

Patient-Reported Functional Recovery Following Primary Repair of a Fourth-Degree Perineal Tear: A Case Report and Surgical Insights

Ebenezer Benson Hawanga^{1,2*}, Lusajo Mwangobele^{3,4}, Edward Kijazi^{1,2}, Clarence Sumbizi^{1,2}, Shweta Jaiswal^{1,2}, Ally Mwanga^{1,5}

¹Department of Surgery, The Aga Khan Hospital, Dar es Salaam, Tanzania

²Department of Surgery, Aga Khan University Medical College, East Africa, Dar es Salaam, Tanzania

³Department of Obstetrics and Gynaecology, The Aga Khan Hospital, Dar es Salaam, Tanzania

⁴Department of Obstetrics and Gynaecology, Aga Khan University Medical College, East Africa, Dar es Salaam, Tanzania

⁵Department of Surgery, Muhimbili University of Health and Allied Sciences (MUHAS), Dar es Salaam, Tanzania

Email: *ebenezerbenenson12@gmail.com

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Abstract

Background: Fourth-degree perineal tears are severe obstetric anal sphincter injuries involving the external anal sphincter, internal anal sphincter, and anorectal mucosa. They may result in anal incontinence, chronic perineal pain, dyspareunia, wound complications, and impaired quality of life. Early recognition, anatomical repair, and structured postoperative follow-up are central to management. **Case Presentation:** A 30-year-old primigravida at 39 weeks' gestation presented in spontaneous labour. Her pregnancy had been uncomplicated. During a prolonged second stage of approximately 3 hours, a median (midline) episiotomy was performed. She delivered a live female infant weighing 2,890 g with Apgar scores of 8 and 9 at 1 and 5 minutes. Post-delivery examination demonstrated a fourth-degree perineal tear extending through the episiotomy, with disruption of the external and internal anal sphincters, anorectal mucosa, and approximately 4 cm of the mid-vaginal wall. Multidisciplinary primary repair was performed within 1 hour of delivery. **Discussion:** This patient had recognised risk factors for obstetric anal sphincter injury, including primiparity, a prolonged second stage, and a midline episiotomy, despite the absence of fetal macrosomia, operative vaginal delivery, or shoulder dystocia. Recovery was gradual: anal incontinence was still reported at 4 weeks, improved by 8 weeks, and by 6 months the patient reported continence. At approximately 1 year, she reported no faecal or flatus incontinence, urgency, soiling, pain, or sexual dysfunction.

tion and had returned to usual daily activities. These outcomes were based on clinical review and patient-reported symptoms; no validated continence score, endoanal ultrasonography, or anorectal manometry was performed. **Conclusion:** Prompt recognition, multilayer anatomical repair, postoperative care, pelvic-floor rehabilitation, and longitudinal follow-up were associated with a favourable patient-reported functional outcome in this case. Objective sphincter imaging and physiological assessment were unavailable, so the long-term outcome should be interpreted as patient-reported rather than proof of complete anatomical or physiological recovery.

Keywords

Fourth-Degree Perineal Tear, Obstetric Anal Sphincter Injury, Perineal Reconstruction, Anal Continence, Postpartum Recovery

1. Introduction

Obstetric anal sphincter injuries (OASIS) are third- and fourth-degree perineal tears involving disruption of the external and/or internal anal sphincter, with fourth-degree tears extending through the anorectal mucosa [1]. They complicate approximately 3.8% of vaginal births globally, although reported rates vary with obstetric practice and diagnostic vigilance [2]. OASIS may cause anal incontinence, faecal urgency, chronic perineal pain, dyspareunia, wound complications, rectovaginal fistula, and reduced quality of life [3] [4]. Recognised risk factors include nulliparity, operative vaginal delivery, fetal macrosomia, prolonged second stage, persistent occiput posterior position, shoulder dystocia, and midline episiotomy [5].

Because risk factors do not identify every affected patient, systematic examination of the vagina and perineum, including digital rectal examination after vaginal delivery, remains essential for diagnosis [6]-[8]. Fourth-degree tears require prompt repair by an experienced clinician under appropriate anaesthesia, followed by antimicrobial prophylaxis, bowel-regulating therapy, analgesia, pelvic-floor rehabilitation, and structured follow-up [9] [10]. We report a 30-year-old primigravida who sustained an extensive fourth-degree tear after spontaneous vaginal delivery. The case illustrates the clinical course from immediate recognition and multidisciplinary repair to 1-year patient-reported functional recovery. This case report is prepared in accordance with the SCARE 2025 guideline [11].

