

Research Paper



A cross-sectional study to detect the findings of hernial repair procedure in iraqi children

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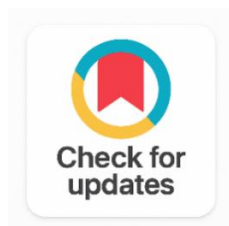
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ABSTRACT

Background: One of the most prevalent conditions in children and young adults is an inguinal hernia. For full-term and preterm newborns, the estimated prevalence rates of inguinal hernia are 1-5% and 9-11%, correspondingly. Aim: This paper aims to analyse a cross-sectional study to detect the findings of hernial repair procedure in Iraqi children. Patients and methods: This paper was conducted in different hospitals in Iraq from 15th September 2021 to 17th December 2021 as a cross-sectional study to analyse cross-sectional study to detect the findings of hernia in Iraqi children. This study was contained 54 patients, which separate into two kinds of groups. Where the first group have included 27 patients who conduct open surgery, while the second group have 27 patients where present patients who did laparoscopic surgery. The databases collected were analysed and plotted by the SPSS program. Results and Discussion: In this study, we examine the results of two techniques for hernia repair in young girls and boys. The results showed that although laparoscopic surgery and open surgery had differently post-operative problems, open surgery required less time to complete an inguinal hernia repair in patients than laparoscopic surgery did. Conclusion: The results of our investigation generally showed that, despite the near proximity of the two repair procedures' preoperative and postoperative complications. However, herniotomy opening surgery took somewhat less time to complete than laparoscopic surgery when safety for hernia repair in children under the age of six was considered.

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1. INTRODUCTION

One of the most prevalent conditions in children and young adults is an inguinal hernia. For full-term and preterm newborns, the estimated prevalence rates of inguinal hernia are 1-5% and 9-11%, correspondingly. The most frequent elective surgical technique for children with inguinal hernias is inguinal hernia repair as well as herniotomy [1], [2], [3]. Inguinal herniorrhaphy with pediatric surgeons has been performed with more variability, according to prior investigations. Significant variation has been seen in this regard. Two approaches are often used by surgeons among the many described ways of repair. The Gross and Ferguson approach is one of these techniques, while the Mitchell-Bank technique is the other [4], [5], [6], [7].

The fascia of the external oblique muscle as well as the external ring, are cut in Gross and Ferguson's approach. As a result, the surgeon may appropriately explore for high ligation of the sac within the inner ring using this approach. Opening the outer, oblique muscle, however, may lead to certain side effects, including postoperative discomfort, edema, and hematoma, as well as nerve and artery damage during surgery [8], [9], [10], [11], [12].

The Mitchell-Bank method, which was initially introduced in 1882, performs herniotomies without cutting the external oblique muscle or the external ring, causing the least amount of tissue damage possible. Although it is advised against using this approach on infants under the age of one, its viability and safety have also been examined in children between the ages of one and eleven. The findings demonstrated that, in comparison to the Ferguson approach, the rate of recurrence was not substantially different [13], [14].

Few research compared the repair of inguinal hernias with or without an external oblique muscle, and the papers that are available usually use a retrospective methodology. Many studies have evaluated various tissue restoration procedures. Most pediatric surgeons have a propensity for opening the inguinal canal in young patients. However, there is data suggesting that a herniotomy without opening the external oblique fascia also has some benefits [15], [16]. Therefore, comparing the techniques might be useful for surgeons in deciding which herniotomy technique is best for children. We thus sought to evaluate the early and late complications associated with two inguinal repair approaches with and without opening the external oblique muscle fascia, considering that complications and result of each way is one factor of the selection of the suitable surgical strategy in this respect [17], [18], [19], [20]. This paper aims to analyse a cross-sectional study to detect the findings of hernia in Iraqi children.

