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RESEARCH ARTICLE

TAPP VS LTF : A CLINICAL STUDY

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ABSTRACT

Introduction: Surgical repair of hernias is the most commonly performed surgical procedure in the world. Despite a large number of clinical studies, no consensus has been achieved on surgical technique of inguinal hernias. This study aims at evaluating the conventional Lichtenstein's tension free repair versus transabdominal pre-peritoneal placement of mesh, in terms of morbidity, number of days of stay and post-operative pain.

Methodolgy: This study evaluates the Lichtenstein's tension free hernia repair versus TAPP. The study was conducted between November 2015 to August 2017 and total of 60 patients admitted with inguinal hernia, in the department of general surgery, Bangalore medical college, who met the inclusion criteria were included. The data was collected and appropriate statistical analysis was done.

Results: Duration of hospitalization in the patients who underwent TAPP was lesser as compared to the patients who underwent LTF repair. Post-operative complications in the LTF group were also more as compared to the TAPP group though the duration of surgery was longer in the TAPP group as compared to the LTF group.

Conclusion: Though TAPP is a newer method of hernia repair but result in terms of post-operative outcomes are comparable to the conventional LTF repair and in terms of postoperative pain and complications, seems to be superior to LTF. Hence TAPP can be considered at par with the conventional LTF repair and in some ways better.

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INTRODUCTION

Inguinal hernia repair has been one of the most common operations performed by general surgeons for years. Inguinal hernias emerge from the myopectineal orifice of Fruchaud. Inguinal hernias are classified as direct or indirect. Until the 1980's the most common repairs were anatomic and tissue based and were associated with high recurrence rates, between 1% and 15-20% depending on the technique and the study. Improving recurrence rates ultimately has socioeconomic impacts with less work missed and quicker return to work. In view of recurrences because of excessive tension on suture line, surgeons sought a way to create a tension free repair. The polypropylene mesh; which is non-carcinogenic, non-allergic and non-inflammatory; was introduced. Inguinal hernias may present as surgical emergencies like irreducibility, strangulation or incarceration. Potential complications during primary inguinal repair include hemorrhage; severed vas deferens, nerves and testicular blood supply; and visceral injury to bowel, bladder and vessels. Post-operative complications are wound infection, hemorrhage, hydrocele, ischemic orchitis, neuralgia and testicular atrophy. The open methods of inguinal surgery include Bassini's repair, Modified Bassini's repair, Shouldice technique, Lichtenstein's tension free hernioplasty, Prolene mesh repair, Cooper's ligament repair and Pre-peritoneal placement of mesh.The most significant advances to impact inguinal hernia repair have been the addition of prosthetic materials to conventional repair and the introduction of laparoscopy to general surgical procedures.

The tension free repair has become the dominant method of inguinal hernia repair after it was found that tension in a repair is the principal cause of recurrence. The era of tissue based repair was supplanted by tension free repairs with wide spread acceptance of prosthetic material for inguinal floor reconstruction. Initially described by Lichtenstein, the repair involved placement of a marlex mesh over the entire floor of the inguinal canal. Laparoscopic preperitoneal mesh placement is another method of tension-free mesh repair, based on a pre-peritoneal approach. The laparoscopic approach provides the mechanical advantage of placing a large piece of mesh behind the defect covering the myopectineal orifice and using the natural forces of the abdominal wall to anchor the mesh in place. Laparoscopic inguinal hernia repair has added to the armamentarium of the general surgeon, providing a technique that lessens postoperative pain and improves recovery. Refinements in approach and technique have led to the development of the newer techniques such as intraperitoneal on lay mesh, the transabdominal pre-peritoneal repair, and the totally extra peritoneal repair. Over the years, surgeons all over

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the world have tried various techniques for repair of inguinal hernias. Each procedure had its own advantages and disadvantages. This clinical study has been undertaken to study the comparison of open and Trans abdominal pre-peritoneal laparoscopic inguinal hernias repair and their postoperative complications.

MATERIALS AND METHODS

The present study was conducted in the Department of surgery, Bowring and Lady Curzon hospital and Victoria Hospital, Bangalore Medical College and Research Institute, Bangalore on patients diagnosed with inguinal hernia during the period of November 2015 to August 2017.

Study Design: Prospective study.

Study Period: The present study was conducted during November 2015 to August 2017.

Method of Collection of Data: Source of Data: Patients presenting with inguinal hernia at department of surgery in Victoria and Bowring and Lady Curzon Hospitals.

