Results

This study is a Prospective, randomized, comparative study. It is held at Benha University Hospital on 50 children who were attendant to outpatient surgery clinic with 60 inguinal hernias diagnosed clinically, both males and females are included; 36 males and 14 females, between June 2009 and Feb 2010.

All patients included in this study were 50 patients; 36 males (72%), and 14 females (28%). Right-sided IH was present in 26 patients (52%); (19 males + 7 females), left-sided IH was present in 14 patients (28%); (10 males + 4 females), and bilateral presentation was in 10 patients (20%) ;(6 males + 4 females).

Table (b-1): **Clinical presentation of cases.**

	Males	**Females**	**Total**
Right	19 (38%)	7 (14%)	26 (52%)
Left	10 (20%)	2 (4%)	12 (24%)
Bilateral	8 (16%)	4 (8%)	12 (24%)
Total	37 (74%)	13 (26%)	50 (100%)

Seventy eight percent of patients (39 patients) falling in the age zone from 1-5 years, while only 8% (4 patients) are younger than 1 year, and 14% (7 patients) are older than 5 years. The oldest child was 69 months, the youngest was 8 months, and the average age is 36.56 months (fig b-15).

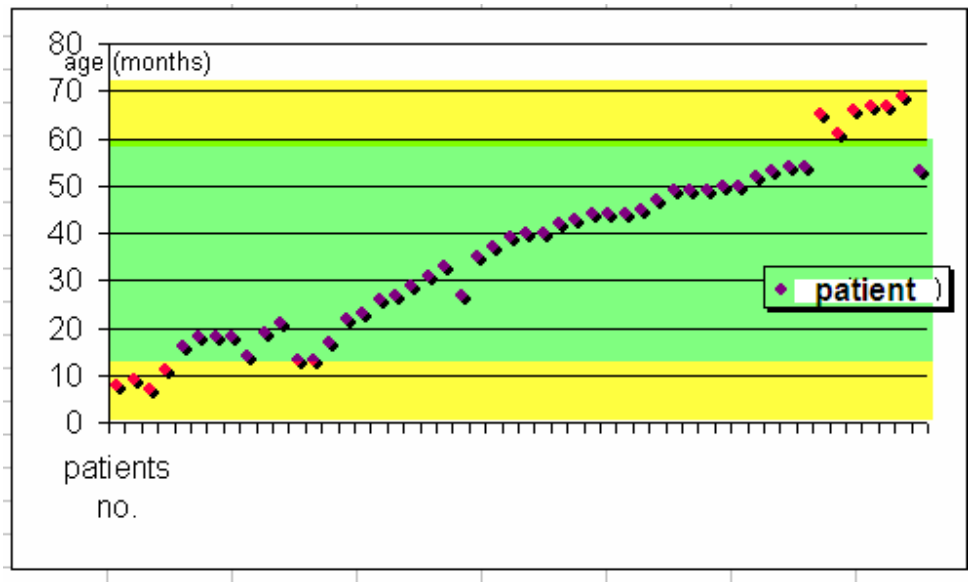

Fig. (b-15): **Age group for patients involved in study; 78% of patients falling in the zone of 1-5 years "green zone".**

Table (b-2): **Surgical approaches to cases.**

	Open (A)		Laparoscopic (B)		Total	
	Male	Female	Male	Female	Male	Female
Right	9 (18%)	3 (6%)	10 (20%)	4 (8%)	19 (38%)	7 (14%)
Left	5 10%	1 (2%)	5 (10 %)	1 (2%)	10 (20 %)	2 (4%)
Bilateral	4 (8 %)	3 (6%)	4 (8%)	1 (2 %)	8 (16 %)	4 (8%)
Total	18 (36%)	7 (14%)	19 (38 %)	6 (12%)	37 (74%)	13 (26%)

All patients in group (A) passed smooth intraoperative course without complications. Eighteen patients were presented with unilateral hernia; 12 right and 6 left inguinal hernias. Seven patients were presented by bilateral

inguinal hernia; 4 males and 3 females (Table b-2). Contralateral exploration was not done in all patients of this group.

