A CASE SERIES ON LAPAROSCOPIC TEP VS. LICHENSTEIN’S HERNIOPLASTY

1Dr R.Suryanarayana Raju, 1Dr A Sri Pavan Kumar, 1Dr L.Niharika

1,2,3Department of SPM, Konaseema Institute of Medical Sciences Research Foundation, Amalapuram, Andhra Pradesh, India

Corresponding Author: Dr R.Suryanarayana Raju
Mail ID: dr.suryanarayanarajur@gmail.com

ABSTRACT
Inguinal hernia is substantially more typical in men than ladies. Inguinal hernia fix is one of the most generally performed medical procedures today. This study involves 50 patients who have undergone laparoscopic TEP and Lichtenstein’s hernioplasty regardless of nation, race or financial status hernia establishes a significant medical services channel. In my study outcome was suggestive of that average operative time in patients undergoing Lap. TEP repair was high compared to Lichtenstein’s hernioplasty group. There were no major intra or postoperative complications.

Keywords: Inguinal hernia, Lichtenstein’s Hernioplasty, laparoscopic TEP

INTRODUCTION
Inguinal hernia was fixed laparoscopically not long after the foundation of laparoscopic cholecystectomy [1]. Anyway not at all like laparoscopic cholecystectomy, which was immediately acknowledged by the careful network, laparoscopic hernia fix has stayed an antagonistic issue since its beginning. Our study is to evaluate outcomes of totally extra peritoneal (TEP) repair by observing operating time, postoperative pain and complications, long term pain and recurrence, average length of stay in hospital and average duration required to return to the daily activities [2].

Inguinal hernioplasty techniques have been improved since the first hernioplasty. Tension-free techniques that apply synthetic mesh materials, as in the Lichtenstein approach, are the gold standard. Laparoscopic hernioplasty is the strongest alternative to Lichtenstein. The superiority of laparoscopic hernioplasty over Lichtenstein is a major topic of debate. In this study, we aimed to find a conclusion to this debate by comparing our totally extraperitoneal (TEP) experiences with Lichtenstein experiences.

MATERIALS AND METHODOLOGY
This is a prospective randomized study of 50 patients operated by laparoscopic total extra peritoneal repair and lichtenstein’s tension free hernioplasty in B.J. Medical College, Civil Hospital, Ahmedabad during the study period of July 2015 to December 2017.

Study Design:
A Prospective Comparative study: To study the efficacy based on postoperative pain, duration of operation, postoperative complication and resumption to normal work and also to study the efficacy of mesh repair of inguinal hernia.

Engaging factual investigation was done in the current examination

Inclusion criteria:

Exclusion criteria:
1. Unilateral inguinal hernia
2. Complicated inguinal hernia
3. Recurrent inguinal hernia
4. Patient not fit for general anaesthesia
5. Patient operated previously for lower abdominal surgeries
6. Intra operative conversion to open repair

OBSERVATIONS & RESULTS:
This prospective study consisted of 50 patients with diagnosis of inguinal hernia who were admitted in surgical ward in Civil Hospital, Ahmedabad. They are divided into two groups:

Group A - No. Of Laparoscopic TEP hernioplasty : 2
Group B - No. Of Lichtenstein’s Hernioplasty : 25

All cases underwent detailed preoperative assessment; their preoperative discoveries and postoperative inconveniences were fastidiously recorded according to convention. The discoveries were organized and the accompanying perceptions were made.

Discussion & Comparison
Present study is undertaken in an effort to compare between laparoscopic TEP repair and Lichtenstein’s hernioplasty for inguinal hernia. This is likewise done to recognize the subset of patients who might profit more, from a specific kind of repair. Numerous investigations have featured the benefits and dangers of laparoscopic approach for the fix of inguinal hernia, the last sentence actually stays to be composed as lion’s share of preliminaries are too little to even consider showing away from of one method over another [8].

A prospective comparative study with regard to following parameters was made:
1. Duration of Operation.
2. Intra operative & Post operative Complications.
4. Duration of hospital stay.
5. Recurrence rates.

GENDER & AGE DISTRIBUTION:
All the patients in our study were males. This represents the low incidence of inguinal hernia in female in general population. Overall mean age was 54.04 years. The mean age of patients in Group A: TEP group was 52.68 years (Range from 34 -74 years) and Group B: Lichtenstein’s hernioplasty group was 55.40 years (Range from 24-78 years). 18 patients ( 72%) in Lap TEP group(n=25) are aged between 41 years to 60 years while 17 patients (68%) in Lichtenstein’s hernioplasty group(n=25) are aged between 41 years to 70 years, thus suggests that inguinal hernia is more common in middle and old age group.

