

Herniotomy in Infants, Children and Adolescents without Disruption of External Ring

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Abstract

Inguinal hernia is one of the commonest pediatric surgical problems and when treated early and appropriately is associated with negligible morbidity and very rarely any mortality. In our prospective study we introduce a new method for repair of hernia in infants, children and adolescences without disruption of external ring. Our study involves 252 patients with inguinal hernia, the ages ranging from 7 days to 15 years, 8 female and the remaining male. We apply the principles of minimal access surgery but without laparoscope that's to say the smallest incision, a short stay in hospital, a rapid recovery, the least cost and fewer complications with no recurrence. So we can say that it is nonlaparoscope minimal access surgery.

Keywords: Herniotomy, hernia repair in children.

INTRODUCTION

Inguinal hernia is a common finding in infants and children and represents the condition most frequently requiring surgical repair in the pediatric age group.¹ The incidence of inguinal hernia ranges from 1 to 4.4% and is higher in infants, commensurate with the higher rate of patent processus vaginalis.² Boys are six times more affected than girls. Hernias can be life-threatening or can result in the loss of a testis, an ovary or a portion of the bowel if incarceration, strangulation or operative complications occur. For these complications to be avoided, timely diagnosis and operative technique are important.³

The risk of incarceration of inguinal hernia is higher in the neonatal period and early infancy and is easily prevented by early diagnosis and treatment.^{4,5} Inguinal hernia results from a hole or defect in the muscles where the peritoneum protrudes from the sac⁶ or is due to a congenital patent processus vaginalis.⁷ No disease belonging to the province of surgeons needs accurate anatomical knowledge and good surgical skill more than hernia in all its varieties.⁸ Early reduction of the hernia followed by elective herniotomy is the standard treatment if there is incarceration. Emergency surgical intervention is, however, required in case of suspected or established strangulation. A very rare complication of incarcerated inguinal hernia in infancy is the development of spontaneous bowel necrosis with enteroscrotal cutaneous fistula.⁹⁻¹²

METHOD

From June 2005 till March 2007, 252 patients with inguinal hernia were collected in Baquba general hospital-Diayla-Iraq and managed surgically with nonlaparoscopic minimum access surgery. These cases were followed up for one year for detection of recurrence rate. The sex and age distribution of these cases are illustrated in Table 1. From the total number, two cases only were recurrent hernia and the remaining 250 cases were primary hernia. These cases were classified into two groups; group A which included patients below 6 years while group B included patients above 6 years.

In the present prospective study we applied the principle of minimum access surgery but without a laparoscope. Our surgery in group A included the approach the cord after it passed the external ring, and depending on the short inguinal canal and the superimposing of superficial to deep ring and with slight traction of the cord we can reach the maximal point of the sac's neck and expose the extraperitoneal fat without disturbing the inguinal canal and its content. The advantage of this which we did as a small incision not exceeding 1 cm, is that we did our surgery via minimal access, keeping the inguinal canal untouched so any recurrence in adulthood can be dealt with as a primary hernia.

In group B who are also not needing repair neither tension or tension free so here we can reach the sac from above, because now the inguinal canal is developed or started to develop and applying minimum access we reach the sac just were above the deep ring (one inch above the midpoint of the line between the pubic symphysis and interior superior iliac supine). The incision does not exceed 2-3 cm, then we pick-up the cord just before it

Table 1: Age distribution

	Age groups	Male	Female	Total number
Group A	Below 1 year	76	4	80
	1-3 years	70	2	72
	3-6 years	56	2	58
Group B	6-15 years	42	–	42
	Sum	244	8	252

enters the deep ring and because no need for repair we avoid unnecessary disruption of the external ring and unnecessary exploration of the lower part of the canal.

RESULTS AND DISCUSSION

Both groups, A and B tolerated the surgery very well with no need for strong analgesia postoperatively such as opiate, paracetamol syrup or tablets being simple and we did not give any antibiotics with no incidence of wound infection. The only complication was scrotal edema in about 50% of group A which resolved spontaneously within a few days.

The incidence of hernia in different age groups was illustrated in Figure 1 which clearly shows a higher incidence in children less than 6 years (group A).

One year follow-up shows no recurrence and the wound in group A after 3 weeks cannot be found easily as there is little scarring. The patients in both groups were dealt with as day case surgery and discharged after a few hours with no significant complications.

The surgical technique used in the present study was illustrated in Figures 2A to E. In this study I tried to show that minimal invasive technique is also minimal access surgery although it is nonlaparoscopic. I am not doing a comparative study between open and laparoscopic technique but trying to choose the safest, cheapest, and lowest recurrence technique. So we can use our experience and skill to decrease the cost firstly by depending for the diagnosis on a full history and physical examination without the need for other investigations such as ultrasound, which might mislead us although some studies show that ultrasound in experienced hands, may give an accuracy rate up to 96%.¹³ We decrease the cost and the time of operation by doing our surgery without laparoscope. The study also shows zero negative exploration in comparison

with laparoscopy which shows in more than 1% of patients no hernial opening is found.¹⁴ Regarding recurrence rate, this still ranges from 0.4 to 4.8% in laparoscopic hernia in pediatrics¹⁵ while in our study there was no recurrence. Also in laparoscopy, there is a chance of abdominal visceral injury especially to the bladder,¹⁶ complications with CO₂ and technical difficulties especially in the early age group.

