Journal of Current and Advance Medical Research
January 2024, Vol. 11, No. 1, pp. 56-59
http://www.banglajol.info/index.php/JCAMR
ISSN (Print) 2313-447X
ISSN (Online) 2413-323X
NLM Catalog ID 101673828
DOI: https://doi.org/10.3329/jcamr.v11i1.82049

PERSPECTIVE

Laparoscopic Inguinal Hernia Surgery Using the Totally Extraperitoneal (TEP) Method in the Context of Bangladesh: A Promising Evolution in Surgical Practice

Pankaj Kumar Saha[1], Ratna Rani Roy[2], Md Abdullah Yusuf[3]

[1]Senior Consultant, Department of General, Laparoscopic & Bariatric Surgery, Evercare Hospital, Dhaka, Bangladesh and Former Head & Professor of Surgery, Shaheed Suhrawardy Medical College, Dhaka, Bangladesh; [2]Professor (CC), Department of Anatomy, Dr. Sirajul Islam Medical College, Dhaka, Bangladesh; [3]Associate Professor, Department of Microbiology, National Institute of Neurosciences and Hospital, Dhaka, Bangladesh

Abstract

Laparoscopic inguinal hernia repair using the Totally Extraperitoneal (TEP) method represents a significant advancement in minimally invasive surgery. In the context of Bangladesh, where open hernia repair remains prevalent due to limited resources and training, the adoption of TEP offers a promising shift toward enhanced patient outcomes. This technique minimizes postoperative pain, reduces infection risks, and shortens recovery time, making it especially beneficial in high-volume surgical centers. Despite challenges such as cost and the need for specialized training, early experiences from select Bangladeshi institutions suggest that with appropriate investment in infrastructure and education, TEP can become a standard of care. [*Journal of Current and Advance Medical Research, January 2024;11(1):56-55*]

Keywords: Laparoscopic surgery; inguinal hernia; totally extraperitoneal method

Correspondence: Prof. Dr. Pankaj Kumar Saha, Senior Consultant, Department of General, Laparoscopic & Bariatric Surgery, Evercare Hospital, Dhaka, Bangladesh and Former Head & Professor of Surgery, Shaheed Suhrawardy Medical College, Dhaka, Bangladesh; ORCID: https://orcid.org/0009-0004-3128-0911; Email: pksaha2@yahoo.com

Introduction

Inguinal hernia is one of the most common surgical conditions globally, and Bangladesh is no exception. With an estimated prevalence of 1 in every 4 men developing inguinal hernia at some point in life, the need for safe, effective, and patient-friendly surgical options is urgent[1]. Traditionally, open mesh repair, particularly the Lichtenstein tension-free hernioplasty, has been the gold standard in hernia management across Bangladesh. However, in recent years, laparoscopic approaches have gained significant traction, especially the Totally Extraperitoneal (TEP) repair technique[2].

As Bangladesh's healthcare system evolves, propelled by rising patient awareness, improved training, and the expansion of laparoscopic surgery facilities, the TEP method is emerging as a viable alternative. This editorial explores the promise, challenges, and necessary steps to integrate TEP more broadly into hernia surgery protocols in Bangladesh[3]. Inguinal hernia repair remains one of the most frequently performed general surgical procedures worldwide. In Bangladesh, where a large portion of the population is engaged in manual labor and has limited access to early healthcare intervention, inguinal hernias are a common clinical problem. In case of TEP , Minimal Access Surgery is more appropriate than laparoscopic surgery.

Traditionally, open hernia repair methods like Lichtenstein tension-free mesh repair have dominated surgical practice due to simplicity, cost-

effectiveness, and widespread familiarity among general surgeons[2].

However, the last decade has witnessed increasing adoption of minimally invasive techniques in Bangladesh, particularly in tertiary care centers. Among laparoscopic techniques, Totally Extraperitoneal (TEP) inguinal hernia repair has emerged as a promising approach offering several advantages over open surgery. This article highlights the Bangladesh-specific experience, outcomes, and challenges associated with TEP surgery in inguinal hernia management[4].