2. METHODOLOGY

This paper was conducted in different hospitals in Iraq from 15th September 2021 to 17th December 2021 as a cross-sectional study to analyse cross-sectional study to detect the findings of hernia in Iraqi children. This study was contained 54 patients, which separate into two kinds of groups. Where the first group have included 27 patients who conduct open surgery, while the second group have 27 patients where present patients who did laparoscopic surgery. The databases collected were analysed and plotted by the SPSS program. To follow up of outcomes methodology building, this study was had a database examination of clinical and demographic characteristics with hernia patients of ages under six years, which can be seen in Table 1. Furthermore, this study was determined into clinical and demographic characteristics of symptoms with hernia patients that include Pain of the lower belly, swelling near the groin, unexplained crying or fussiness, and visible bulge where these parameters can be defined in Table 2 as well as this study was also determined into Clinical and demographic characteristics of causes with hernia patients, which define into abnormalities of the genitourinary system, Cystic fibrosis, developmental dysplasia of the hip, Genetic factor, prematurity, and undescended testes where the outcomes have been expressed in Table 3. To further of results, this study was presented with preoperative complications for hernia patients, which

are defined within Fever, Scrotal edema, Scrotal hematoma, and Wound infection, where these results can be found in

Table 4. In addition, this paper was determined into side repairs of hernia for hernia patients in comparison between Open surgery and laparoscopic surgery, which can be found in **Figure 1**. In **Figure 2**, this study was focused on the Comparison between Open surgery and laparoscopic into post-operative complications, which Fever, Scrotal edema, Scrotal hematoma, Wound infection, Recurrence, and Testis atrophy where these factors can be shown in **Figure 2**. Finally, our study was presented Side effect factors of hernia patients, which include Infection, Bleeding at the incision site, Problems with urinating, and Seroma, where these outcomes can be defined in **Table 5**.

3. RESULTS AND DISCUSSION

Table 1. Databases Examination of Clinical and Demographic Characteristics with Hernia Patients

N	V	54
	M	0
M		3.5000
SEM		.23459
Me		3.5000
Mo		1.00 ^a
SD		1.72386
Var		2.972
Sk		.000
SES		.325
Ra		5.00
Min		1.00
Max		6.00
S		189.00

Table 2. Clinical, Demographic Characteristics of Symptoms with Hernia Patients

		F, 54	P (%)	VP (%)	CP (%)
V	Pain of the lower belly	25	46.3	46.3	46.3
	Swelling near the groin	9	16.7	16.7	63.0
	Unexplained crying or fussiness.	7	13.0	13.0	75.9
	Visible bulge	13	24.1	24.1	100.0
	T	54	100.0	100.0	

Table 3. Clinical, Demographic Characteristics of Causes with Hernia Patients

		F, 54	P (%)	VP (%)	CP (%)
V	abnormalities of the genitourinary system	10	18.5	18.5	18.5
	Cystic fibrosis	12	22.2	22.2	40.7
	developmental dysplasia of the hip	6	11.1	11.1	51.9
	Genetic factor	10	18.5	18.5	70.4
	prematurity	6	11.1	11.1	81.5
	undescended testes	10	18.5	18.5	100.0
	T	54	100.0	100.0	

Table 4. Postoperative Complications of Hernia Patients

		F, 54	P (%)	VP (%)	CP (%)
V	Fever	8	14.8	14.8	14.8
	Scrotal edema	10	18.5	18.5	33.3

	Scrotal hematoma	15	27.8	27.8	61.1
	Wound infection	21	38.9	38.9	100.0
	T	54	100.0	100.0	