Group (B) patients, 25 patients, were subjected to laparoscopic needle assisted technique. Left-sided IH was present in 6 cases (24%), bilateral hernia in 5 cases (20%) (Table b-2). Routine contralateral exploration of other internal inguinal ring is done for all cases with unilateral presentation in this group. This contralateral exploration revealed patency of processus vaginalis in five patients who were primarily presented with unilateral inguinal hernia. So; the final scheme of patients in this group is 10 patients out of 25 cases (40%) with bilateral inguinal hernia and 15 patients (60%) unilateral hernia.

Mean operative time in group (A) was 31.7±4.5 ;(23-39) minutes for unilateral cases and was 44.2±4.5; (30-45) minutes for bilateral cases. The mean duration of surgery in group (B) was 22.5 ± 2.8 min (range 19-26 min) for unilateral and 31.5 ± 3.5 min (range 23–37 min) for bilateral hernia repair (Table b-3a).

		Open (A)	**PCT (B)**
Duration (min)	Unilateral	31.7±4.5	22.5 ± 2.8
	Bilateral	44.2±4.5	31.5 ± 3.5

Table (b-3$_a$): **Operative data for both groups.**

All patients in group (A) showed no intraoperative or immediate postoperative complications, while in group (B) Only one patient (4%)

showed difficulty in the form of hematoma on needle manipulations blurring the vision of operative field. This hematoma is controlled by direct external pressure on abdominal wall (Table b-3_b).

	Open (A)	**PCT (B)**
operative difficulties	None	Hematoma (4%)

***Table (b-3_b):* Operative data for both groups.**

All patients in both groups showed mild to moderate pain sensation that responded to non-steroidal anti-inflammatory drugs Diclophenac Potassium suppository.

Mean postoperative hospital stay for patients in group (A) was 4.3±1.5; range: 2-8 hours. The majority of patients (78%) allowed going home within the range of 3 to 6 hours, 8 patients (22%) went home earlier than 3 hours. While the mean hospital stay in group (B) was 4.79 ± 2.28 h (range 3–7 h) (Table b-3_c).

	Open (A)	**PCT (B)**
Mean hospital stay	4.5 ± 2 h	4.79 ± 2.28 h

***Table (b-3_c):* Operative data for both groups.**

In group (A), the follow up examination, early postoperative complications in the form of wound sepsis in one patient (4%), testicular edema in two patients (8%). While examination for delayed complications showed no evidence of recurrence or even contralateral hernia appearance. No cases of testicular atrophy were reported. No hydrocele developed. The scars were accepted except only one patient showed widened scar.

In group (B), the follow up examination, (Table b-4); early postoperative complications; no wound sepsis or testicular edema. While examination for delayed complications showed no evidence of contralateral hernia appearance. No cases of testicular atrophy were reported. No hydrocele developed. The scars were accepted, at the 1-year follow-up, there was practically no visible scars.

Only one case (4%) of group (B), after 3 months presented with recurrent inguinal hernia which was re-operated but through ordinary open approach. Intraopoerative finding of this case was faulty application of previous purse-string stitch into superficial plane rather than the perfect plane involving peritoneum.

Also in group (B), 2 patients (8%) showing stitch discomfort; one patient complained just from stitching pain while the other case developed stitch sinus which improved on conservative treatment.

Timing	Complication	Group (A)		Group (B)	
		No.	(%)	No.	(%)
Early Complications	Wound sepsis	1	(4)	0	(0)
	Testicular edema	2	(8)	0	(0)
Late Complications	Recurrence	0	(0)	1	(4)
	Contralateral hernia	0	(0)	0	(0)
	Testicular atrophy	0	(0)	0	(0)
	Hydrocele	0	(0)	0	(0)
	Scar complicated	1	(4)	0	(0)
	Stitch discomfort	0	(0)	2	(8)

Table (b-4): post operative follow up data.