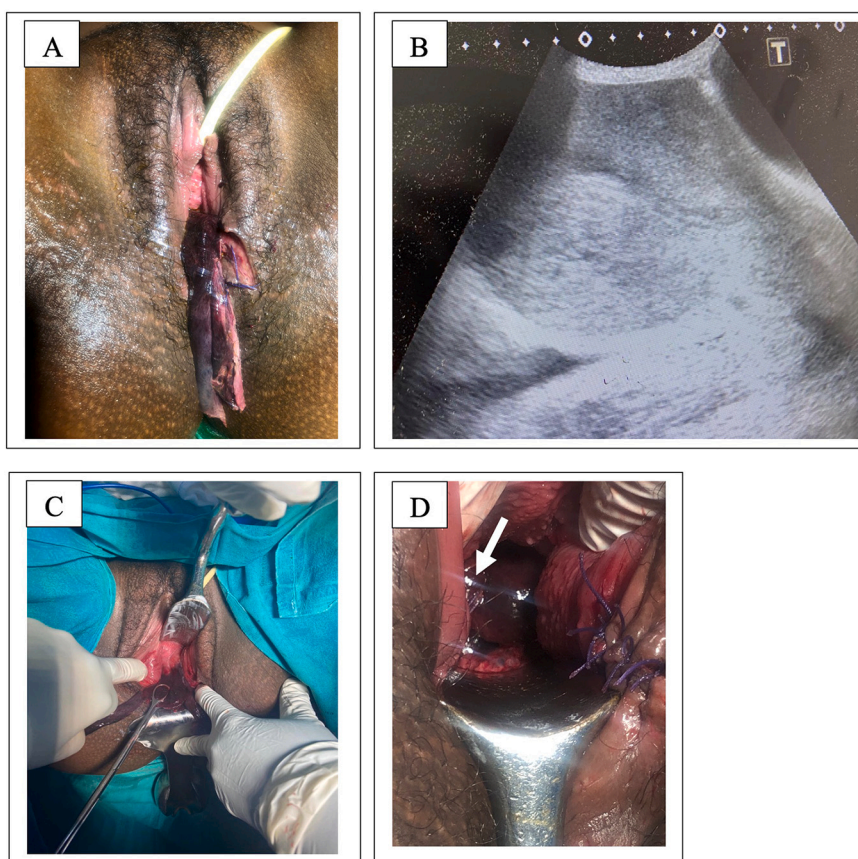


Fig. 1. Episiotomy incision and prolapsed anterior lip of cervix (A); uterus with normal contour (B); bruised and ragged anterior lip of cervix held with sponge holder (C); and cervix and uterus reduced with ring pessary (not visible), point of excision of distal non-viable portion of anterior cervix (white arrow) and episiotomy re-sutured (D).

used because it was not a routine therapy for management of puerperal POP in adolescents at the managing hospital. Understandably, oestrogen improves vaginal rejuvenation/wound healing, and may be used, but whether or not it improves surgical outcomes is uncertain [15].

Stretching and prolapsing of the cervix outside the vagina are severe complications of vaginal birth that may result in debilitating cervical defects. Despite the absence of any obvious cervical defect in the index patient at three-month follow-up, such trauma may result in long-term complications such as cervical stenosis and incompetence. In any future pregnancy, therefore, increased surveillance is required to check for features of cervical incompetence such as shortening and funnelling of the cervix. The mode of delivery in this patient's next pregnancy should be based on obstetric indications and concomitant consideration of the index cervical trauma. Understandably, vaginal birth following a previous cervical trauma is a known clinical practice [16]. Additionally, there are reports of vaginal birth in women who had POP during labour [17–19]. However, some clinicians recommend elective caesarean delivery for the next pregnancy following a previous POP [20] or cervical trauma [21], despite the possible complications of caesarean delivery, and these make the preferred mode of delivery a contentious matter. Notably, there is a risk of recurrence of cervical trauma and prolapse in the next pregnancy. A recent report by the International Urogynecological Association (IUGA) shows that caesarean delivery is protective against symptoms of POP [22]. Therefore, it is pertinent to counsel women and provide them with information to enable them to make informed decisions, which must be respected. Nonetheless, a recent meta-analysis that evaluated the delivery mode according to the type of uterine-sparing procedure for uterine prolapse could not reach a conclusion on the preferred mode of delivery because in most studies elective caesarean deliveries were performed based on clinical experience rather than obstetric indications [23].

Contributors

Both authors made equal contributions to the writing of the case report and Nnabuike Chibuoke Ngene cared for the patient.

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Patient consent

Both the patient and a parent gave written consent for this case report to be published.

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Conflict of interest statement

The authors declare that they have no conflict of interest regarding the publication of this case report.

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