

Repair of Bilateral Inguinal Hernia in Children with a Single Cosmetic Incision. Our Experience in Tertiary Care Center

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ABSTRACT

Aim: To evaluate the advantages/benefits of a single cosmetic incision approach for the repair of bilateral inguinal hernia in children.

Study design: A cross-sectional study

Place and Duration of study: Pediatric surgery department, Liaquat University of Medical & Health Sciences Jamshoro from February 2017 and June 2022

Methodology: Bilateral inguinal herniorrhaphies were performed on a total of 178 children and infants who received treatment in succession. A single, transverse, 2.5-cm long suprapubic incision was performed in 89 (50%) of the patients, and the Scarpa fascia was punctured using cautery. The external ring was located and opened after retracting the wound, and the ilioinguinal nerve was safeguarded. After testicular vascular and sac separation from vas deference, the hernial sac is delicately Trans ligated with 3-0 Vicryl (Ethicon), closed was the external oblique aponeurosis. The wound was then retracted to the opposite side and treated there using the same technique.

Results: Ages ranged from 3 months to 11 years at the time of operation (average, 29.8 months). 56.93% of the patients—96—were under the age of one, with 51 of them—28.65%—being under the age of six months. 48 patients were 1 to 5 years old, and 24 were over the age of 5. The average operating time was 8–10 minutes shorter than it had been in the past for children who had undergone bilateral inguinal incisions, which typically took 30–40 minutes. The visual look and overall outcomes have pleased the patients and parents. There haven't been any recurrences so yet.

Conclusion:

In order to improve therapeutic impact and lower the risk of complications and recurrence, we develop a single incision method for bilateral inguinal herniorrhaphies. Depending on the availability of a paediatric surgeon with the necessary experience and skills, a single incision technique for treating a child's bilateral inguinal hernia is practical, safe, and can be provided to patients.

Keywords: single incision approach, inguinal herniorrhaphies, children, cosmetics

INTRODUCTION

For bilateral inguinal hernia, the most common procedure performed by paediatric surgeons is inguinal herniorrhaphies.¹ The treatment involves making bilateral, transverse skin crease incisions and high ligating the sac. For males, in particular, the bilateral technique is required to maintain the structural integrity of the cords.²

The inguinal anatomy is less complex in females, making a simplified approach possible. One of the procedures that paediatric surgeons undertake the most frequently is the correction of inguinal hernias.³ Inguinal hernias are reportedly more common in those the percentage of people under 18 ranges from 0.8 to 4.4 percent. Males having a 3:1-10:1 ratio are more likely to get a hernia.⁴ Bilateral inguinal hernia is present in approximately 6% of females.⁵

This is despite the fact that there is considerable variation in the technical aspects of inguinal herniotomy performed by paediatric surgeons.⁶ The original description of juvenile hernia repairs by Ladd and Gross probably came about as a result of developing techniques, experiences, and analyses of results that suited the local community, population, or surgeon.⁷

Numerous studies comparing open repair methods with laparoscopic herniorrhaphies for paediatric hernia repair have recently been published, demonstrating both methods' benefits and drawbacks as well as their suitability for young patients.⁸ However, these findings continue to ignore the outcome of children's bilateral inguinal hernia surgery using a single incision technique.⁹

The inguinal hernia repair procedure is done by high ligation of the sac with standard two separate transverse, skin incisions,¹⁰ but we have started the single incision technique in bilateral inguinal hernia repair and got satisfactory results including

decreased duration of anesthesia and surgical time, decreased requirement of postoperative pain management, cosmetically good and early return to normal life Through a little 2.5 cm transverse suprapubic midline incision, we are proposing a novel technique for bilateral inguinal hernia repair in young female patients.

METHODOLOGY

This cross-sectional study was conducted at the Pediatric surgery department Liaquat University of Medical & Health Sciences Jamshoro from February 2017 and June 2022. An ethical review committee of the institute permitted this study. After outlining the objectives, advantages, dangers, and potential alternatives for this strategy, the parents gave their informed consent. Based on their medical histories and physical examinations, all patients had a pre-operative clinical diagnosis of bilateral inguinal hernia.

No radiologic tests were conducted to identify any hernias. A history of incarceration or strangulation did not preclude employing this method, but any hernias that were now behind bars or who had been strangled were purposefully omitted from it. The only exception is an incarcerated ovary, although this did not stop others from employing this strategy. Using this method was also not hindered by sliding hernias.

