

Comparative Study of Laparoscopic And open Inguinal Hernia Repair In Government Rajaji Hospital, Madurai – a prospective study

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Aim: To compare the effectiveness of open inguinal hernia repair (Lichtenstein) in comparison with the laparoscopic inguinal hernia repair (TEP & TAPP) in our setup.

Objectives:

To compare

- The duration of surgery
- Intra operative complication
- Bowel Injury, Vascular Injury, Conversion to Open
- Postoperative complication
- Post operative pain, Haematoma, Seroma, Testicular Atrophy
- Duration of hospital Stay

Of Laparoscopic inguinal hernia repair (TEP & TAPP) with Open inguinal hernia repair (Lichtenstein).

Materials And Methods: Study carried out in Department of General Surgery, Government Rajaji Hospital, Madurai from February 2015 to August 2015 on 50 patients of Symptomatic Inguinal Hernia. Patients divided into two groups. Group A patients containing 25 patients undergoing Laparoscopic Inguinal Hernia Repair and Group B containing 25 patients undergoing Open Inguinal Hernia Repair. This is a Prospective Study conducted for period of 7 months.

Keywords: Inguinal Hernia, Laparoscopic Approach, Pre peritoneal Approach, Open Approach, Seroma, Haematoma.

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Table-1

Age Distribution

Age in years	Lap	Open
< 40	13	7
41 - 50	10	15
51 - 60	2	3
Total	25	25
Mean+ SD	40.24+ 7.68	43.76+ 5.84
P value	0.074 Not Significant	

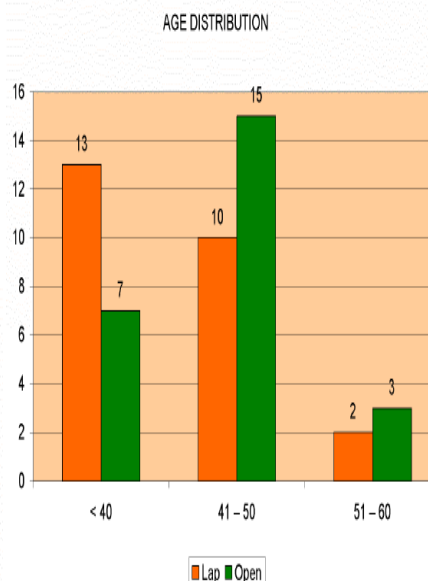


Table – 2

Sex Distribution

Sex	Lap	Open
Male	24	23
Female	1	2
Total	25	25
P value	0.973 Not significant	

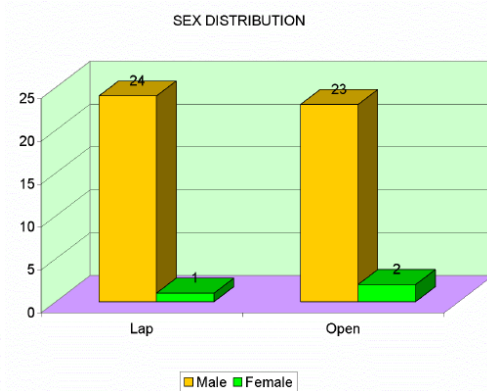


Table – 3

Duration of procedure

Duration in mts	Lap	Open
40 – 50	1	14
51 – 60	1	4
> 60	23	7
Total	25	25
Mean + SD	69.72+7.35	55.32 +11.10
P value	< 0.001 Significant	