Randomization: The qualifying patients are informed of the risks and benefits of each operation and are asked to sign a detailed informed consent.

Selection of Cases: Following evaluation, patients were grouped into Open(**O**) and TAPP(**T**) accordingly as per the surgery chosen by the patient.

Inclusion Criteria

- Patients above 18 years of age admitted in Victoria and Bowring and Lady Curzon hospitals diagnosed with both direct and indirect inguinal hernia.
- Patients with Body Mass Index in range of 18-25 kg/m^2.
- Patients who would be informed about the study; would have read, understood and signed the patient informed consent and would be willing to submit to post-operative follow-up evaluations.

Exclusion Criteria

- Patients below 18 years of age.
- Patients with Irreducible and Obstructive hernia.
- Patients having Recurrent hernia.
- Patients with medical contraindications to general anesthesia.

Procedure

All the patients were admitted and a detailed history and clinical examination was carried out as per written proforma. Preoperatively the patients were offered options of either laparoscopic TAPP or L.T.F HERNIOPLASTY repair for inguinal hernia, and will be educated about the advantages, disadvantages, type of anaesthesia, and also the approximate cost of each of the procedure. After taking consent for the procedure, the patient is investigated thoroughly. Once thepatient is deemed fit for surgery; consent is taken for the same. Apart from the routine investigations, pre-operative evaluation of patient for laparoscopic repair include

- Cardiac evaluation such as 2D ECHO
- Pulmonary function test (PFT) Ultrasound of abdomen and pelvis, mainly to rule out prostate enlargement.

A dose of prophylactic antibiotic was given 30 minutes before surgery. A Foleys catheter were inserted (if required). Post operatively the patients were kept nil by mouth and advised complete bed rest till the effect of anaesthesia is completely worn out, till then they are given supportive maintenance intravenous fluids. Foley's catheter is removed once the patient becomes ambulatory, usually on the first postoperative day.
Patients were advised and encouraged to ambulate and start their activities of daily life as early as possible. Prophylactic oral antibiotics are given for duration of 5 to 8 days, of which parenteral antibiotics are given for at first 72 hours. Analgesics were given at 12-hour interval for a period of 3 to 5 days, shifted on to oral tablets as early as possible. Patients were observed for any complications like subcutaneous emphysema, CO_2 narcosis in the immediate post-operative period and hematoma, seroma, wound sepsis during their stay in hospital and also assessed for postoperative pain and its severity. Patients were discharged once free of complications and once they resumed their activities of daily normal life. Stitches are removed on 10^{th}day during (1st follow up), and then followed up after3 week (2nd follow up), and then after 3 month of surgery, (3rd follow up). Later on after 6 months of surgery (4th follow up).

Statistical Methods

At the end of the study the data was tabulated and analyzed using rates, ratios and percentages. Chi square test and t - test was used for comparison.

Observation and Results

30 patients were randomized to each group

- Group A / OPEN group: Lichtenstein Tension Free Hernioplasty group.
- Group B / TAPP group: Transabdominal Pre-Peritoneal Laparoscopic Hernia group.

Following evaluation, patients were grouped accordingly as per the surgery chosen by the patient. The following details regarding the patient were collected

- Age of the patient.
- Symptoms and their duration.
- Past history.
- Precipitating Factors
- Complete physical examination.
- Consent for study.
- Complications if any.
- Duration of hospital stay.
- Duration of Surgery.

1. Patients were aged between 20-75 years in OPEN L.T.F HERNIOPLASTY group with the mean age being 50.26 years.
2. Patients were aged between 18-76 years Laparoscopic Transabdominal pre-peritoneal (TAPP) group with the mean age being 47.63 years.

Table 1. Age distribution

	OPEN group		TEP group	
Age	Number	Percentage	Number	Percentage
18-20	1	3.33%	1	3.33%
21-30	2	6.67%	5	16.67%
31-40	6	20%	6	20%
41-50	6	20%	5	16.67%
51-60	7	23.33%	6	20%
61-70	6	20%	6	20%
>70	2	6.67%	1	3.33%
Total	30		30	
Mean ±	50.267±		47.63±	
SD	14.43		15.53	

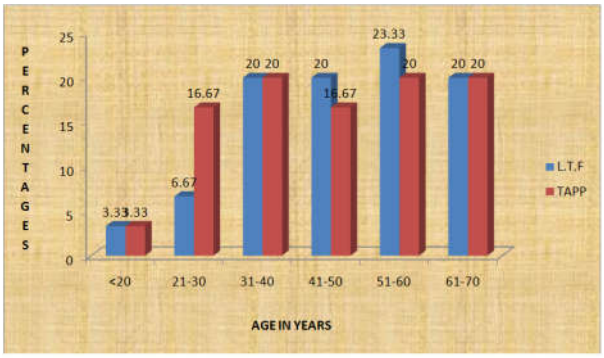

Figure 1. Age distribution

In our study all of the patients were males, but the difference between the two groups was not significant as,

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	30.286[a]	30	.451

Hence the data is comparable between the two groups.

