



Case Report

# Laparoscopic TEP Inguinal Hernia Repair for Recurrent Inguinal Hernia in an Adult with History of Herniotomy Done for Congenital Inguinal Hernia in Childhood - A Rare Case Report

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## Abstract

Congenital inguinal hernias are treated during presentation in childhood, and it is uncommon to see a recurrence in this procedure especially during adulthood. For recurrent hernias of this nature, laparoscopic TEP inguinal hernia procedure proves to be an effective method to repair the hernia without having to explore the previous operative site. We find our case report to be one of the first documented case of laparoscopic TEP hernia repair done during adulthood for recurrence in pediatric inguinal hernia repair done in childhood. We provide this article as evidence to consider laparoscopic TEP inguinal hernia repair for recurrences seen in congenital inguinal hernia repairs repaired by an open herniotomy in childhood.

**Keywords:** laparoscopic TEP inguinal hernia repair, recurrent inguinal hernia, herniotomy, pediatric inguinal hernia, congenital inguinal hernia.

## Introduction

It is unusual to see recurrence in congenital inguinal hernias during adulthood. The main treatment for primary paediatric inguinal hernia (PIH) and recurrent PIH is high ligation - congenital herniotomy. It is hypothesized that recurrence after laparoscopic high ligation in adolescents would be similar to open repair (1.8%-6.3%) [1]. Lack of clarity about existing adhesions / fibrosis and paucity of literature and experience with such cases discourages the choice of laparoscopic TEP inguinal hernia repair as the treatment of choice. We were able to successfully perform a laparoscopic TEP inguinal hernia repair in a patient who presented with recurrence of congenital hernia repair as an adult. We would

like to use our case report to encourage the use of laparoscopic TEP repairs in such cases. Prior to submission a full consent was taken from the patient for the procedure and publication for academic purposes.

## Clinical Findings and Surgery

A 20-year-old male patient had presented to the surgical clinic with a left sided inguinal hernia. The hernia was painful on presentation and was occasionally irreducible. The patient had undergone a herniotomy during 2 years of age for a congenital inguinal hernia on the same side. The scar of previous surgery could be seen along with the presence of an uncomplicated reducible complete indirect inguinal hernia on the left side. No further evaluation was done apart from preliminary pre-anaesthesia fitness evaluation investigations. We proposed to proceed with the laparoscopic TEP inguinal hernia repair for this condition.

The patient had consented for conversion to open surgery or the laparoscopic TAPP method if the TEP procedure was not feasible. The challenges anticipated during the surgery were second to the surgery done in the past. We expected fibrotic changes or adhesions that may be seen mainly around the region of the deep ring. We were unaware about the level of herniotomy performed and sought to convert to the TAPP method in case the creation of pre-peritoneal space was difficult and led to the formation of peritoneal rents.

The surgery proceeded in the usual manner, and surprisingly the entire pre-peritoneal space was almost free of adhesions. We did find a single adhesion near the deep ring that was released by sharp dissection. It was not related to the peritoneum and did not cause a gas leak into the abdomen. We were able to identify and dissect the indirect inguinal hernia sac completely and after having ligated the sac, we completed the procedure by placing a mesh in the pre-peritoneal space. Patient had an uneventful recovery in the post-operative phase and continues to remain free from the hernia till date.

## Discussion

Congenital inguinal hernias (pediatric inguinal hernia - PIH) are very common in children of all ages. The incidence of PIH is approximately 3-5% in term infants and 9-11% in preterm infants [2]. The several methods used for congenital inguinal hernias - open and laparoscopic have been noted to have recurrences, but more so immediately during childhood. Recurrences are addressed with high ligation or with tissue reinforcement of internal ring. It is not advisable to place a prosthetic mesh in children [3-7]. It is but uncommon to see recurrence in such patients especially during adulthood. The reasonable explanation would be to suggest that a low herniotomy was performed allowing expansion and enlargement with age presenting like an indirect inguinal hernia.

Many methods are used to treat the hernial sac primarily. These including complete peritoneal disconnection, but not removal; hernial sac removal; and neither peritoneal disconnection nor hernial sac removal [8]. The recurrence rate is low with sac disconnection and removal surgery according to previous studies [9,10]. All recurrent inguinal hernias present with the concern of disruption of the anatomy after the primary surgery. This poses a challenge for the surgeon who considers minimally invasive surgery for the patient. A paucity of knowledge of the procedure done in past, unexpected adhesions or fibrosis and concern about dissection in the small pre-peritoneal space are few reasons that would discourage the use of laparoscopic TEP inguinal hernia. This is especially when herniotomy done during childhood would fail and would present as an indirect inguinal hernia in adulthood.

There can be various factors that would decide the feasibility of the pre-peritoneal approach. Level at which the herniotomy

was done, age at which the herniotomy was done, and the age at presentation would allow us to understand if adhesions / fibrosis would be present in the pre - peritoneal space. There needs to be a preparedness from both the surgeon and the patient side to allow for conversion of the procedure from the TEP approach to the TAPP approach in case the surgery becomes difficult, or we find the space inadequate for dissection or placing a mesh. This also allows ease in dissection and placement of an adequately large mesh to prevent the hernia recurrence once and for all.

Recurrence is a concerning area in paediatric inguinal hernia repair. Various laparoscopic repair methods are available to treat recurrent paediatric inguinal hernia. Studies analysed recurrent paediatric inguinal hernia repairs and reported the outcomes of laparoscopic inguinal hernia reoperations in such patients [11]. Laparoscopic repairs allow faster recovery and enable the placement of large mesh in the region preventing the occurrence of direct, indirect, and femoral hernias. Any recurrent inguinal hernia would indicate weakness of the abdominal muscles, a possible straining factor, or rare conditions like collagenopathies that would allow hernias to reappear at the above-mentioned sites. This makes TEP the procedure of choice allowing us to not only address the recurrent inguinal hernia, but also prevent hernia formation at other sites where possible future recurrences can be anticipated.

With our case report, we found that all the expected hurdles were negligible, and we felt confident in performing the surgery in this manner. We encourage the repair of inguinal hernia recurrences (after congenital herniotomy) with the laparoscopic TEP inguinal hernia repair procedure. Our research into literature does suggest that our case report would be one of the very few reported cases of laparoscopic TEP inguinal hernia repair done in an adult who has had a recurrence of open repair of paediatric inguinal hernia.

## Conclusion

Laparoscopic TEP inguinal hernia repair can be chosen as the procedure of choice for recurrences seen in adult patients who would have undergone a herniotomy for paediatric inguinal hernia. The additional precautions suggested would be to be prepared for conversion of the procedure from TEP to TAPP in case of unanticipated adhesions / fibrosis that may appear in the narrow pre-peritoneal space. Such preparedness can not only allow the surgeon to perform a minimal invasive surgery for the condition but also place a mesh large enough to prevent future recurrences of the hernia in the inguinal and femoral region.

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