OPERATIVE TIME:
In our examination, the mean usable time was 168 minutes for laparoscopic TEP hernia fix and 156 minutes for Lichtenstein's hernia fix. Henceforth the distinction between mean usable time was 12 minutes [11]. The operative time in various studies for laparoscopic Total Extra-Peritoneal and Lichtenstein’s hernioplasty repair is as follows:

In our study, Lap. TEP group 21 patients (n=25) have operative time between 131 minutes to 210 minutes and in Lichtenstein’s hernioplasty group 22 patients (n=25) have operative time between 111 minutes to 190 minutes. As compared to different study, mean operative time of our study is more. It could be explained by following reasons:

- 
  The sample size in this study is very small (n=50).
- 
  All patients have bilateral inguinal hernias.
- 
  Some patients are having large to giant hernia.
- 
  Lichtenstein’s hernioplasty which were performed by resident doctors had longer operative time as compared to surgeries performed by consultants.

### COMPARISON OF INTRAOPERATIVE & POSTOPERATIVE COMPLICATIONS:

#### Table 2: Complication Rate

<table>
<thead>
<tr>
<th>Complication</th>
<th>Group A (Lap. TEP)</th>
<th>Group B (Lichtenstein’s Hernioplasty)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>Minor</td>
<td>05</td>
<td>20</td>
</tr>
<tr>
<td>Inference</td>
<td>Incidence of minor complication are more in Group A but statistically not significant p=0.7470</td>
<td></td>
</tr>
</tbody>
</table>

There were NO MAJOR intraoperative or postoperative complications recorded in our study (n=50), but we had 12 patients with MINOR complications in our study.

#### Table 3: Complication Rates in other Studies:

<table>
<thead>
<tr>
<th>Study</th>
<th>Group A (Lap. TEP)</th>
<th>Group B (Lichtenstein’s Hernioplasty)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Major Complication</td>
<td>Minor Complication</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Major Complication</td>
</tr>
<tr>
<td></td>
<td>Minor Complication</td>
<td>Minor Complication</td>
</tr>
<tr>
<td>H.Pokorny</td>
<td>00% (n=35)</td>
<td>17% (n=35)</td>
</tr>
<tr>
<td></td>
<td>00% (n=86)</td>
<td>19% (n=86)</td>
</tr>
<tr>
<td>A.Eklund</td>
<td>0.4% (n=665)</td>
<td>17.3% (n=665)</td>
</tr>
<tr>
<td></td>
<td>0.2% (n=706)</td>
<td>17.5% (n=706)</td>
</tr>
<tr>
<td>Leigh Neumayer</td>
<td>0.1% (n=994)</td>
<td>19% (n=994)</td>
</tr>
<tr>
<td></td>
<td>1.1% (n=99)</td>
<td>24% (n=989)</td>
</tr>
</tbody>
</table>

Our Study

<table>
<thead>
<tr>
<th></th>
<th>00% (n=25)</th>
<th>20% (n=25)</th>
<th>00% (n=25)</th>
<th>28% (n=25)</th>
</tr>
</thead>
</table>

There were 5 patients (2 patients - postoperative urinary retention, 1 patient - seroma, 1 patient - surgical site infection, 1 patient - scrotal oedema) with minor complications in Laparoscopic TEP group - 20%. There were 7 patients (1 patient - postoperative urinary retention, 2 patients - seroma, 2 patients - surgical site infection, 2 patients - scrotal oedema) with minor complications in Lichtenstein repair group - 28%. In our study Minor complication rate is High in Lichtenstein’s hernioplasty group compared to Lap. TEP group. These complications were managed conservatively. There were no perioperative or postoperative deaths have been recorded. The results of minor complication rate of our study are comparable with different study.

POST OPERATIVE PAIN:
Comparison of postoperative pain between laparoscopic TEP and Lichtenstein hernioplasty repair:

In our study, pain score in laparoscopic TEP group was as follows:
- On 1st day, 18 patients had moderate pain and 7 had severe pain, it is common in post-operative period. On 2nd day, 17 patients with mild pain were discharged and remaining 8 patients were discharged between 3 to 6 post-operative day.

In our study, pain score in Lichtenstein’s hernioplasty group was as follows:
- On 1st day, 18 patients had moderate pain and 7 patients had severe pain. 18 Patients with Mild pain were discharged on the 2nd Day and remaining 7 patients were discharged between 3 to 6 post-operative day.

Post-operative pain is statistically similar between two groups of patients on day 2, (p=0.8415) and on DOD (p=0.6440) i.e. Difference being statistically non significant.