Bilateral inguinal herniorrhaphies were performed on a total of 178 children and infants who received treatment in succession. In 89 (50%) of the patients, a single, transverse, 2.5-cm long suprapubic incision was made, and the Scarpa fascia was penetrated with cautery. The external ring was located and opened after retracting the wound, and the ilioinguinal nerve was safeguarded. After testicular vascular and vas deference separation from, the hernial sac is delicately Trans ligated with 3-0 Vicryl (Ethicon). After that, the wound was retracted to the opposite side and the same method was used there.

RESULTS

Ages ranged from 3 months to 11 years at the time of operation (average, 29.8 months). A total of 56.93% of the patients—96—were under the age of one, with 51 of them—28.65%—being under the age of six months. 48 patients were 1 to 5 years old, and 24 were over the age of 5. The average operating time was 8–10 minutes shorter than it had been in the past for children who had undergone bilateral inguinal incisions, which typically took 30–40 minutes. The visual look and overall outcomes have pleased the parents and patients. There haven't been any recurrences so yet. SPSS statistics version 22.0 was used for data analysis.



Figure 1: demonstrates the transverse supra pubic incision



Figure 2: demonstrates the incision site at follow-up

Table 1: Characteristics of the operated children n=178

Gender	number	percentage
Male	128	71.91
Female	50	28.08
Age group		
< 6 months	51	28.65
6-12 months	45	25.28
1– 5 years	58	32.58
>5 years	24	13.48

DISCUSSION

To our knowledge, only a few studies used the concept of using the bilateral inguinal hernia with a single transverse suprapubic incision in the literature on paediatric surgery. Since the structure of the inguinal canal undergoes a number of modifications from infancy to adulthood that favour a single transverse suprapubic incision, we feel newborn hernia repairs are particularly well suited to this method. In our study, a total of 178 children underwent bilateral inguinal herniorrhaphies. The age range at the time of surgery was 3 months to 11 years (average, 29.8 months). Ninety-six patients (53.93%) were under 1 year of age, 51 of whom

(28.65%) were under 6 months of age. Fifty-eight patients were 1 to 5 years of age, and 24 were older than 5 years. A similar study describe the results of this procedure on 99 girls aged 12 or younger who experienced no recurrences, minor problems, and a superb, dependable median follow-up of 5 years.¹¹

In our study 128 (71.91%) were male and 50 (28.08%) were female children. A different study was done on only female children. Male inguinal hernias should not be treated with this method, the author advises, as it would be more difficult and likely lead to complications that may have been avoided.¹²

Our study revealed that the parents were happy with the overall results and cosmetic attractiveness. There haven't been any recurrences so yet. In a comparable study, this procedure was done in both male and female children. Clinical data survey and follow-up revealed that, in comparison to patients who underwent laparoscopic bilateral inguinal herniorrhaphy (LBIH), those who received this treatment had an equally low recurrence rate, minimal issues, and good cosmetic results.¹³

In contrast to earlier studies in which children had bilateral inguinal incisions within an average of 30–40 minutes, the average operating time in our study was 8–10 minutes shorter. The surgical outcomes of patients receiving Single Incision Laparoscopic Surgery (SILS) versus multiple Incision Laparoscopic Surgery (MILS) for inguinal hernia repair were compared in 15 comparative studies on 1651 individuals. Following the SILS technique as opposed to the MILS treatment, the post-operative recovery time was substantially quicker [odds ratio, -0.35 (CI, -0.57 - 0.14), p = 0.001]. However, statistical parity between the two approaches was observed in the outcomes of length of hospital stay, operating time for unilateral and bilateral hernias, postoperative pain score, one-week pain score, hernia recurrence [odds ratio, 1.24 (CI, 0.47 - 3.23), p = 0.66], conversion [odds ratio, 1.07 (CI, 0.37 - 3.12), and postoperative complications [odds ratio, 0.95 (CI 0.66 – 1.36 p = 0.78)].¹⁴

CONCLUSION

In order to improve therapeutic impact and lower the risk of complications and recurrence, we develop a single incision method for bilateral inguinal herniorrhaphies. Depending on the availability of a paediatric surgeon with the necessary experience and skills, a single incision technique for treating a child's bilateral inguinal hernia is practical, safe, and can be provided to patients.

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