



Case Report

Extensive Perineal Injury Managed Through a Multidisciplinary Approach: A Case Report

¹Famous Dickson Ukpebor, ¹Clement Odion, ³Friday Emeakpor Ogbetere

¹Department of Surgery, Irrua Specialist Teaching Hospital Irrua, Edo State Nigeria

²Department of Surgery, Faculty of Clinical Sciences, Edo State University, Iyamho, Edo State

Corresponding author: Friday Emeakpor Ogbetere, Department of Surgery, Faculty of Clinical Sciences, Edo State University, Iyamho, Edo State. fridayemeakpor@gmail.com: +2348067753267

Article history: Received 13 February 2026, Reviewed 07 March 2026, Accepted for publication 17 March 2026

ABSTRACT

Background: Severe perineal injury is a rare but potentially life-threatening form of trauma; most commonly associated with motor vehicular crashes and blunt trauma. These injuries often involve multiple anatomical structures and are frequently complicated by contamination, infection, and functional impairment. Successful management depends on early recognition, accurate anatomical assessment, and a well-coordinated multidisciplinary team approach.

Case Presentation: We report a case of severe perineal injury in a trauma patient who sustained extensive soft-tissue damage to the perineum with involvement of the anal sphincter complex. The injury posed significant challenges due to the risk of sepsis, fecal contamination, and associated urogenital involvement.

Management and Outcome: Initial management prioritized prompt resuscitation and stabilization, with attention to life-threatening injuries. Definitive treatment involved urinary diversion through suprapubic cystostomy, fecal diversion via colostomy, and coverage of the perineal defect using a split-thickness skin graft. The anal sphincters were managed conservatively and allowed to heal by secondary intention. The patient demonstrated satisfactory wound healing, preserved continence, and an acceptable functional outcome on follow-up.

Conclusion: Severe perineal injuries require meticulous anatomical evaluation and staged management within a multidisciplinary framework. Early diversion procedures and appropriate reconstructive techniques can significantly reduce complications and improve functional outcomes.

Keywords: Split Thickness Skin graft, Colostomy, suprapubic cystostomy, severe perineal injury.



This is an open access journal and articles are distributed under the terms of the Creative Commons Attribution License (Attribution, Non-Commercial, ShareAlike" 4.0) - (CC BY-NC-SA 4.0) that allows others to share the work with an acknowledgement of the work's authorship and initial publication in this journal.

How to cite this article

Ukpebor FD, Odion C, Ogbetere FE. Extensive Perineal Injury Managed Through a Multidisciplinary Approach: A Case Report. The Nigerian Health Journal 2026; 26(1):595 – 600. <https://doi.org/10.71637/tnhj.v26i2.1338>



INTRODUCTION

Perineal injury is an uncommon presentation in trauma patients and is most frequently associated with high-energy mechanisms such as motor vehicle collisions and industrial accidents.^{1,2} The rarity of this injury often leads to delayed diagnosis and underestimation of its severity. The perineum is an anatomically complex region containing components of the anorectal and urogenital systems, pelvic floor musculature, and neurovascular structures.³⁻⁵ Extensive injuries of the perineum usually involve the urogenital, anorectal, pelvic and sacrococcygeal structures. Trauma to this area is therefore associated with significant morbidity, including fecal contamination, urinary retention, infection, sepsis, delayed wound healing, and long-term functional impairment.^{2,3,5-7}

Although perineal injuries occur in both sexes, they are reported more frequently in males, likely due to greater exposure to high-energy trauma.^{14,8} Blunt perineal trauma accounts for approximately 5–10% of anorectal injuries, with penetrating injuries being more common.^{5,6}

One of the most challenging aspects of managing perineal injuries is the high risk of fecal contamination. Fecal diversion is often required to reduce wound contamination, prevent sepsis, and promote healing.^{3,5,9-11} Successful outcomes depend on early resuscitation, careful assessment, and coordinated timely management by a multidisciplinary team consisting of surgeons from Plastic, General, Orthopedic and Urological surgery.^{1,9,12-15}

Mr. BF was a 35-year-old passenger on a motorcycle and was not wearing a helmet when a fast-moving lorry struck the motorcycle from behind. The impact caused multiple rollovers of the motorcycle, throwing the patient onto the ground and resulting in severe pain. He immediately noticed extensive avulsion of the perineal region with active bleeding and marked limitation of movement. He did not lose consciousness and had no bleeding from the craniofacial orifices. The patient was promptly transferred to our facility for further evaluation and management.