But still recurrent hernia in the pediatric age group is very difficult doing an interior (open) approach and there is a high risk of damaging the vas deferens and testicular vessels during dissection of a previously opened hernia, so laparoscopic repair^{17,18} is the preferred operation for recurrent inguinal hernia in children after an open repair. Also a laparoscopic approach can show both deep rings and in one study they found that 26% of boys presented with unilateral inguinal hernia. They had also wide open contralateral deep ring and 11% of female also.¹⁹

So the optimal treatment of inguinal hernia has been controversial for decades since the advent of minimally invasive surgery laparoscopic techniques have added to the controversy. We can say that our method is not superior to any other method but we did the best for our patients with fewer facilities in a very bad security state and in between gushes of emergencies due to explosion, bombs and road traffic accidents. Finally we did this number of cold cases with great care and delicate dealing with patients and tissues.

CONCLUSION

Laparoscopic inguinal hernia repair in children is not the most superior minimal invasive technique. Open surgery can be done in a less invasive manner with less cost, fewer complications, maintaining the tactile sensation of a surgeon with most delicate and pleasurable surgery.

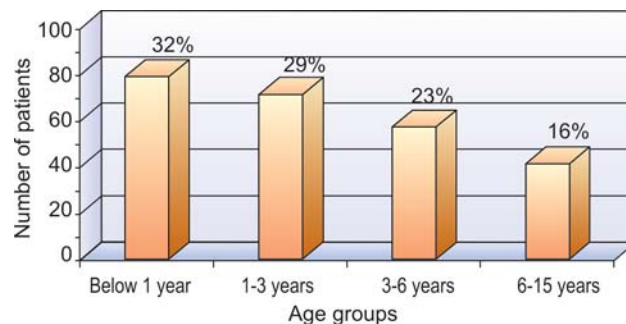
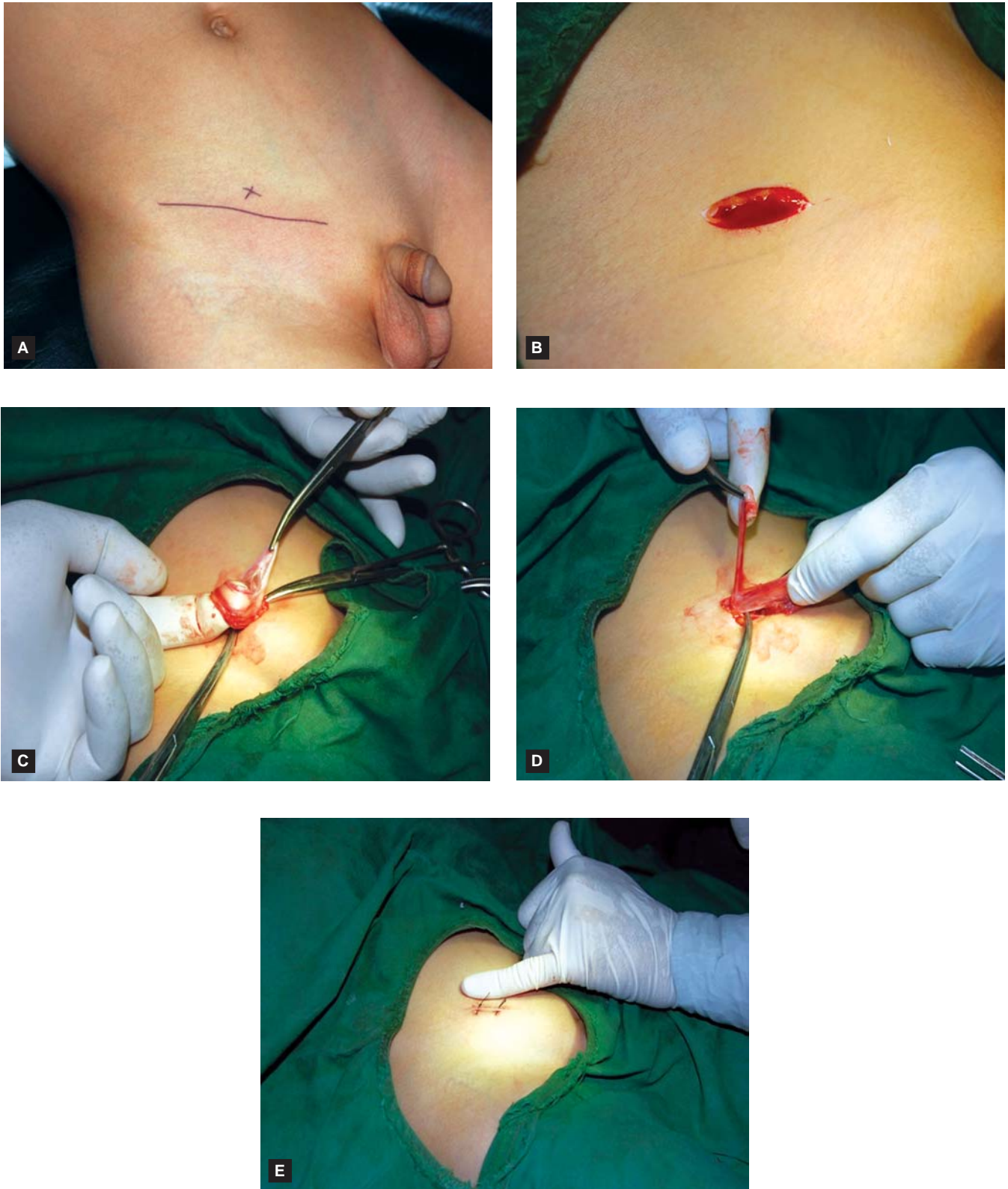


Fig. 1: Incidence of inguinal hernia in infants, child and adolescence



Figs 2A to E: Photos illustrating the surgical technique used (A) The site of incision (B) The skin incision (C) Delivery of the cord with separation of the sac (D) Separation of the sac (E) Closure of the wound

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