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Gracilis Muscle Neosphincter As A Surgical Management of Traumatic Fecal Incontinence

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ORIGINAL

Abstract

Faecal incontinence after obstetric trauma is a distressing condition that profoundly impacts patients' daily lives. Traditional management approaches often fail to provide satisfactory outcomes, particularly in cases where the anal sphincter complex is compromised. This abstract summarizes the challenges and advancements in managing faecal incontinence following obstetric trauma, highlighting the importance of a multidisciplinary approach involving surgical interventions. We present a case of a young lady who suffered from faecal incontinence after a traumatic delivery and opted for corrective surgery as a treatment option for faecal incontinence post-obstetric trauma. Additionally, we discuss the role of gracilis muscle neo-sphincter reconstruction as a promising surgical technique in restoring faecal continence in refractory cases. Through a review of pertinent literature and illustrative case reports, we emphasize the importance of early diagnosis, individualized treatment strategies, and ongoing research efforts aimed at enhancing outcomes and improving the quality of life for affected individuals.

Introduction

The reported occurrence of faecal incontinence due to overt obstetric anal sphincter injuries across European countries varies from 0.6 to 4.2% (1). Secondary repair of sphincter defects following obstetric trauma typically yields short-term success rates ranging between 64 and 80% (2; 3; 4). Addressing faecal incontinence requires a multidisciplinary approach, wherein surgical intervention is one of several therapeutic avenues. Neo-sphincter reconstructions are viable options for individuals who exhibit inadequate improvement with conservative treatments or have previously experienced unsuccessful sphincter repair attempts. In cases where a substantial portion of the native sphincter is lost due to trauma, neo-sphincter reconstruction may be considered as a primary procedure. The utilization of gracilis muscle neo-sphincter creation for managing obstetric perineal injuries offers numerous potential advantages, primarily focused on reinstating anal sphincter function to alleviate faecal incontinence resulting from such injuries (5). By significantly enhancing patients' bowel control, this surgical intervention provides a tangible improvement in continence, thereby contributing to an enhanced quality of life for women affected by obstetric perineal injuries. The gracilis muscle transposition technique was originally introduced by Pickrell et al (6). This innovative approach to sphincter substitution was initially applied to 12 children, predominantly afflicted with congenital causes of incontinence such as spina bifida, meningocele, or neurogenic malformations affecting the perineum and rectum. Graciloplasty entails detaching the gracilis muscle from its distal attachment to the tibia and fashioning it into a muscle wrap around the native or artificially constructed anal canal, configured in an α, ε, or γ arrangement, with the gracilis tendon affixed to one of the ischial tuberosities. This technique offers a degree of mechanical obstruction, primarily addressing the retaining component of continence. Moreover, long-term follow-up studies conducted by Leguit et al(7) demonstrated improved continence outcomes in a series of patients who underwent gracilis muscle transposition.

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(a) (b)

Figure 1. Intra-Operative Clinical Picture - Before (Left) ; After Repair (Right).

(a) (b)

Figure 2. Post-Operative Picture - Perineal Scar (Left) ; Left Thigh Scar (Right)

Case Presentation

A 37-year-old woman suffered from faecal incontinence persisting for three years following a traumatic obstetric delivery attended by an uncertified midwife. The delivery resulted in a grade 4 perineal injury affecting her sphincters. Although an initial surgical repair of the sphincter was performed, she was subsequently lost to follow-up. Nearly three years elapsed before she resumed follow-up care. Endoanal ultrasound revealed distortion of the chronic sphincter muscle complex. She underwent sphincter reconstruction with a gracilis muscle transposition flap. Intraoperatively, it was observed that the perineal body was absent, along with a complete absence of the sphincter complex anteriorly. Additionally, a contracted sphincter complex was identified at the 3 and 9 o'clock positions, respectively. She was discharged well post-operatively. During subsequent serial follow-up appointments, the patient demonstrated significant improvement in her continence status. Through diligent monitoring and supportive care, she gradually regained control over her bowel movements, achieving a notable enhancement in her quality of life.

Discussion

Gracilis muscle transposition, also known as graciloplasty or gracilis neo-sphincter reconstruction, constitutes a crucial surgical intervention in the comprehensive management of traumatic faecal

incontinence. This procedure, indicated for patients with sphincter dysfunction resulting from obstetric trauma, pelvic injuries, or failed sphincter repair surgeries, involves harvesting the gracilis muscle from the inner thigh and fashioning it into a neo-sphincter around the anal canal. Through meticulous surgical technique, including careful preservation of neurovascular structures during muscle harvest and precise placement around the anal canal, the gracilis muscle serves to restore continence in individuals plagued by refractory faecal incontinence.

Preoperative evaluation, encompassing clinical assessment, imaging studies, and functional tests, facilitates appropriate patient selection and surgical planning. Postoperatively, patients undergo comprehensive monitoring to assess outcomes and manage potential complications. The efficacy of gracilis muscle transposition in restoring faecal continence and improving quality of life has been well-documented, with significant reductions in incontinence episodes and sustained benefits observed in long-term follow-up studies.

However, the procedure is not devoid of risks, as potential complications such as infection, wound dehiscence, and donor site morbidity necessitate vigilant postoperative care and management. Furthermore, the success of gracilis muscle transposition hinges on various factors, including patient selection, surgical technique, and adherence to postoperative protocols.

In general, gracilis muscle transposition stands as a valuable component of the surgical armamentarium for traumatic faecal incontinence, offering hope for patients grappling with the profound impact of sphincter dysfunction on their daily lives. Through continued advancements in surgical techniques, patient selection criteria, and postoperative care protocols, the field strives to optimize outcomes and enhance the overall efficacy of neo-sphincter reconstruction in restoring continence and improving the quality of life for affected individuals.

Conclusion

This successful outcome underscores the effectiveness of gracilis muscle transposition flap surgery in addressing complex cases of faecal incontinence, highlighting the importance of meticulous surgical techniques and comprehensive postoperative management in achieving favourable patient outcomes.

Conflict Of Interest

Author declare no conflict of interest and no funding for this study.

References

[1] Laine K, Gissler M, Pirhonen J. Changing incidence of anal sphincter tears in four Nordic countries through the last decades. European Journal of Obstetrics & Gynecology and Reproductive Biology. 2009;146(1):71-5.

[2] Dudding TC, Vaizey CJ, Kamm MA. Obstetric anal sphincter injury: incidence, risk factors, and management. Annals of surgery. 2008;247(2):224-37.

[3] Rasmussen OØ, Puggaard L, Christiansen J. Anal sphincter repair in patients with obstetric trauma: age affects outcome. Diseases of the colon & rectum. 1999;42(2):193-5.

[4] Barisic GI, Krivokapic ZV, Markovic VA, Popovic MA. Outcome of overlapping anal sphincter repair after 3 months and after a mean of 80 months. International journal of colorectal disease. 2006;21:52-6.

[5] Zorcolo L, Covotta L, Bartolo DC. Outcome of anterior sphincter repair for obstetric injury: comparison of early and late results. Diseases of the colon & rectum. 2005;48(3):524-31.

[6] Glasgow SC, Lowry AC. Long-term outcomes of anal sphincter repair for fecal incontinence: a systematic review. Diseases of the colon & rectum. 2012;55(4):482-90.

[7] PICKRELL K, MASTERS F, GEORGIADE N, HORTON C. Rectal sphincter reconstruction using gracilis muscle transplant. Plastic and Reconstructive Surgery. 1954;13(1):46-55.