On presentation, the patient was hypotensive and tachycardic, with a blood pressure of 90/60 mmHg, respiratory rate of 30 cycles/min, pulse rate of 140 beats/min, and oxygen saturation of 98% on room air. The clinical findings were consistent with hypovolemic shock. The team promptly commenced anti-shock resuscitation. Oxygen therapy was administered via nasal prongs with continuous monitoring of oxygen

saturation. The patient remained conscious and alert, with a Glasgow Coma Scale score of 14.

He had an extensive avulsion injury involving the left perineal region, with a laceration measuring approximately 10 cm extending to the base of the scrotum (figure 1). There was complete disruption of the tissues surrounding the anal sphincter, with exposure of the Colles' fascia. Suprapubic fullness was also noted on abdominal examination



Figure 1: Dorsal surface of the perineum

Computed tomography (CT) of the abdomen and pelvis revealed no fracture of the left hemi-sacrum, distal sacrum, or coccyx, and no anterior displacement was observed. There was no evidence of pneumoperitoneum or hemoperitoneum. Chest radiography showed no pneumothorax or rib fractures. Plain radiographs of the lower limbs demonstrated no long-bone fractures. CT scans of the brain and facial bones were essentially normal.

The patient was taken to the operating theatre for examination under anaesthesia in the supine lithotomy position. The findings showed anterior displacement of the anus together with a cuff of perianal skin. A 10-cm perineal laceration was identified within the anterior urogenital triangle, with exposure of the Colles' fascia (figure 2). Although the laceration did not penetrate the underlying musculature, there was complete disruption of both the internal and external anal sphincters.



Figure 2: Ventral surface of the perineum with suprapubic cystostomy done.

Following assessment, the general surgeon performed a diverting colostomy (figure 3) to prevent faecal contamination of the perineal wound and inserted an improvised anal stent to maintain anal patency. Subsequently, the urologist performed a suprapubic cystostomy to achieve urinary diversion. These procedures allowed adequate control of contamination and facilitated subsequent perineal wound management.



Figure 3. Devine colostomy done in a previous midline scar.

The plastic surgeon performed serial debridement and irrigation under anaesthesia and commenced daily wound dressings with povidone iodine and honey. Broad-spectrum antibiotics were initiated while awaiting culture and sensitivity results, and vital signs and oxygen saturation were closely monitored.

In the second postoperative week, the patient developed septicaemia, evidenced by persistent fever (38–39 °C), tachycardia (130–145 bpm), tachypnoea (20–30 c/min), haemoglobin 7 g/dL, and leukocytosis ($15 \times 10^9/L$). He was treated with intravenous meropenem 2 g 12-hourly, metronidazole 500 mg 8-hourly, and received four units of fresh whole blood.

The patient's condition subsequently stabilized, with haemoglobin rising to 12 g/dL and vital signs normalizing. The suprapubic cystostomy was reversed, and serial wound care continued until a healthy wound bed was achieved. The residual perineal defect was then successfully resurfaced with a split-thickness skin graft, resulting in satisfactory healing and functional outcome (figure 4).

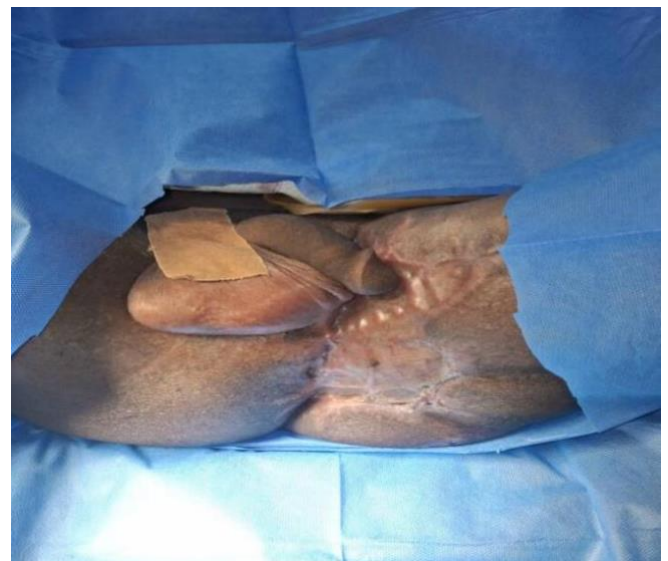


Figure 4: Split thickness skin graft (100%) take

During follow-up, the patient developed anal stenosis. Serial bouginage was initiated using Hegar dilators. Close monitoring demonstrated that both the external and internal anal sphincters were preserved.