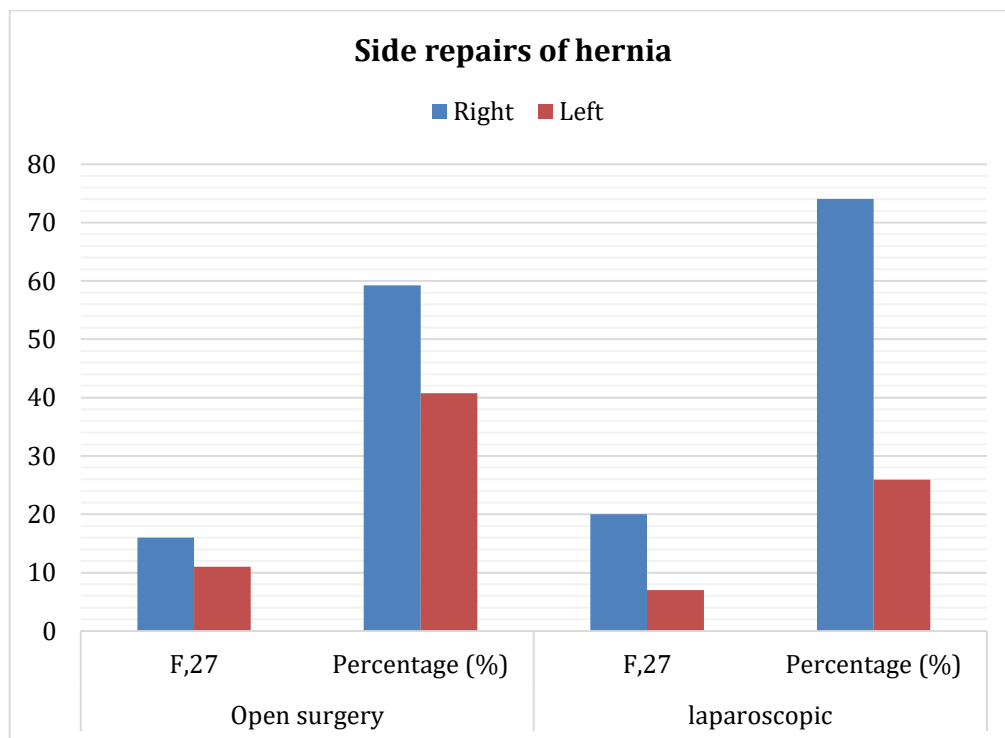


Figure 1. Determination into Side Repairs of Hernia for Hernia Patients

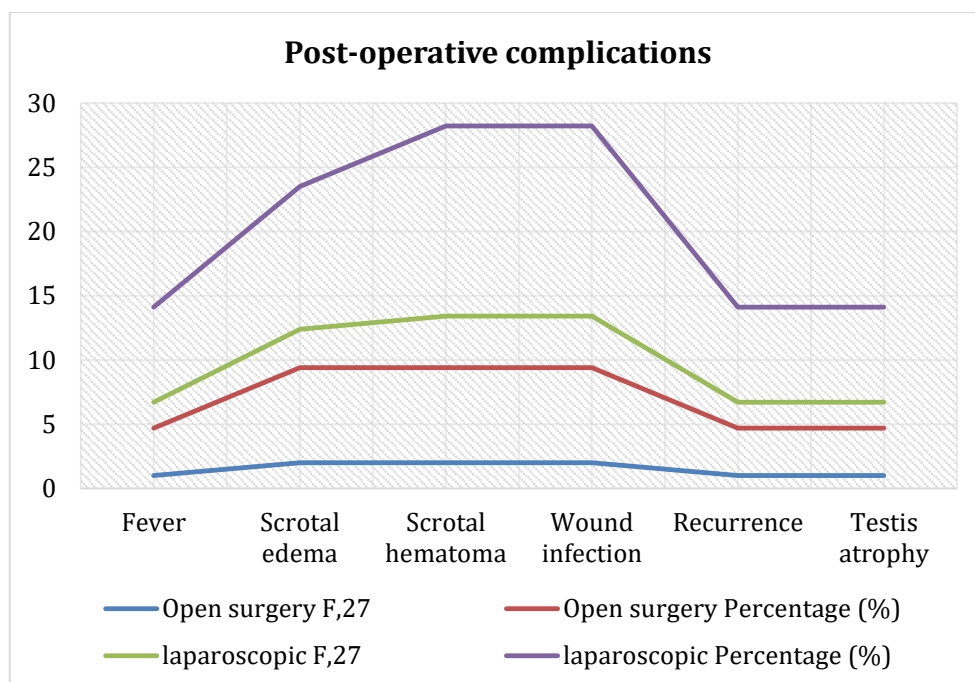


Figure 2. Comparison between Open Surgery and Laparoscopic Into Post-Operative Complications

Table 5. Post-Operative Outcomes of Hernia Patients

Parameters	Open Surgery, 27	Laparoscopic Surgery, 27	P-Value
Sex			
Males	23 (85.19%)	20 (74.07%)	0.0337

