DOI: https://doi.org/10.53350/pjmhs20231710404

ORIGINAL ARTICLE

Surgical Management of Postpartum Perineal and Rectovaginal Injuries

ASIF MEHMOOD[1], BUSHRA NABI[2], SAIMA ZULFIQAR[3], HAFSA MUBASHIR[4]
[1]*Associate Professor, General Surgery, Khalifa Gul Nawaz Teaching Hospital Bannu*
[2]*Assistant Professor, Obs and Gynae, Khalifa Gul Nawaz Teaching Hospital Bannu*
[3]*Assistant professor, Department of Gynae and Obs. Sheikh Zayed Hospital Rahim Yar Khan*
[4]*Assistant Professor, Department of Gynecology and Obstetrics, Sialkot Medical College Sialkot*
Correspondence to: Bushra Nabi, Email: nabibushra@yahoo.com

ABSTRACT

Background: The causes of maternal morbidity would be postpartum perineal and rectovaginal injuries such as obstetric anal sphincter injuries and rectovaginal fistulas, which are caused by vaginal delivery. Unless addressed in a timely fashion, these injuries may have long-term physical, psychological and social consequences. The surgical repair continues to be the primary mode of treatment, especially when the injury is moderate to severe, however, the results are inconsistent due to the timing of undertaking the surgery, the extent of injury and surgical skills.

Objective: To assess the trend, surgical intervention measures, and prognoses of postpartum perineal and rectovaginal trauma treated in a tertiary care hospital in Peshawar.

Methods: This retrospective observational study was based on the review of medical records of women surgically managed because of postpartum perineal and rectovaginal injuries within a 5 year time. The outcomes measured were demographic factors, obstetric risk factors, nature and degree of injury, time and surgical repair type, postoperative complications, and functional outcomes at follow-up. Primary repair was compared with delayed surgical repair of the defects within 24 hours.

Results: One hundred and sixty-two patients were included. The most frequent injury was third-degree perineal tears, and the others were the fourth-degree tears and the rectovaginal fistulas. Primary repair was done immediately in 64.2 percent of cases and was linked to an increase in uneventful repair and less postoperative problems than delayed repair. The overall success in surgery was excellent with majority of patients recording satisfactory anatomic and functional results. Cases that were delayed and complicated were more prone to complications and recurrence.

Conclusion: Postpartum perineal and rectovaginal injuries are treated by means of timely surgical repair, which brings good results. There is a need to strengthen the systems of early recognition and referral to minimize maternal morbidity.

Keywords: post-partum perineal injury; obstetric anal sphincter injury; rectovaginal fistula; surgical repair.

INTRODUCTION

The problem of postpartum perineal and rectovaginal injuries is a major source of maternal morbidity that is under-appreciated in many parts of the world. Such injuries normally arise as a result of vaginal delivery process and go from slight perineal cuts to complicated obstetrics anal sphincter injuries (OASIS) and rectovaginal fistulas. These conditions do not just end at physical trauma, often including losses in their continence, sexual functioning, psychological health, and overall quality of life of women who have the condition[1].

Perineum is especially susceptible to the second stage of labor, including, however not limited to, instrumental delivery, extended labor, macrosomia, malpresentation, or insufficient perineal support. Although first and second-degree perineal tears can readily be managed by simple treatment, third and fourth-degree injuries involving the anal sphincter complex and the rectal mucosa have a high risk of developing long-term complications in case they are not treated promptly and properly[2]. Proper identification and categorization of these injuries during delivery is thus important in providing a way forward on the best surgeries to repair them.

Unidentified or improperly treated obstetric trauma can result in rectovaginal injuries such as rectovaginal fistulas. Such injuries cause atypical interaction of rectum and vagina causing painful symptoms like leaking faeces, frequent infections and social isolation. In the low-resource context, complications or delayed diagnosis and lack of access to specialized surgical care exacerbate the occurrence and chronicity of these conditions[3].