Table 2. Occupational Status

Valid	Frequency			Percent		
	L.t.f	Tapp	Total	L.t.f	Tapp	Total
Daily wagers	13	15	28	43.3	50	46.67
Farmers	12	9	21	40	30	35
Retired Employees	2	4	6	6.67	13.3	10
Auto drivers	3	2	5	10	6.67	8.33
Total	30	30	60	100	100	100

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.438a	3	.697

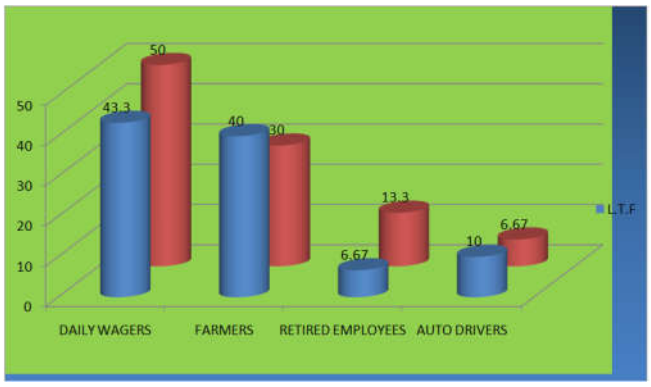

Figure 2. Occupational status

Since there was no significant difference between the two groups, even occupational status was comparable and daily wagers presented to our hospital compared to other working class.

Table 3. Diagnosis – Side of Hernia

Laterality	Frequencies			Percent		
	L.t.f	Tapp	Total	L.t.f	Tapp	Total
Right	15	13	28	50	43.3	46.67
Left	11	11	22	36.67	36.67	36.67
Bilateral	4	6	10	13.3	20	16.67

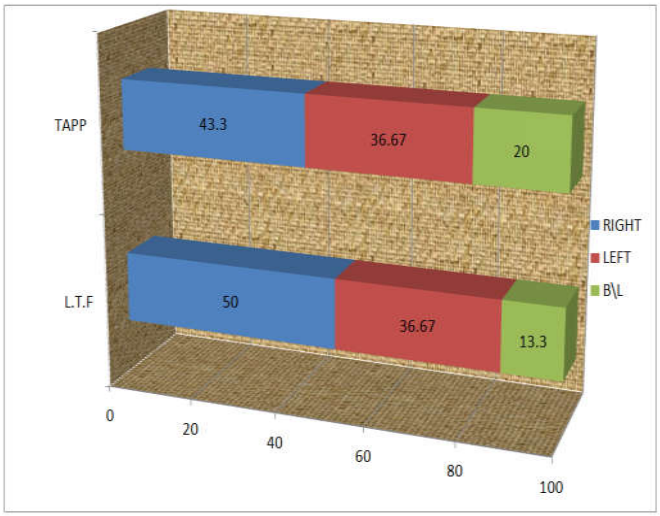

Figure 3. Site if hernia

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	.543[a]	2	.762

In our study the difference between the two groups with respect to the side of hernia was not significant, X2=.543, p=.762. Hence the data is comparable between two groups.

In our study we found that right inguinal hernia was more common with 46.67% of the study group presented with right inguinal swelling.

Table 4. Diagnosis-Type of Hernia

Type of hernia	diagnosis			percent		
	L.t.f	Tapp	Total	L.t.f	Tapp	Total
Direct	11	10	21	36.67	33.3	35
Indirect	12	14	26	40	46.67	43.3
Bilateral Direct	2	4	6	6.67	13.33	10
Bilateral Indirect	2	2	4	6.67	6.67	6.67
Indirect with direct	3	0	3	10	0	5

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3.868[a]	4	.424

Indirect hernia was seen in 21 cases being the most frequent type while combined direct and indirect being the least and the two groups were comparable since X^2=3.868 and p=.424, no significant difference between two groups found.