Understanding TEP: A Modern Surgical Approach

The TEP technique is a type of minimally invasive laparoscopic surgery used to repair inguinal hernias without entering the peritoneal cavity. Unlike the Transabdominal Preperitoneal (TAPP) method, TEP avoids intra-abdominal dissection, reducing the risk of visceral injury and post-operative complications like bowel adhesions or trocar-site hernias. The technique involves creating a working space in the preperitoneal area, followed by mesh placement to reinforce the posterior wall of the inguinal canal[5]. Selection of patients for TEP is important. Direct Inguinal Hernia is better initially than Indirect Inguinal Hernia cases initially.

Globally, the TEP method has been associated with several benefits like less post-operative pain, quicker recovery, earlier return to work, reduced infection rates, and superior cosmetic outcomes. For a densely populated and economically constrained country like Bangladesh, these advantages hold great relevance.

Ideal candidates for TEP in the Bangladeshi setting include young to middle-aged adults with unilateral or bilateral uncomplicated inguinal hernias, patients desiring quicker recovery and minimal scarring, recurrent cases after previous open mesh repair and ASA I or II category patients. Large scrotal hernias, strangulated hernias, or patients with extensive lower abdominal surgical history are typically excluded due to the complexity of the preperitoneal dissection in these cases[4].

Growing Need for Minimally Invasive Options in Bangladesh

Inguinal hernia repairs represent one of the most frequently performed operations in Bangladesh's surgical departments, especially in government hospitals, where patient loads are immense. Most patients, particularly from rural or semi-urban backgrounds, still undergo open surgeries due to cost, accessibility, and lack of awareness about laparoscopic alternatives[5].

However, the trend is slowly shifting. With the rise of private hospitals and the emergence of skilled laparoscopic surgeons trained both domestically and abroad, urban centers like Dhaka, Chattogram, and Sylhet are seeing an increase in laparoscopic hernia repairs. Among these, TEP is being increasingly favored due to its lower post-operative morbidity and faster return to daily activities—factors crucial for a labor-driven economy like Bangladesh.

In Bangladesh, laparoscopic surgeries are increasingly available in urban tertiary-level hospitals, both public and private. Institutions like Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka Medical College Hospital (DMCH), and private centers such as Evercare Hospital, Square Hospital, and Labaid have integrated TEP repair into their surgical services[6].

Despite the growth in laparoscopic infrastructure, TEP remains underutilized due to a range of systemic limitations. Most rural and district-level hospitals lack both the equipment and trained personnel to perform this advanced procedure. As a result, the majority of hernia repairs across Bangladesh are still performed using open techniques[7].

Benefits in the Bangladeshi Context

Faster Recovery and Reduced Hospital Stay: Most TEP patients can be discharged within 24 hours. In a system where hospital beds are limited and turnover is crucial, this is a major advantage.

Reduced Post-Operative Pain and Complications: TEP's minimally invasive nature means fewer nerves are disturbed, reducing chronic pain and recurrence. This is particularly important in rural patients who may delay seeking help for post-operative issues.

Cost-effective in the Long Term: While upfront costs may be higher due to laparoscopic equipment, the shorter recovery time and reduced complications translate to lower indirect costs—less absenteeism from work and fewer re-admissions.

Suitable for Bilateral and Recurrent Hernias: TEP allows simultaneous repair of bilateral hernias through the same access points, which is ideal in cases where multiple defects are found, thereby

reducing overall surgical burden. Sliding Inguinal Hernia is not suitable for TEP. Irreducible Inguinal Hernia also not for TEP procedure. Adequate dissection, size of the mesh, placement of the mesh, Fixation of Mesh, aseptic procedure and antibiotic choice is also important

Challenges in Implementation

Despite the obvious benefits, several hurdles prevent widespread adoption of the TEP method in Bangladesh:

Limited Training and Skill Availability: TEP is a technically challenging procedure with a steep learning curve. Only a handful of surgeons in Bangladesh are currently proficient in this method. Most government hospitals still lack regular laparoscopic training programs or infrastructure.

High Initial Cost and Equipment Dependency: The laparoscopic setup, including high-definition cameras, insufflators, and specialized instruments, involves significant investment. For underfunded public hospitals, this remains a barrier.

Patient Awareness and Misinformation: Many patients equate "keyhole surgery" with risk due to a lack of understanding. Public health education around minimally invasive surgery remains insufficient.

Inadequate Insurance Coverage: Bangladesh's healthcare is still largely out-of-pocket. The higher upfront cost of TEP surgery often deters low-income patients, even if it may be cost-effective in the long run.