Treatment of major postpartum perineal and rectovaginal injuries is still pegged on surgical management. Emergency primary repair by skilled staff has been demonstrated to lower the cases of anal incontinence and wound complications. The major ones are precise restoration of the anatomy, the correct choice of sutures, tension-free closure, and observance of aseptic procedures. The timing of the repair, either immediately or delayed depends on the state of the tissue, infection or no infection, and the stability of the patient[4].

There are special issues of surgical concern with regards to delayed presentations, especially in those involving known rectovaginal fistula or poorly healing perineal trauma. Prolonged inflammation, fibrosis and tissue destruction can require more radical reconstructive procedures, which can include layered repair, flap interposition or sphincteroplasty. The inclusion of colorectal surgeons, urogynecologists, and physiotherapists is frequently necessary to get the best functional results[5].

The postsurgical treatments also contribute to effective surgery management. Antibiotic prophylaxis, stool softeners, diet change, pelvic floor rehabilitation and close follow-up are vital measures that can be used to encourage healing and avoid recurrence. Lack of consideration of these factors can undermine surgical repair and lead to life-long symptoms or re-injury[6].

Although there has been an improvement in the care of obstetrics and surgery, postpartum perineal and rectovaginal injuries remain a clinical problem because they are difficult to recognize, depend on surgeon practice, and have no standardized management guidelines. Patient-centred counselling, compliance with evidence-based practices, and continuous training are the critical factors in improving the outcomes and the long-term sequelae of these injuries[7].

Since postpartum perineal and rectovaginal injuries are associated with a significant physical, psychological, and social effect, it is critically important that clinicians working with mothers should have a clear understanding of their surgical treatment. Extensive assessment and prompt and proper surgical surgery are the keys in terms of restoring anatomy, function and quality of life to the affected women[8].

Objective: The study aims at giving an in-depth description of the surgical management of postpartum perineal and rectovaginal injuries focusing on the indications of the same, the principles of repair, the timing of repair, and the factors that affect the functional outcomes.

Received on 15-08-2023
Accepted on 15-10-2023

MATERIALS AND METHODS

Study Design and Setting: The study was a retrospective observational one and was done at Khalifa Gul Nawaz Teaching Hospital Bannu during the period Feb 2023 to July 2023. The hospital has a large number of vaginal births and complicated postpartum referrals hence it is a suitable environment to assess the patterns and outcome of surgical repair of postpartum perineal and rectovaginal injuries.

Study Population: The population of the study included 162 women with postpartum perineal, or rectovaginal injuries after vaginal birth and were surgically managed at the study centre within the specified time. Medical history of patients who came to the office immediately after childbirth or later on due to delayed complications caused by obstetric perineal trauma were consulted. Referred patients of both peripheral and in-house born were also considered so that tertiary care practice could be seen in the real world.

Inclusion and Exclusion Criteria: The study included women aged 18 years and older who had third- or fourth-degree perineal tears, obstetric anal sphincter injuries, and rectovaginal injuries that could be related to childbirth and surgically performed. Cases that had full medical record with details on the findings during the operations and the follow up after the operations were regarded as being eligible. To ensure reliability of the data, patients with non-obstetric causes of perineal or rectovaginal injury, patients whose records contained considerable missing information were excluded.

Data Collection Procedure: The retrospective method was used to gather data in the form of hospital medical records, labor ward registers, and operative theatre logs and postoperative follow-ups. The data extraction form was structured in order to ensure uniformity. Some of the variables that were recorded were demographic features, parity, mode of delivery, place of delivery, risk factors which included instrumental delivery or long labor, type and grade of injury, time interval between delivery and surgical repair as well as the type of surgical technique that was used. Postoperative course, complications, and functional outcomes were also observed in the follow up visits.

The Surgical Management Protocol: The management approaches involving surgical intervention were arrived at depending on the nature and level of injury, when the injury was presented, and the state of the tissue at the moment of surgery. In acute cases found out within 24 hours of delivery, immediate primary repair was carried out after normal principles of anatomical reconstruction. They performed delayed repairs in patients who left late with the poorly healed perineal injury or known rectovaginal fistulas, which may need the use of layered closure and, in some cases, reconstructive surgery. All the surgeries were conducted by senior obstetricians or surgeons who have worked in the area of perineal and pelvic floor repair according to the institutional protocols.

