Section: Obstetrics and Gynaecology

Case Series

CLINICAL SPECTRUM AND MANAGEMENT OF SEVERE MATERNAL BIRTH TRAUMA: A CASE SERIES

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ABSTRACT

Maternal birth trauma remains a significant contributor to postpartum morbidity, particularly in settings with limited access to skilled obstetric care. It includes a spectrum of injuries such as perineal tears, pelvic floor dysfunction, hematomas, and nerve damage, which may result from spontaneous, instrumental, or operative deliveries. This case series aims to highlight the clinical presentation, management, and outcomes of women presenting with various forms of birth-related trauma following vaginal deliveries. Strengthening intrapartum care, ensuring the presence of skilled birth attendants, and providing prompt postpartum management are key to reducing the burden and long-term sequelae of birth trauma.

Keywords: Perineal trauma, Pelvic hematoma, Laparotomy.

INTRODUCTION

Maternal birth trauma refers to physical injuries sustained by the mother during labour and delivery, including soft tissue lacerations, pelvic floor injuries, hematomas, uterine rupture, and nerve damage. These injuries can result from spontaneous vaginal delivery, instrumental interventions (e.g., forceps, vacuum), or challenging operative deliveries, particularly in cases of prolonged second stage of labour, macrosomia, or malposition of the foetus.[1] While some degree of trauma is considered physiological, significant maternal birth trauma can lead to short- and long-term morbidities such as haemorrhage, infection, urinary or faecal incontinence, chronic pelvic pain, and sexual dysfunction.[2,3]

Globally, the prevalence of maternal birth trauma is underreported, especially in low- and middle-income countries, where limited access to comprehensive perinatal care and inadequate documentation contribute to gaps in surveillance and management.[4] While minor perineal trauma is common and often expected during normal vaginal delivery, severe or unrecognized trauma can result in significant maternal morbidity. Such trauma can manifest as postpartum haemorrhage, urinary or faecal incontinence, rectovaginal or vesicovaginal fistulas, chronic pelvic pain, dyspareunia, and psychological distress.[5,6] Despite being a major contributor to postpartum morbidity, maternal birth trauma often receives less attention than neonatal birth trauma, both in clinical focus and academic literature.[7] Pelvic floor trauma, in particular, is increasingly recognized as a major contributor to long-term postpartum complications such as pelvic organ prolapse and functional disorders.[8] In many developing countries, maternal trauma is often underdiagnosed, underreported, or inadequately treated due to lack of training, privacy, or specialized postpartum care. This not only affects the physical recovery of the mother but also contributes to long-term emotional and social consequences, including maternal dissatisfaction with the birth experience and impaired quality of life.[9,10] Early recognition and timely intervention are critical to minimizing complications and improving quality of life postpartum. A multidisciplinary approach involving obstetricians, urogynaecologists, and physiotherapists is often essential in the rehabilitation process. The objective of this case series is to present varied clinical scenarios of maternal birth trauma observed in a tertiary care centre, analyse the risk factors, and

highlight the importance of prompt diagnosis and individualized management strategies. This case series highlights three diverse presentations of maternal birth trauma from a tertiary-level hospital.

Case 1

A 28 years para 3 live 3 reported to the labour room of our hospital with a complaint of perineal injury and bleeding per vagina. She delivered a healthy male baby of 3.0 kg at the community health centre and the delivery was conducted by birth attendants. As told by the patient, she had full-term labour pain for which she visited a local government hospital. She had vaginal delivery within 3 hours of admission at that centre and delivery was conducted by birth attendants of the hospital. She had no history of fundal pressure, instrumental delivery or any prior vaginal surgery. On examination, the patient was a little anxious. She had pallor of mild grade with P-104/min normovolemic, BP-106/70mmHg, chest – bilateral clear, Urine output on catheterization 200ml clear. On per-abdomen examination uterus was well contracted at 20weeks fundal height with no abdominal tenderness. On local examination periurethra, labia majora, minora and clitoris were normal looking. A 4 cm tear in the rectovaginal septum extending up to the middle of perineal body externally. All the perineal muscles were torn but the posterior fourchette was intact. The external anal sphincter was slightly torn. Anal mucosa integrity was maintained. We consider this as a case of third-degree perineal tear and foetal delivery from the torn perineal body. [Figure 1]

After admission, the intravenous line was secured and injectable antibiotics were started. Cross-match was sent for 1unit PRBC. The anaesthesia team was informed. Informed written consent was obtained from the patient for examination and repair under general anaesthesia. The patient was placed in a lithotomy position after painting and draping. Continuous urine drainage was performed via foley catheterisation. There was 5-6 cm transverse tear in the perineal body that directly communicated to the posterior vaginal wall. All perineal muscles were torn and retracted, exposing few fibres of external anal sphincter. On per-rectal examination, the anal tone was slightly reduced and the gloved finger did not communicate to the vagina indicating intact anal mucosa. The cervix, anterior and lateral vagina all were normal. The pararectal fascia was approximated with vicryl 2'o interrupted sutures. The external anal sphincter was grasped with allis forceps and overlapping sutures were taken with vicryl 2'0. Torn muscles were approximated by taking sutures from the belly of muscles, obliterating the dead space and bringing the muscles to the midline. The posterior vaginal wall was repaired with continuous 2'0 vicryl starting 1 cm above the apex of tear. The perineal skin was then also sutured with vicryl 1'0 with interrupted sutures. In the end the per-rectal examination was done and good anal tone was found. The skin had a good cosmetic approximation. [Figure 2]