At subsequent outpatient reviews in the colorectal and plastic surgery clinics, the patient maintained good sphincter tone, and complete graft take was observed.

Three months after the initial injury, he underwent an uneventful reversal of his loop colostomy (figure 5), restoring normal bowel continuity.

There was normal anal sphincteric tone with adequate defecation.

He was discharged at the 12th week. Had six months follow up period in the clinic with a remarkable improvement.



Figure 5: Reversal of colostomy done.

DISCUSSION

The complex nature of perineal injury as a torsional injury was initially described by Slack in 1952¹. He noticed that this mechanism of shearing was due to severe and large rotational forces which resulted in traumatic avulsion of the skin and subcutaneous with underlying musculoskeletal structures. It is more common in male than female.⁴ The study of Demetriades and Salim reported that gunshot wound account for 80%–85% of anorectal injuries, stab wound 3%–5%, and blunt trauma 5%–10% of cases⁵. Burak et al. also reported a similar trend of gunshot wound to the perineum accounting for 33.3%, stab wound 23.8%, and blunt trauma 25.4%.⁷ This is attributable to aggressive play and more strenuous activities by males which can lead to injury. Depending on the severity of the trauma, it initially may appear obscure and mask the real picture of the injuring.²

The impact of Perineal injury becomes noticeable as it evolves with time, most often resulting in flap necrosis. It is preceded by venous congestion due to increase venous pressure from impaired venous drainage³. The absence of obvious external injury does not preclude genitourinary tract injury or rectal injury, especially in impalement mechanism. Perineal wounds often occur with serious concomitant injuries including perianal avulsion, intestinal and/or urethral injury, pelvic fractures, life-threatening hemorrhage and even limb loss, which make them even more challenging to treat¹⁴. The reported case had examination under anaesthesia and the findings helped to categorize the injury as a severe perineal injury with gross contamination which informed the decision to carry out colostomy alone without attempting any primary repair. Also following the severe impact and avulsion of the perineal region there was distortion and tear of the perineal nerves compromising the bladder sphincter with resultant lower abdominal fullness and urinary retention. Hence temporal cystotomy was done by the urologist for the case reported.

The EUA done on the reported case indicate an extensive avulsion with distortion of the perineum involving the Colles fascia and the fascia over the perineal musculoskeletal structures. Because the rectum, anal canal, and sphincter were severely damaged in the acute phase, a diverting colostomy was required. Subsequently, excessive scarring of the rectoanal region led to anal stenosis. This was obviated with serial anal dilations, and the outcome was good. Before closure of the colostomy after healing of the perineal wound, there is need to ascertain the sphincteric function of the perianal region.^{4,7} Typically, anal manometry is done. Anorectal manometry is one of the most effective tools available to functionally evaluate various parameters of defecation, including rectoanal coordinated activity¹⁵. This tool was however lacking in our facility. Thus, saline retention test was done crudely to ascertain the functionality of the anal sphincters. This involved the use of normal saline infused via the distal stoma, beginning with small volumes till the urge to release the effluent is felt. It was observed that he could hold the fluid for long and even with delay, there was no leakage. This gave a rough guide to patient's sphincter competence and coordination. With satisfactory results from this test and confirmation of distal colon and rectal patency on distal colostogram, a decision was made to close the colostomy.