Postoperative Management and Follow-Up: The postoperative care comprised of standardized antibiotic cover, pain relief, bowel management using stool softeners and perineal hygiene guidance. Patients were advised about pelvic floor exercises and straining avoidance in the healing recovery. Regular follow-up evaluations in the outpatient department were done to assess wound healing, continuity or in continuity of the symptoms. The results obtained within the framework of these visits were included in the final analysis.

Outcome Measures: Successful anatomical repair and early post surgery complications, such as wound infection, dehiscence, and re-intervention, were the main outcomes evaluated. Functional outcomes like faecal or flatal continent, patient reported discomfort and regressive rectovaginal communication after the follow up period were considered secondary outcomes. The retrospective nature of the study pre-empted the results as the evaluations were done by clinical documentation as opposed to the use of patient-reported questionnaires.

Ethical Considerations: The study was reviewed by the institutional review committee which gave the study ethical approval before data collection. Strict patient confidentiality was ensured through patient anonymization when extracting and analysing data. Since the study was a retrospective review of the available medical records, informed consent was not used as per the institutional ethical standards.

RESULTS

The study period involved 162 patients who were surgically managed with postpartum perineal and rectovaginal injuries. The average age of the patients was 27.9 plus 4.6 years old with the largest percentage of patients being in the range of 21-30 years. The majority of the patients were multiparous with a significant percentage of them being referred by the peripheral health facilities following vaginal births. There was poor presentation especially those of the women with rectovaginal injuries, which are gaps in early recognition and referral.

The most common injury that was experienced was third-degree perineal tears, which were then followed by fourth-degree tears and rectovaginal fistulas. Instrumental vaginal birth and long second stage of labor became the most common reputed obstetric risks. There were also a significant number of injuries that were found after delivery as opposed to during the operation, particularly in the referred cases, which led to a postponement in surgery and complication in repair.

In terms of timing of surgery, about two-thirds of patients that were subjected to surgery had immediate primary repair within 24 hours of delivery with the other patients delaying surgical intervention because of late presentation, infection, or tissue edema. Such cases as rectovaginal fistulas and poorly healed perineal wounds were more likely to be delayed. The methods of surgery depended on the type and time of injury used, but the most commonly used method was the layered anatomical repair.

The overall outcome of the postoperative was positive. Majority of the patients were healed without complications. The majority of complications that occurred in the early postoperative period were wound infection, wound dehiscence and perineal pain, and more complications were noted in delayed repairs than immediate repairs. There were no cases of perioperative mortality. Rectovaginal fistula patients proved to have extended hospitalization and requirement of the follow-up.

Table 1: Demographic and Obstetric Characteristics of Patients (n = 162)

Variable	Frequency	Percentage (%)
Age ≤20 years	18	11.1
Age 21–30 years	96	59.3
Age >30 years	48	29.6
Primiparous	52	32.1
Multiparous	110	67.9
Institutional delivery	94	58.0
Referred from peripheral centres	68	42.0

Table 2: Type of Postpartum Perineal and Rectovaginal Injuries

Type of Injury	Number of Patients	Percentage (%)
Third-degree perineal tear	72	44.4
Fourth-degree perineal tear	46	28.4
Rectovaginal fistula	32	19.8
Combined injuries	12	7.4

The satisfaction levels of the majority of patients with regard to their continence were determined using functional outcomes measured in follow-up visits. Only a minor fraction complained of transient flatal incontinence which was resolved by conservative treatment and pelvic floor rehabilitation. Persistent faecal incontinence and recurrence of rectovaginal communication were

rare, but had been noted in most patients who had a delayed repair after long tissue damage or infection.