In the postoperative period, injectable antibiotics were continued, and analgesics, multivitamins, and laxatives were given. The patient was kept nil by mouth for 1 day and started on a semisolid diet for next 2 days. The catheter was removed after 24 hours. Sitz bath was advised. The patient passed stool on postop day -3. There was no faecal incontinence, the patient was discharged on postop day-6 and advised to review after 4 weeks. At follow-up visits, the patient had no faecal incontinence, dyspareunia or pelvic pain.

Case 2

A 34-year-old woman, gravida 2 para 1, was admitted to our tertiary care hospital at 36 weeks and 2 days of gestation in second stage of labour. Her obstetric history was significant for a complete perineal tear (CPT) during a previous vaginal delivery, which had been surgically repaired. Following the repair, she developed partial anal incontinence specifically for loose stools and flatulence. Her pre-delivery Wexner incontinence score was 9. On examination, the perineal body length was reduced to approximately 1 cm, and anal sphincter tone was diminished. [Figure 3]

The patient underwent a vaginal delivery with a mediolateral episiotomy. She delivered a male infant weighing 3200 grams, who cried immediately at birth. The Apgar scores were 7 and 9 at one and five minutes, respectively. Postdelivery examination revealed a fourth-degree perineal tear. [Figure 4]. The anal mucosal laceration extended approximately 2 cm from the anal verge between the 11o'clock positions. Both the external and internal anal sphincters were completely disrupted at the tear site, with significantly reduced anal tone. The patient was immediately taken to the operating theatre, and the repair was performed under spinal anaesthesia. The anal mucosa was repaired using 2-0 Vicryl sutures. The internal and external anal sphincters were repaired with 1-0 Vicryl using the overlapping technique. Vaginal mucosa was subsequently repaired with 2-0 Vicryl, and the episiotomy was closed following completion of the perineal repair. Estimated intraoperative blood loss was approximately 75 mL.

Postoperatively, the patient received intravenous paracetamol for analgesia and was administered IV ceftriaxone and metronidazole for 72 hours, followed by oral antibiotics until postoperative day five. She was kept nil per oral for 48 hours, then advanced to a liquid diet on postpartum day three and soft diet on day four. Laxatives were started from postoperative day three, administered three times daily as a stool softener. Cold compresses were applied to the perineal wound for the first 48 hours, followed by sitz baths and topical antiseptic cream.

On postpartum day five, the patient passed stool without any complaints of incontinence. [Figure 5]. She was discharged on postpartum day eight in a satisfactory condition. At her first postnatal visit on day 15, she remained asymptomatic. Examination

revealed a healing perineal wound. At six weeks postpartum, she reported no anal incontinence. Clinical examination confirmed normal anal tone and complete healing of the perineal tear. Her Wexner incontinence score was 0 at follow-up.

Case 3

A 29-year-old woman para 4, live 3, was brought to the labour room during emergency hours with signs of hypovolemic shock following a home vaginal delivery conducted by an unskilled birth attendant 5 hours before reaching our hospital. She gave history of labour pain for 3-4days. On examination, the patient was semiconscious, disoriented, and unresponsive to verbal commands. Her vital parameters were: pulse rate – 110/min, blood pressure – 96/60 mmHg, and respiratory rate – 18/min. Abdominal examination revealed a poorly contracted uterus. Per speculum examination showed bluish discoloration of the anterior vaginal wall below the mid-urethral level. No cervical tear was noted, and there was no active per vaginal bleeding. A point-of-care ultrasound performed in the labour room revealed a significant collection of approximately 2 litres of blood anterior to the uterus and extending into the right parametrium. A diagnosis of traumatic pelvic hematoma with concealed haemorrhage was made, and an emergency laparotomy was undertaken. Intraoperatively, a 6×7 cm organized hematoma was identified in the anterior uterine region. [Figure 6] Active bleeding vessels were located near the anatomical area of the corona mortis and were surgically ligated. The hematoma was evacuated. Despite uterotonics, the uterus remained atonic and flabby. In view of ongoing uterine atony and life-threatening haemorrhage, an obstetric hysterectomy was performed after obtaining consent from the patient's attendants. A pelvic drain was inserted, and the abdomen was closed in layers. The patient received 2 units of packed red blood cells, 2 units of fresh frozen plasma, and 2 units of random donor platelets intraoperatively. She was shifted to the surgical intensive care unit (SICU) for further monitoring. Her postoperative recovery was uneventful, and she was discharged on postoperative day 6 in stable condition.