2. Case Presentation

A 30-year-old primigravida at 39 weeks' gestation presented to the labour ward with progressively worsening lower abdominal pain radiating to the lower back and a blood-stained mucoid vaginal discharge ('show'). She reported normal fetal movements and denied leakage of liquor, fever, headache, visual disturbance, vaginal bleeding, or reduced fetal movements.

Her antenatal course had been uneventful. She booked for antenatal care at 6

weeks' gestation and attended nine visits. She remained normotensive and normoglycaemic, with no documented obstetric or medical complications. Her blood group was B Rh-positive, and screening for hepatitis B, human immunodeficiency virus, and syphilis was negative. She received routine antenatal supplementation and immunisations according to local practice.

On admission, she was alert, oriented, and haemodynamically stable. Abdominal examination showed a term gravid uterus with a longitudinal lie and cephalic presentation; the fetal heart rate was within the normal range. Vaginal examination showed a fully effaced cervix dilated to 4 cm, a well-engaged fetal head, and intact membranes. Baseline laboratory tests showed a white blood cell count of $9.84 \times 10^9/L$, haemoglobin of 11.0 g/dL, and platelet count of $306 \times 10^9/L$.

Latent-phase labour was diagnosed and monitored using standard intrapartum protocols. She entered active labour approximately 3 hours after admission. During the second stage, which lasted approximately 3 hours, a median (midline) episiotomy was performed for prolonged second stage. She subsequently had a spontaneous vaginal delivery of a live female infant weighing 2890 g, with Apgar scores of 8 and 9 at 1 and 5 minutes, respectively.

Immediately after delivery, systematic examination of the birth canal showed that the laceration extended through the median episiotomy and involved both the external and internal anal sphincters and the anorectal mucosa, consistent with a fourth-degree perineal tear. The injury extended proximally for approximately 4 cm into the mid-vaginal wall. She was transferred to the operating theatre within 1 hour of delivery for definitive repair under general anaesthesia. In lithotomy position, digital rectal examination and proctoscopic assessment confirmed the extent of injury. The anorectal mucosa was closed with continuous 3/0 Vicryl. Intermittent saline irrigation was used during the repair. The internal anal sphincter was identified and approximated separately using interrupted 2/0 Vicryl sutures. The disrupted external anal sphincter was reconstructed end-to-end with interrupted 2/0 Vicryl sutures on a round-bodied needle. The vaginal wall was closed continuously with 2/0 Vicryl, and the perineal epithelium was closed subcuticularly with 2/0 Vicryl.

Postoperatively, she received intravenous ceftriaxone 1 g every 12 hours and metronidazole 500 mg every 8 hours for 3 days. Analgesia consisted of paracetamol and diclofenac. An indwelling urinary catheter was maintained for 2 days. Lactulose 15 mL orally every 12 hours was prescribed to reduce constipation and straining. Oral intake was initially limited to clear fluids and then advanced according to clinical recovery and the treating team's protocol.

Follow-up continued for approximately 1 year. At 4 weeks, the perineal wound was clean and dry, with no clinically evident infection, dehiscence, wound breakdown, or purulent discharge; however, she still reported anal incontinence and manageable perineal pain. Pelvic-floor rehabilitation with Kegel exercises was formally prescribed. At 8 weeks, the wound appeared clinically healed and continence was improving. At 6 months, she reported that continence had returned. At approximately 1 year, she reported no faecal or flatus incontinence, urgency,

or soiling; she was pain-free, reported no sexual dysfunction, and had returned to her usual daily activities while continuing pelvic-floor exercises. No validated faecal-incontinence score, endoanal ultrasonography, or anorectal manometry was performed during follow-up.

3. Discussion

Fourth-degree OASIS disrupts the external anal sphincter, internal anal sphincter, and anorectal mucosa and can result in persistent anal incontinence, urgency, pain, dyspareunia, fistula, and impaired quality of life [2]. The risk-factor profile in this case should not be interpreted as low risk. In addition to primiparity, two clear intrapartum risk factors were present: a prolonged second stage of approximately 3 hours and a median (midline) episiotomy through which the tear extended. Conversely, fetal macrosomia, operative vaginal delivery, and shoulder dystocia were absent [4] [5] [12]-[16]. The case therefore illustrates that severe OASIS can occur without several commonly recognised predictors, while still occurring in the presence of established risk factors.