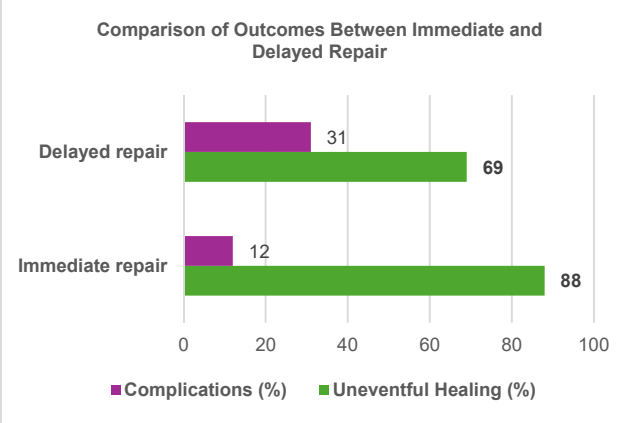
Table 3: Surgical Timing and Techniques Employed

Parameter	Frequency	Percentage (%)
Immediate primary repair (<24 hours)	104	64.2
Delayed repair (>24 hours)	58	35.8
Layered anatomical repair	118	72.8
Sphincteroplasty	28	17.3
Reconstructive flap techniques	16	9.9

Table 4: Postoperative Outcomes and Complications

Outcome	Number of Patients	Percentage (%)
Uneventful healing	132	81.5
Wound infection	14	8.6
Partial wound dehiscence	9	5.6
Transient flatal incontinence	5	3.1
Recurrence of rectovaginal fistula	2	1.2

Figure 1: Comparison of Outcomes Between Immediate and Delayed Repair



DISCUSSION

The current research shows that third-degree perineal tears supersede other degrees among women subjected to surgical control in a tertiary care centre in Peshawar, and the immediate primary repair is associated with better rates of an uneventful healing process than the delayed repair. These results are consistent with various recent series highlighting the high rates of injuries of the third degree in high-volume obstetric units and the positive short-term results of the timely anatomical reconstruction of patients[9,10]. Other authors of a multicentre review, as we had found earlier, had found that prompt recognition and repair within 24 hours greatly minimized wound complications and did enhance initial continence outcomes[11].

Prolonged second stage labor and instrumental delivery became the most frequently occurring obstetric risk factors in our cohort given that there is constant reporting of operative vaginal birth and severe perineal trauma. Similar reports in both regional and international have recorded a high rate of obstetric anal sphincter injuries (OASIS) after forceps or vacuum-assisted delivery, especially to primiparous women and those with fetal macrosomia[12,13]. Our referral pattern, in which a high percentage of patients have an origin at peripheral centres, may also have led to a delay in the diagnosis of some of them, as has been noted in other studies in the same low- and middle-income settings where access to skilled intrapartum repair is uneven[14].

Our series of surgical methods, where layered anatomical repair was the primary choice and selective application of sphincteroplasty and flap repair applied to more complex or delayed cases represented modern-day surgical algorithms promoted in recent guidelines and cohort studies[15,16]. The results of layered repair in our cohort were good and similar to those of other studies that have documented success in perineal body and sphincter complex meticulous restoration resulting in fewer cases of early wound breakdown and positive function recovery in the short term[17]. On the other hand, the necessity of reconstructive flaps and piece-meal operations with late presentations identify the extra complexity and reduced primary success rates that were reported in other delayed-repair series[18].

In our study, overall and disproportional increases in the complication rates were high in patients who had a delayed repair, which was also supported by literature. Delays in wound healing have been attributed to chronic inflammation, tissue fibrosis, and bacterial colonies by several investigators leading to high wound infection, dehiscence and fistula recurrence[19]. The results of our study contribute to the idea that timing is a paramount factor to cause early postoperative morbidity and justify efforts to improve intrapartum awareness and immediate control to reduce the development of chronic defects.