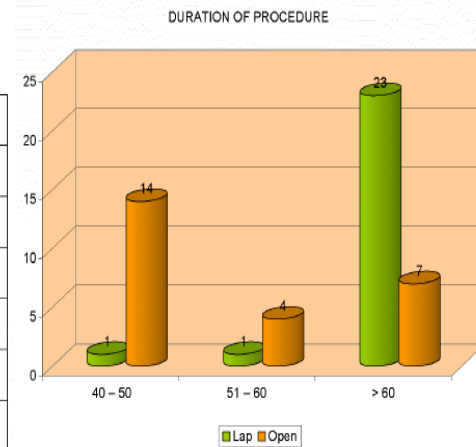


Table – 4

Side

Side	Lap	Open
Left	6	8
Right	17	15
B/L	1	1
LT/R, Rt/R	1	1
Total	25	25

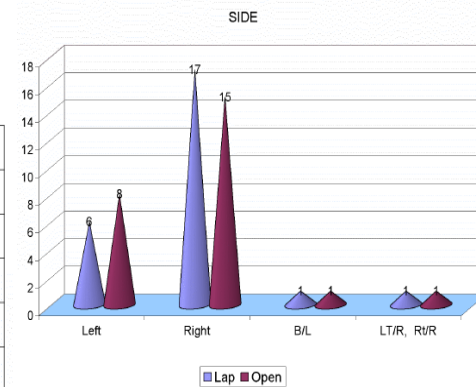


Table – 5

Acute Pain

Pain score	Lap	Open
0	4	0
2	16	0
4	5	2
6	0	4
8	0	19
Total	25	25
Mean + SD	2.08 + 1.22	7.36 + 1.25
P value	< 0.001 Significant	

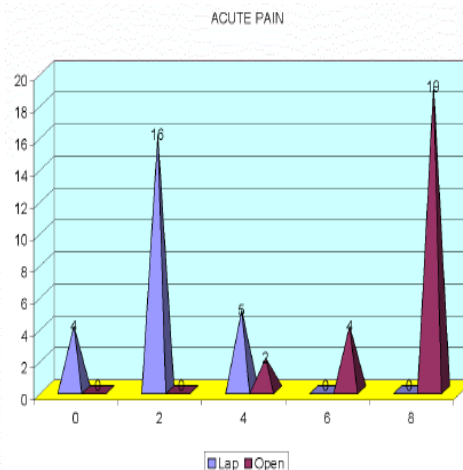


Table – 6

Chronic Pain

Chronic pain	Lap	Open
Yes	0	4
No	25	21
P value	0.159 Not significant	

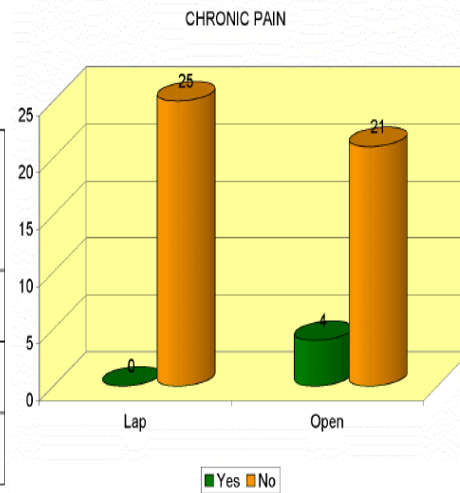


Table – 7

Peroperative complications

Peroperative complications	Lap	Open
Yes	7	0
No	18	25
P value	0.037 significant	

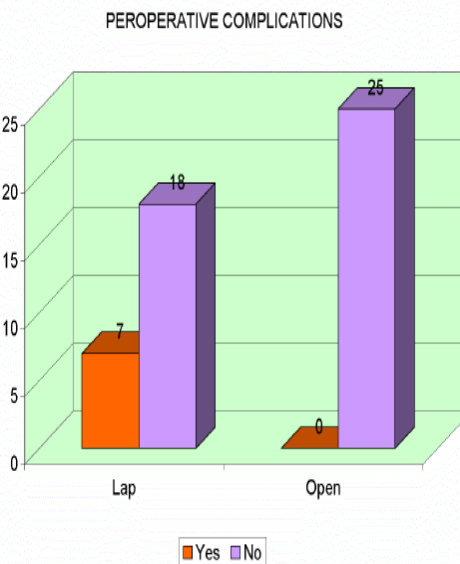


Table – 8

Post operative Hematoma

Post operative complications	Lap	Open
Yes	1	4
No	24	21
P value	0.417 Not significant	