Accurate diagnosis depended on systematic post-delivery examination rather than risk stratification alone. Internal sphincter and anorectal mucosal injuries may be missed when postpartum examination is incomplete [6] [7] [12]. In this patient, immediate inspection, digital rectal examination, and proctoscopic assessment identified disruption of both sphincters and the anorectal mucosa, together with approximately 4 cm of vaginal extension. This allowed correct classification and transfer to theatre within 1 hour of delivery.

Primary repair followed a multilayer anatomical approach. The anorectal mucosa was closed first, the internal anal sphincter was identified and repaired separately, and the external anal sphincter was reconstructed end-to-end before closure of the vaginal and perineal tissues. Current evidence supports separate repair of an identifiable internal anal sphincter and reconstruction of the external anal sphincter using either end-to-end or overlap techniques according to the injury pattern and surgeon expertise; consistent long-term superiority of one external sphincter technique has not been established [17]-[20]. The proximal vaginal extension and anorectal involvement also supported collaborative obstetric and general surgical management.

Postoperative care aimed to protect the repair, reduce infection and pain, and minimise straining. Ceftriaxone plus metronidazole was administered for 3 days, lactulose was used as a bowel-regulating agent, and analgesia was provided with paracetamol and diclofenac. OASIS guidance generally supports antimicrobial prophylaxis and postoperative bowel regulation, although specific regimens vary between institutions [21]-[24]. Pelvic-floor rehabilitation was formally initiated at the 4-week review.

Functional recovery was gradual rather than immediate. Anal incontinence persisted at 4 weeks, improved by 8 weeks, and by 6 months the patient reported return of continence. At approximately 1 year she reported no faecal or flatus incontinence, urgency, or soiling and no pain or sexual dysfunction. These findings represent a

favourable patient-reported outcome after primary repair but should not be equated with objectively normal sphincter anatomy or physiology. No validated continence questionnaire, endoanal ultrasonography, anorectal manometry, or validated sexual-function instrument was used [8] [25]-[29]. Occult sphincter defects and neuromuscular dysfunction may persist despite limited symptoms, making structured long-term follow-up important after severe OASIS [2] [25]-[27].

The principal strengths of this report are the detailed description of the injury, repair sequence, and serial follow-up over approximately 1 year. Its main limitations are the single-case design and reliance on clinical examination and patient-reported symptoms without validated functional scores or objective sphincter testing. The observed outcome cannot establish that the timing of repair, a specific suture material, or the end-to-end technique was causally responsible for recovery. Future counselling should also address recurrence risk and mode of delivery in subsequent pregnancies, informed by symptoms and, where available, objective sphincter assessment [25] [30].

4. Conclusion

This case describes a fourth-degree perineal tear occurring in a primigravida with recognised intrapartum risk factors of prolonged second stage and midline episiotomy, despite the absence of fetal macrosomia or operative vaginal delivery. Immediate systematic examination enabled early diagnosis and multidisciplinary anatomical repair. Serial follow-up demonstrated progressive, favourable patient-reported functional recovery; however, the absence of validated continence scoring, endoanal ultrasonography, and anorectal manometry limits claims regarding complete anatomical or physiological recovery (**Figure 1**).



Figure 1. Intraoperative clinical image after primary repair of the fourth-degree obstetric perineal tear, showing approximation of the perineal body and vaginal introitus. Mild post-operative tissue oedema is present, with satisfactory tissue approximation and haemostasis.

Consent for Publication

Written informed consent was obtained from the patient for publication of this case report and the accompanying clinical image(s). A copy of the consent is available for review by the journal on request.

Ethical Approval

Not applicable for this single-patient case report according to the authors' institutional requirements.

Data Availability

All relevant clinical information is contained within the manuscript. Additional non-identifiable information may be available from the corresponding author on reasonable request.

Author Contributions

C.S.: conceptualisation, original manuscript writing, data collection, and proofreading; E.B.H.: original manuscript writing and citation management; L.M.: data collection and proofreading; E.K.: discussion development and proofreading; S.J.: data collection, supervision, and proofreading; A.M.: case supervision and proofreading.

Declaration of Generative AI Use

ChatGPT (OpenAI) was used for language editing during revision. All content was reviewed and approved by the authors, who take full responsibility for the manuscript.

Conflicts of Interest

The authors declare no competing interests.

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Abbreviations

OASIS

EAS

IAS

Obstetric Anal Sphincter Injuries

External Anal Sphincter

Internal Anal Sphincter