Recommendations for the Future

To ensure the broader implementation of the TEP method in Bangladesh, a multi-pronged approach is necessary:

Incorporate TEP Training into Surgical Curricula: Residency programs and postgraduate surgical training should emphasize laparoscopic skills, particularly TEP, through simulation labs and mentorship.

Public Hospital Upgrades: The Ministry of Health should consider allocating funds specifically for laparoscopic infrastructure and staff training in tertiary-level hospitals.

Public Awareness Campaigns: Patients need to be informed about the safety and efficacy of TEP through social media, community health programs, and hospital outreach efforts.

Encourage Public-Private Collaboration: Partnerships between private hospitals and public institutions can facilitate surgeon training, equipment sharing, and research initiatives.

Introduce Subsidized Packages or Insurance Incentives: Providing financial incentives or government subsidies for laparoscopic hernia repair can drive patient interest and uptake.

Conclusion

The adoption of laparoscopic inguinal hernia repair using the TEP method represents a significant step forward in modernizing surgical care in Bangladesh. While challenges persist, the long-term benefits for patients, hospitals, and the national economy are evident. With targeted investment, education, and policy reforms, TEP can transition from being a niche procedure in urban centers to a standard of care nationwide. In doing so, Bangladesh can take a bold stride toward achieving surgical equity and excellence for all. Totally Extraperitoneal (TEP) surgery for inguinal hernia repair represents a significant advancement in hernia management, particularly in terms of patient comfort, faster recovery, and reduced complications. While Bangladesh has made promising progress in adopting this technique in urban tertiary centers, wider implementation is needed across the healthcare spectrum. Addressing training, cost, and infrastructure challenges will be key to ensuring that more patients can benefit from this modern surgical approach. With continued investment in education and technology, TEP can become a more accessible and standardized option for inguinal hernia repair in Bangladesh.

Acknowledgements
None

Conflict of Interest
There is no conflict of interest regarding the publication of this paper.

Financial Disclosure and Funding Sources
Not Applicable

Contributions to authors: Conception and design, or design of the research, the acquisition, analysis, or interpretation of data, writing—original draft, writing—review & editing were performed by PK Saha.

Data Availability
No Applicable

Ethics Approval
Not Applicable

Cite this article as: Saha PK, Roy RR, Yusuf MA. Laparoscopic Inguinal Hernia Surgery Using the Totally Extraperitoneal (TEP) Method in the Context of Bangladesh: A Promising Evolution in Surgical Practice. *J Curr Adv Med Res* 2024;11(1):56-59

ORCID
Pankaj Kumar Saha: https://orcid.org/0009-0004-3128-0911
Md. Abdullah Yusuf: https://orcid.org/0000-0002-8551-7185

Article Info
Received: 7 March 2023
Accepted: 3 April 2023
Published: 1 January 2024

References

1. Rahman AM, Alam T, Alam AHS, et al. Laparoscopic repair of inguinal hernia: Prospective evaluation at a tertiary care center. Journal of Surgical Sciences. 2019;23(2):54-58
2. Faisal MFH, Islam KS, Khan MMH, et al. Early Clinical Outcomes Following Laparoscopic Vs. Open Mesh Repair of Inguinal Hernia. KYAMC Journal. 2019;10(2):85-89
3. Momen MM, Sarker AK, Paul DP, et al. Comparison of Laparoscopic VS Open Inguinal Hernioplasty in a Tertiary Care Hospital. Journal of Enam Medical College. 2020;10(1):17-22
4. Hossain MM, Hossain SME, Hossain MD. Laparoscopic Versus Open Mesh Repair of Inguinal Hernia for Military Personnel. *Bangladesh Armed Forces Medical Journal*. 2023;56(2):17-23
5. Saha PK, Roy RR, Yusuf MA. Benefits of Minimal Invasive Surgery for Inguinal Hernia Repair in Bangladesh. Journal of Monno Medical College. 2024;10(2):107-9.
6. Roy RR, Saha PK, Yusuf MA, Saha H, Hasan MI, Saha KP, Sarker RD. Minimal Access (TEP) versus Open Inguinal Hernioplasty: A Pragmatic Randomized Control Trial. Journal of National Institute of Neurosciences Bangladesh. 2021 Jan 1;7(1):75-8.