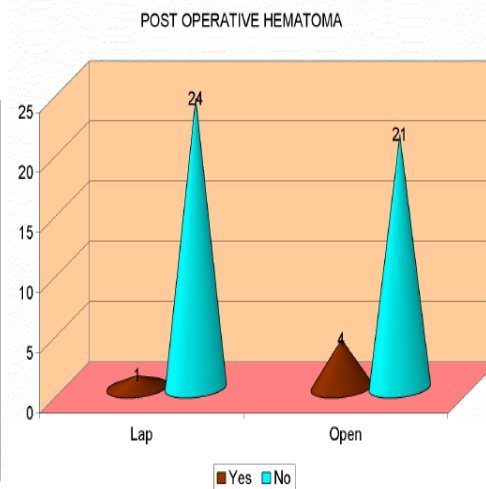


Table - 9

Post operative Seroma

Post operative Seroma	Lap	Open
Yes	9	1
No	16	24
P value	0.048 Significant	

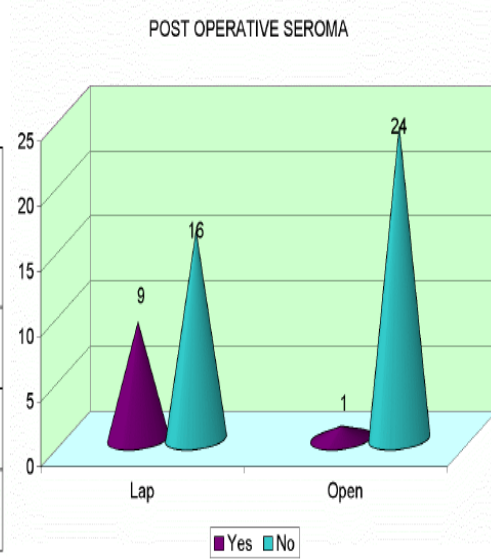


Table - 10

Testicular atrophy

Testicular atrophy	Lap	Open
Yes	0	0
No	25	25
P value	1.0 Not significant	

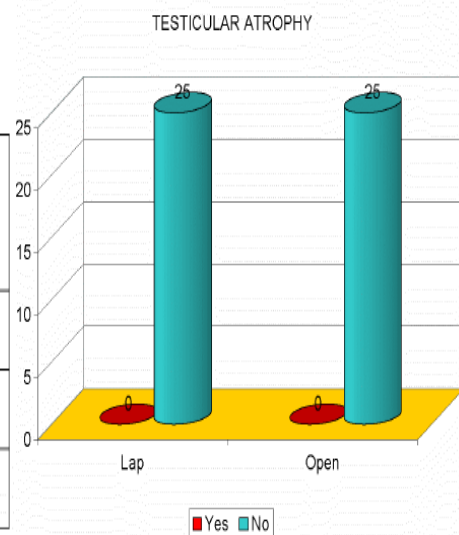
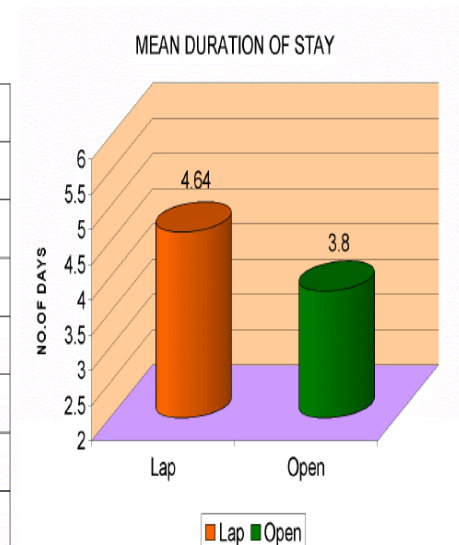


Table - 11

Duration of Stay

Duration of stay	Lap	Open
3 days	0	11
4 days	15	9
5 days	4	4
6 days	6	1
Total	25	25
Mean duration	4.64±0.86	3.80±0.86
P value	0.001 significant	



DISCUSSION

In general, among groin hernias, inguinal hernias form the largest group.

EPIDEMIOLOGY

Inguinal hernias are more frequent in males than females in a ratio of 20:1 in different series. 64% of inguinal hernias in adult males are of indirect type. Right side inguinal hernias in adult males are slightly more frequent than left side inguinal hernia. 55% were on right side. Bilateral hernias are 4 times more common in direct than indirect. In western series, the peak incidence of groin hernias is after 65 years. The incidence of elective inguinal hernioplasty in adults is 90.5 per 100,000 populations and for emergency hernioplasty in adults 7.2 per 10,000 populations. The overall incidence of inguinal hernias in adults in the west varies between 7% and 18%.

The aim of this study to compare the duration of surgery, intra operative complication (like bowel injury, vascular injury, conversion into open), postoperative complication (like postoperative pain, hematoma, seroma formation, testicular atrophy), Duration of hospital stay, of laparoscopic inguinal hernia repair (TEP & TAPP) in comparison with the open inguinal hernia repair (Lichtenstein) in our setup.