Reconstruction of perineal injuries follows the reconstructive ladder, progressing from simple to complex techniques based on extent of tissue loss, contamination, associated urogenital or anorectal injury, and patient stability^{7,8,9}. Serial debridement with dressing agent like povidone iodine and Horney was used in this index case reported with a remarkable result. Although some center advocated the use of negative pressure wound therapy on the severe perineal injuries.^{10,11,12} This is noticed to help in wound contraction, stimulate granulation tissue and decontaminate the bed from microorganism. Subsequently, split-thickness skin grafting was chosen as the most appropriate option on the reconstructive ladder to cover the residual defect.^{8,9} However, for moderate to extensive defect where there is need to obliterate dead spaces, the use of common flaps like gracilis muscle or myocutaneous flap, gluteus maximus flap, vertical rectus abdominis myocutaneous (VRAM) flap, or Posterior thigh flap can be used for reconstruction.¹⁴

A strong point to note from this case report is that perineal injuries are complex high-risk conditions often involving the genitourinary tract, anorectum, soft tissues, pelvic floor, nerves, and bones. Optimal outcomes depend on a coordinated multidisciplinary team (MDT) approach from initial resuscitation through definitive reconstruction and rehabilitation

CONCLUSION

Severe perineal injuries are uncommon. A multidisciplinary approach plays a key role in achieving a successful outcome. Performing a colostomy without primary repair prevents gross faecal contamination of the wound and promotes secondary wound healing with good results. However, when the defect is moderate to large, surgeons should apply an appropriate option on the reconstructive ladder. In some cases, once the wound has healed and sealed, patients may achieve good faecal continence without the need for anal sphincter repair.

Declaration of Patient Consent: The authors certify that they have obtained all appropriate patient consent form. In the form, the patient has given consent for the images and other clinical information to be reported in the journal. The patients understand that his names and initials will not be published, and due efforts will be made to conceal his identity, but anonymity cannot be guaranteed

Financial Support and Sponsorship: Nil

Conflicts of Interest: There are no conflicts of interest.

REFERENCES

1. Slack CC. Friction injuries following road accidents. *Br Med J*. 1952; 2: 262-264
2. Gagnier JJ, Kienle G, Altman DG, Moher D, Sox H, Riley D; CARE Group. The CARE guidelines: consensus-based clinical case reporting guideline development. *BMJ Case Rep*. 2013; 110: 603-608.
3. De Korte N, Dwars BJ, van der Werff JF. Degloving injury of an extremity. Is primary closure obsolete? *J Trauma*. 2009; 67: E60-61.
4. Ameh EA. Anorectal injuries in children. *Paediatr Surg Int* 2000;16:388-91
5. Demetriades D, Salim A. Colon and rectal trauma and rectal foreign bodies. In: Wolff BG, Fleshman JW, Beck DE, Pemberton JH, Wexner SD, editors. *The ASCRS Textbook of Colon and Rectal Surgery*. New York: Springer Science & Business Media; 2007. p. 322-34
6. Burak VU, Ahmet T, Abdullah O, Omer U, Ibrahim A, Mesut G, et al. Is Ostomy still mandatory in rectal injuries? *Int Surg* 2013; 98: 300-3
7. Mathes SJ, Nahai F. *Clinical Applications for Muscle and Musculocutaneous Flaps* (2nd edition). C.V. Mosby Company, St. Louis, 1982
8. Levin LS. "The Reconstructive Ladder: An Orthoplastic Approach." *Orthopedic Clinics of North America*, 1993; 24(3): 393-409.
9. Simman R. "Wound closure and the reconstructive ladder in plastic surgery." *Journal of the American College of Certified Wound Specialists*, 2009; 1:6-11.
10. Cahill C., Fowler A., Williams L.J. The application of incisional negative pressure wound therapy for perineal wounds: a systematic review. *International Wound Journal*, 2018.
11. Negative pressure wound management in perineal wound status post abdominoperineal resection and extralevator abdominoperineal excision: A meta-analysis. (2025). PubMed.
12. Negative pressure wound therapy and split thickness skin graft aided in extensive perineum necrotizing fasciitis. *BMC Surgery*. [SpringerLink](#)
13. Chuang TY, Tingey P, Malik H, Srinath H, Sax A. "A novel approach of non-surgical faecal diversion." *Int J Case Rep Images* (2018): 00971.
14. Brown AM, Rubayi S. "Reconstructive Surgery of the Perineal and Anal Area after trauma with Lower Extrimity Flap." *Clin Surg* (2020): 5: 2964.



15. Scott S M, Gladman M A. "Manometric, sensorimotor, and neurophysiologic evaluation of anorectal function." *Gastroenterol Clin North Am* 37.3 (2008): 511-38. Document.