Figure 1: Rectovaginal septum injury (Green arrow) and delivery from ruptured perineal body (blue arrow)

Figure 2: Repaired perineal body

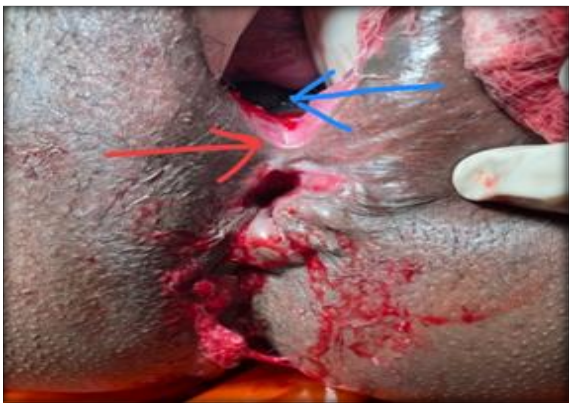

Figure 3: Perineal body reduced to 1 cm (red arrow) and fetal head at +2 station (blue arrow)

Figure 4: Four-degree perineal tear along-side of episiotomy

Figure 5: Repaired perinium on postoperative day 5 of CPT repair

Figure 6: A 6*7 cm spontaneous hematoma formation anterior to uterus following NVD at home

DISCUSSION

Maternal birth trauma remains a significant contributor to postpartum morbidity, particularly in settings where deliveries are conducted without skilled obstetric care or in cases with previous pelvic floor injuries. In our series, the cases highlight the spectrum of trauma—from perineal tears involving the rectovaginal septum to severe obstetric anal sphincter injuries and concealed pelvic hematomas resulting in hysterectomy.

The first case reflects an uncommon presentation of a rectovaginal septal tear with external perineal disruption in the absence of classical risk factors such as instrumental delivery or fundal pressure. This type of trauma, though rarely documented, can occur due to rapid or uncontrolled delivery, especially when adequate perineal support is not provided. Importantly, in this case, despite a 4 cm tear extending into the perineal body and involvement of external anal sphincter fibres, the anal mucosa remained intact, representing a variant of a third-degree tear. Such injuries demand careful anatomical repair under anaesthesia using layered closure techniques. Accurate anatomical restoration, including sphincteroplasty using the overlapping technique, has been associated with better continence outcomes and lower risk of complications like rectovaginal fistula or wound breakdown.[11,12]

In the second case, a patient with a prior history of complete perineal tear underwent spontaneous vaginal delivery and again suffered a fourth-degree tear despite mediolateral episiotomy. This highlights the increased susceptibility of previously injured perineum to recurrence, even when preventive strategies like episiotomy are employed. Literature suggests that recurrence rates of obstetric anal sphincter injuries (OASIS) are significant in women with a history of such trauma, and special precautions including early decision for caesarean section or assisted delivery may be warranted in select cases.[13,14] The use of the Wexner Incontinence Score was helpful in objectively tracking patient symptoms pre- and post-repair. Notably, the score improved from 9 pre-delivery to 0 post-repair, indicating a successful anatomical and functional outcome. Studies have shown that the use of overlapping sphincter repair and meticulous multilayer closure improves long-term continence and quality of life.[15]

The third case presents a life-threatening obstetric emergency following an unsupervised home delivery. The presence of uterine atony in combination with vascular trauma necessitated an obstetric hysterectomy—a critical life-saving procedure. This underscores the importance of timely surgical intervention, adequate blood transfusion support, and intensive care in managing such cases. According to the Royal College of Obstetricians and Gynaecologists (RCOG) Green-top Guideline No. 52, hysterectomy is recommended in cases of uncontrollable haemorrhage when conservative measures fail.[16]

Collectively, these cases underline key challenges in maternal trauma management, including the risk of missed perineal injuries, the high recurrence potential of OASIS, and the devastating consequences of unmonitored deliveries. They also reflect the value of point-of-care imaging, standardized perineal examination protocols, and multidisciplinary management in improving outcomes. Preventive measures such as improving intrapartum care, training in perineal protection techniques, and ensuring deliveries occur in well-equipped centres with skilled birth attendants can dramatically reduce the incidence and severity of birth-related trauma. Furthermore, early recognition and repair by experienced obstetricians, along with good postoperative care including pain relief, infection control, stool regulation, and pelvic floor rehabilitation, are critical for optimal recovery and long-term maternal well-being.

CONCLUSION

Maternal birth trauma can present with a wide range of injuries, from perineal tears to life-threatening pelvic haemorrhage and hematoma. Early

recognition, timely surgical intervention, and proper postoperative care are essential to reduce complications and improve outcomes. These cases highlight the importance of skilled birth attendance, careful perineal assessment, and structured follow-up in ensuring maternal safety and recovery. Strengthening obstetric care at all levels is key to preventing such injuries and improving maternal health.

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