The medium-term functional outcomes were positive, with majority of the patients regaining satisfactory continence and only a small proportion of patients developing transient flatal incontinence. These findings align with those which have been previously observed in cohort studies with satisfactory functional recovery following primary repair, especially when done by competent operators with postoperative rehabilitation (structured)[11,15]. Nonetheless, persistent fecal incontinence and fistula recurrence, but are not common in our series, were more common in delayed and complex cases, a finding that is similar to other reports who pointed at the worse long-term outcome of neglected or poorly treated obstetric perineal trauma[16,18].

In comparison, this evaluation implies that tertiary centres that have developed protocols and have experienced surgical teams are likely to record anatomical and functional improvements compared to those with limited resources, where delayed presentation and incompetent repair tactics account to an increased morbidity[14,19]. Our tertiary care experience falls within this paradigm: regardless of the referrals and a large proportion of late presentations, the results were positive in case senior surgeons performed the repairs timely. This underscores the importance of centralizing complicated obstetric pelvic floor services and enhancing referral patterns to reduce delays to surgical procedures as suggested by numerous recent policy and clinical practice documents[12,20].

Lastly, the correlation of postoperative management, such as antibiotic prophylaxis, bowel regimen, and pelvic floor rehabilitation, with successful outcomes in our cohort reflects the evidence on the use of comprehensive management of perioperative care as a factor of healing and functional recovery on randomized and observational studies[17,19]. Although our retrospective design precluded formal standardized testing of pelvic floor function, the routine application of conservative therapy during the postoperative period may have led to the high percentage of uneventful healing and low number of persistent incontinences observed.

Limitations: This research paper has a number of limitations associated with retrospective design. The use of medical records entailed limitation of granularity of functional outcome assessment, as well as the use of validated continence questionnaires in every patient. There is a possibility of selection bias because the cohort will include cases that were referred to a tertiary center and may be inaccurate at the level of incidence or less severe injuries that could be treated conservatively in the community. The subsequent follow-up was also not fixed and could have been too short to include all late recurrences or functional long-term sequelae. Lastly, there is possible heterogeneity of surgical practice that may affect outcomes, and in future prospective, preferably multicentric, research, there should be no contemporary control group or standardized operative technique to all the operators.

CONCLUSION

In settings where high volume of delivery and late referrals is the case, postpartum perineal and rectovaginal injuries have continued to be one of the most prominent causes of maternal morbidity. This paper proves that anatomical and functional outcomes of timely recognition and primary surgical repair are superior to the outcomes when interventions are delayed. The overall prevalence of positive outcomes presented in this tertiary care experience highlights how critical perioperative care, standard approach to repair, and overall care after surgery is in limiting complications and sequelae. It is necessary to strengthen intrapartum assessment and early pathways of referral and surgical expertise at the peripheral and tertiary levels to advance maternal quality of life and decrease the weight of preventable postpartum morbidity of the pelvic floor.