In this study, comparing methodology, open approach and laparoscopic approach for inguinal hernia repair were compared. The results when compared with previous published studies show similarities in many aspects and differ in some aspects.

Age incidence :

Age difference in the two groups was submitted for statistical analysis and found to be not significant. The mean age between the two groups proved to be almost equal.

Sex incidence :

Inguinal hernias are more frequent in males than females in a ratio of 20 : 1. In our study among 50 cases 47 are male patients and 3 are female patients.

Duration of procedure :

The mean duration of surgery for open approach was 55.32 minutes when compared with MRC trial group with 43.3 minutes. Bringmen et al in their study showed open approach to have less operative duration compared to laparoscopic approach 45 minutes vs 50 minutes. Wright et al in their study showed open approach to have less operative duration compared to laparoscopic approach 45 minutes vs 58

minutes. These values when compared with the mean duration of surgery for laparoscopic approach in my study (69.72 minutes), shows open approach to be better than laparoscopic approach in terms of duration of procedure.

Per operative complications :

Incidence of vascular and visceral injuries was found to be higher after laparoscopic repair (0.79% after lap repair versus 0% after open repair in NICE paper). IN MRC hernia trial group, all serious complications occurred in the laparoscopic group (5.6%) vs 1.4% in open group. In VA trial, complications rate was 39.1% in laparoscopic group including 2 deaths but 33.4% in open group.

These values when compared with my study, No peroperative complications like bowel injury and bladder injury were recorded. 7 cases in laparoscopic group were converted to open group due to hemorrhage. From these observations it can be safely concluded that open approach is safe in terms of peroperative complications.

Acute pain :

Pain recorded on second POD by pain measurement scale was taken as acute pain in my study. Acute pain was significantly lower in

laparoscopic group compared to open group. (Mean 2.08 vs 7.36). VA group did not find any difference in post operative pain. Stoker et al found less post operative pain for the first 4 hours after open hernia repair probably due to effect of local anesthesia. Cochrane Data base systematic review (2003) demonstrated less post operative pain in laparoscopic group. Similarly, another meta analysis study from the EU Hernia Trialists Collaboration reported decreased post operative pain with the employment of laparoscopic methods. In my study, in laparoscopic approach, post operative pain is less, compared to open group.

Chronic pain :

Pain recorded after 30th POD is taken as chronic pain in my study. Four patients in open approach group and none of the patients in laparoscopic group showed chronic pain, but the difference was statistically insignificant. Eklund et al in 2010 reported that 1.9% of patients who had undergone laparoscopic repair continued to report moderate or severe pain compared with 3.5% of those in the open repair group. Bignell et al reported a similar higher incidence in chronic groin pain in open versus laparoscopic inguinal hernia repair.

This study failed to demonstrate statistically significant difference

in terms of chronic pain between open and laparoscopic approach.

Post operative complications :

No statistically significant difference was made out between open and laparoscopic approach with respect to hematoma, testicular atrophy, though there was more incidence of seroma in laparoscopic group (9 cases vs 1 case). Aly Saber et al reported 5 cases of testicular atrophy in open approach group. In my study, there were no incidence of testicular atrophy in both open and laparoscopic groups. This study reports open approach to be safe in terms of post operative complications.

Duration of hospital stay :

In my study, duration of stay was significantly low in open group compared to laparoscopic group. (3.80 days vs 4.64 days) Mean duration of laparoscopic group was reported to be 4.6 days by Rubik Ray et al. V Singh et al reported low hospital stay in open group 1.8 days vs 3.5 days in laparoscopic approach. The shorter stay in the open group was due to the fact that in the initial study period some patients undergoing laparoscopic approach had prolonged stay due to complications. This study reports open approach to be better in terms of duration of hospital stay.

CONCLUSION

1. Open approach is better than laparoscopic approach in terms of duration of procedure, preoperative complications, post operative seroma formation and duration of stay.
2. No significant differences were made out between open approach and laparoscopic approach with respect to chronic pain, post operative complications including hematoma and testicular atrophy.
3. Acute pain is less in laparoscopic approach when compared to Open approach.
4. Open approach should be considered as a valid option in the management of inguinal hernias.

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