Pain is a difficult parameter to assess.
- Individual variation, personal expectations and social implications all affect pain perception and expression. There is, however, significant evidence to support that laparoscopic approaches causes less postoperative pain, at least in the immediate postoperative period. Eklund & Leigh Neumayer studied between totally extraperitoneal and lichtenstein’s hernioplasty techniques.

Our study findings are consistence with other studies findings done previously (Table 4).

Table 4: Comparison of Early postoperative pain assessment of included trials using Visual Analogue Scale (VAS):

<table>
<thead>
<tr>
<th>Study</th>
<th>Group A (Lap. TEP)</th>
<th>Group B (Lichtenstein’s Hernioplasty)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>POD 1</td>
<td>POD 2</td>
</tr>
<tr>
<td>POD 1</td>
<td>00%</td>
<td>00%</td>
</tr>
<tr>
<td>POD 2</td>
<td>20%</td>
<td>28%</td>
</tr>
<tr>
<td>POD 3</td>
<td>00%</td>
<td>00%</td>
</tr>
<tr>
<td>POD 4</td>
<td>28%</td>
<td>28%</td>
</tr>
</tbody>
</table>

DURATION OF HOSPITAL STAY:
In our study: The mean post-operative hospital stay was 2.44 for Laparoscopic TEP repair hernia repair and 1.96 for Lichtenstein hernia repair. The post-operative hospital stay is statistically similar between two groups with p= 0.9227. Our hospital is a tertiary care referral centre, it covers whole state and many districts of the neighbouring state and due to hospital’s admission and discharge protocol, work load of the patient’s, we were not able to discharge the patients on post-operative DAY 1.

AVERAGE DAYS TO RETURN ROUTINE ACTIVITIES:

Table 6: Comparison Of Average Days to Return Routine Activities:

<table>
<thead>
<tr>
<th>Study</th>
<th>Group A (Lap. TEP)</th>
<th>Group B (Lichtenstein’s Hernioplasty)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hester R. Langeveld (n=660)</td>
<td>07 days</td>
<td>09 days</td>
</tr>
<tr>
<td>A.Eklund (n=1371)</td>
<td>07 days</td>
<td>12 days</td>
</tr>
<tr>
<td>Our study (n=50)</td>
<td>10 days</td>
<td>11 Ays</td>
</tr>
</tbody>
</table>

Average days to return daily routine activities is more in lichtenstein’s group. Though our study results are comparable with different studies, average days to return daily routine activities were not adequately assessed as most of the patients in our study were either illiterate, unemployed or retired.

EARLY RECURRANCE:

Comparison of early recurrence rates between laparoscopic TEP and Lichtenstein’s hernioplasty:

Table 7: Recurrence Rates:

<table>
<thead>
<tr>
<th>Study</th>
<th>Group A (Lap. TEP)</th>
<th>Group B (Lichtenstein’s Hernioplasty)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hester R. Langeveld (n=660)</td>
<td>8%</td>
<td>1.9%</td>
</tr>
<tr>
<td>Leigh Neumayer (n=1983)</td>
<td>10.1%</td>
<td>4.9%</td>
</tr>
<tr>
<td>Our study (n=50)</td>
<td>00%</td>
<td>00%</td>
</tr>
</tbody>
</table>
There was no early recurrence in either Laparoscopic TEP Repair or Lichtenstein’s hernioplasty group in our study, most probably due to small duration of my study and small sample size. Recurrence in literature is almost always attributed to less experience and occurs early in the learning curve.

**SUMMARY**

Inguinal hernia is more common in middle and elderly male. There were no Intraoperative or postoperative major complication in any group, but post operative minor complication were high in Lichtenstein’s hernioplasty group. The average operative time in patients undergoing Lap.TEP repair was high compared to Lichtenstein’s hernioplasty group. There was no statistically significant difference in early post operative pain between two groups of patients on day 2, (p=0.8415) and on DOD (p=0.6440). Though Lap.TEP repair was associated with reduced post-operative pain score and less minor complications, the post operative hospital stay was higher in Lap.TEP group Compared to Lichtenstein’s hernioplasty group. Mean Average days to return daily routine activities is more in Lichtenstein’s group. There was no difference in early recurrence in either Laparoscopic TEP Repair or Lichtenstein’s hernioplasty group.

**CONCLUSION**

At the end of our study, It can be concluded safely that Laparoscopic TEP repair and Lichtenstein hernioplasty does not show statistically significant difference in outcomes. In both groups, operative time, intraoperative & post operative complication rate, post operative pain score, hospital stay and average days to return daily routine activities are almost similar. In the early recurrence rate no difference found in both the groups.

**REFERENCES**

3. Hastled WS. The cure of the more difficult as well as the simpler inguinal ruptures. Bull Hopkins Hosp. 1903; 14: 208

http://doi.org/10.36295/ASRO.2020.231922