REFERENCES

1. World Health Organization. WHO recommendations: intrapartum care for a positive childbirth experience. Geneva: WHO; 2018.
2. Jurczuk M, Greene RA, O'Neill SM, et al. The OASI care bundle quality improvement project: evaluation of a national roll-out and lessons learned. BMJ Open. 2021;11(4):e044844.
3. Bidwell P, Kennedy S, Ballard K, et al. Clinicians' perspectives on the Obstetric Anal Sphincter Injury (OASI) Care Bundle: a qualitative study. BMJ Open. 2020;10(9):e035674.
4. Laine K, Fodstad K, Räisänen S. Obstetric anal sphincter injuries in spontaneous vaginal births in nulliparous pregnant individuals: a 21-year cohort study based on real-world data. American Journal of Obstetrics and Gynecology. 2025 Jun 11.
5. Spinelli A, Laurenti V, Carrano FM, Gonzalez-Díaz E, Borycka-Kiciak K. Diagnosis and treatment of obstetric anal sphincter injuries: New evidence and perspectives. Journal of Clinical Medicine. 2021 Jul 23;10(15):3261.
6. Noori IF, Al-Salihi A, Al-Badr A. Rectovaginal fistulas: outcomes of various surgical repair techniques — a single-center series. Int J Surg Case Rep. 2021;82:105939.
7. Viannay P, de la Codre F, Brochard C, Thubert T, Meurette G, Legendre G, Venara A. Management and consequences of obstetrical anal sphincter injuries. Journal of visceral surgery. 2021 Jun 1;158(3):231-41.
8. Bergendahl S, Ankarcrona V, Leijonhufvud Å, Hesselman S, Karlström S, Kallner HK, Wendel SB. Lateral episiotomy versus no episiotomy to reduce obstetric anal sphincter injury in vacuum-assisted delivery in nulliparous women: study protocol on a randomised controlled trial. BMJ open. 2019 Mar 1;9(3):e025050.
9. Jurczuk M, Phillips L, Bidwell P, Martinez D, Silverton L, Sevdalis N, van Der Meulen J, Gurol-Urganci I, Thakar R. A care bundle aiming to reduce the risk of obstetric anal sphincter injury: A survey of women's experiences. BJOG: An International Journal of Obstetrics & Gynaecology. 2025 Apr;132(5):588-95.
10. Ducarme G, Pizzoferrato AC, De Tayrac R, Schantz C, Thubert T, Le Ray C, Riethmuller D, Verspyck E, Gachon B, Pierre F, Artzner F. Perineal prevention and protection in obstetrics: CNGOF clinical practice guidelines. Journal of gynecology obstetrics and human reproduction. 2019 Sep 1;48(7):455-60.
11. Lallemant M, Thakar R, Sultan AH. Clinical practices in management and follow-up of obstetric anal sphincter injuries: systematic review of guidelines and cohort studies. Int Urogynecol J. 2024;35(6):1501–1514.
12. Leborne P, White MT, Deneux-Tharaux C. Incidence of obstetric anal sphincter injuries following breech vaginal delivery: a multicentre cohort study. BMC Pregnancy Childbirth. 2023;23:745.
13. Tuma F, McKeown DG, Al-Wahab Z. Rectovaginal fistula. StatPearls [Internet]. 2023 May 14.
14. Johannesson E, Sjöberg ÅL, Segerbrand N, Olsén MF, Gutke A. Women's experiences of obstetric anal sphincter injury and physical therapy interventions-A qualitative study. Brazilian journal of physical therapy. 2022 Mar 1;26(2):100397.
15. Elnaim ALK, Elghazaly H, Mohammed B, et al. Obstetric anal sphincter injuries and secondary overlapping sphincteroplasty: a systematic review of outcomes. Colorectal Dis. 2025;27(4):450–462.
16. Maeda K, Wada N, Shida A. Treatment of rectovaginal fistula. Journal of the Anus, Rectum and Colon. 2023 Apr 25;7(2):52-62.
17. Karp NE, Kobernik EK, Berger MB, Low CM, Fenner DE. Do the surgical outcomes of rectovaginal fistula repairs differ for obstetric and nonobstetric fistulas? A retrospective cohort study. Urogynecology. 2019 Jan 1;25(1):36-40.
18. Perslev M, Søgaard KK, Nielsen P, et al. Increased risk of obstetric anal sphincter injury in women delivering vaginally after prior cesarean section: population-based analysis. Acta Obstet Gynecol Scand. 2022;101(2):243–251.
19. Jurczuk M, Bidwell P, Wolstenholme D, Silverton L, Van der Meulen J, Sevdalis N, Gurol-Urganci I, Thakar R. OASI2: a hybrid effectiveness implementation RCT to inform scale up of care bundle to reduce obstetric anal sphincter injury (OASI) caused during childbirth. Implementation Science. 2020 Dec 17;15(SUPPL 4).
20. Roper JC, Amber N, Wan OY, Sultan AH, Thakar R. Review of available national guidelines for obstetric anal sphincter injury. International urogynecology journal. 2020 Nov;31(11):2247-59.

This article may be cited as: Mehmood A, Nabi B, Zulfiqar S, Mubashir H; Surgical Management of Postpartum Perineal and Rectovaginal Injuries**.** Pak J Med Health Sci, 2023; 17(10): 404-407.