Females	4 (14.81%)	7 (25.93%)	0.0453
Discharge			
<15 hrs	24 (88.89%)	21 (77.78%)	0.0354
10 – 21 hrs	3 (11.11%)	6 (22.22%)	0.0326
Recovery			
< 4 hrs	25 (92.59%)	18 (66.67%)	0.0216
>hrs	2 (7.41%)	9 (33.33%)	0.0237
Operation Time (min)	24.56±4.22	90±4.94	0.00261

Discussion

Children frequently get inguinal hernias, and the standard therapy for this condition is herniotomy, against which all other treatment options are measured. It is praised for being simple to carry out, successful most of the time, and prone to minor difficulties. [21] In this study, we examine the results of two techniques for hernia repair in young girls and boys. The results showed that although laparoscopic surgery and open surgery had differently post-operative problems, open surgery required less time to complete an inguinal hernia repair in patients than laparoscopic surgery did. Although using modern, minimally invasive surgical techniques like laparoscopes has recently improved the surgical repair for inguinal hernias, it appears to be that ligation to the hernia sac (process vaginalis) is still the go-to surgical procedure for inguinal hernia repair. The Ladd and Gross treatment and the Mitchell-Banks procedure are the two hernia repair methods most frequently employed by pediatric surgeons. Furthermore, according to Ravi and Hamer [22], who interviewed 264 doctors, pediatric surgeons use a variety of herniotomy techniques; there is no accepted approach for doing inguinal hernia operations in young patients. It is believed that a variety of criteria, such as the frequency of various complications, the length of the treatment, and cost-effectiveness, may have an impact on the choice of surgeons in this respect. However, there are still disagreements on how to adopt the best strategy. The reason given by surgeons who favoured the Mitchell-Banks approach is that it has a low recurrence rate since it involves opening the inguinal canal, which results in a high level of sac ligation and might prevent hernia recurrence. The incidence of pre-operative and post-operative problems varied across the two research groups in our study. The findings of our investigation were consistent with those that Turk in Turkey reported [23]. In 4520 cases of inguinal hernia repairs in boys older than two years old, they compare the rates of recurrence and complications associated with Ferguson hernioplasty with Mitchell Banks' approach retrospectively. They reported overall complication rates for the Mitchell Banks method and the Ferguson hernioplasty of 2.3% and 2.9%, respectively. In their two research groups, the rates of early and late problems were statistically different. In compared to previous studies, our study shown different results, which find the success of open surgery in comparing with laparoscopic surgery where the post-operative complications of open surgery were lower with laparoscopic surgery. Also the operation time of open surgery is partly lesser in comparison with laparoscopic surgery.

4. CONCLUSION

The results of our investigation generally showed that, despite the near proximity of the two repair procedures' preoperative and postoperative complications. However, herniotomy opening surgery took somewhat less time to complete than laparoscopic surgery when safety for hernia repair in children under the age of six was considered.

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Authors Contributions Statement

Name of Author	C	M	So	Va	Fo	I	R	D	O	E	Vi	Su	P	Fu
Dr. Ali Abdulhussein Sabri Al Edani	✓	✓	✓		✓	✓		✓	✓	✓	✓		✓	✓
Dr. Adil Abdulmajeed Hassan	✓	✓		✓			✓		✓	✓		✓	✓	
Dr. Waleed Khalid Ahmed Al-Jumaili	✓	✓		✓			✓		✓	✓		✓	✓	

C : Conceptualization

M : Methodology

So : Software

Va : Validation

Fo : Formal analysis

I : Investigation

R : Resources

D : Data Curation

O : Writing - Original Draft

E : Writing - Review & Editing

Vi : Visualization

Su : Supervision

P : Project administration

Fu : Funding acquisition

Conflict of Interest Statement

The authors declare that there are no conflicts of interest regarding the publication of this paper.

Informed Consent

All participants were informed about the purpose of the study, and their voluntary consent was obtained prior to data collection.

Ethical Approval

The study was conducted in compliance with the ethical principles outlined in the Declaration of Helsinki and approved by the relevant institutional authorities.

Data Availability

The data that support the findings of this study are available from the corresponding author upon reasonable request.


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