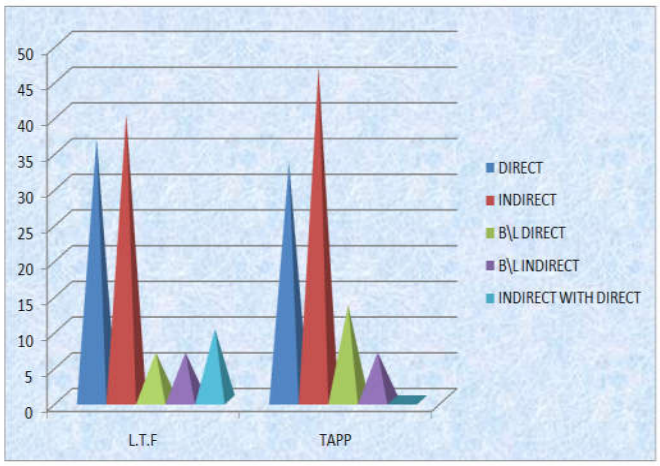

Figure 4. Types of hernia

Table 5. Duration of Symptoms

Duration	Frequency			percent		
	L.t.f	Tapp	Total	L.t.f	Tapp	Total
< 1yr	21	18	39	70	60	65
>1 yr	9	12	21	30	40	35
Total	30	30	60	100	100	100

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.659[a]	1	.417		

Most of our patients presented within a year of their symptoms, which was swelling in groin and we found out there is no significant difference between two groups with chi square value being 0.659

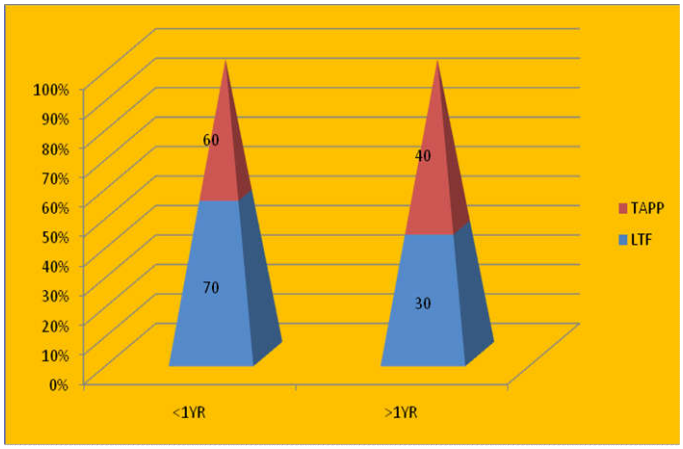

Figure 5. Duration of symptoms

Table 6. Precipitating Factors

Factors	Frequency	Percent
Bronchial asthma	2	3.3
COPD With Smoker	12	20
BPH	3	5
Smoker	43	71.67

Around 71% of patients found to be smokers and 20% patients were COPD with history of smoking relating to have higher incidence of hernia in smokers.

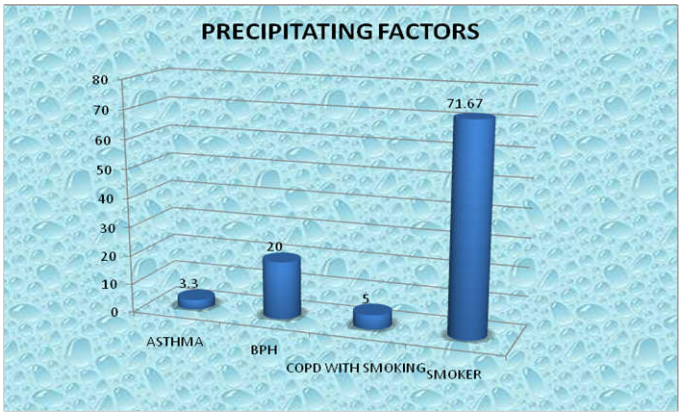

Figure 6. Precipitating factors

Table 7. Postoperative complications

Complications	Surgeries			percent		
	L.t.f	Tapp	Total	L.t.f	Tapp	total
None	23	26	49	76.67	86.67	81.67
Seroma	2	1	3	6.67	3.3	5
Ssi	1	2	3	3.3	6.67	5
Mesh infection	0	1	1	0	3.3	1.67
Wound dehiscence	1	0	1	3.3	0	1.67
Urinary retention	3	0	3	5	0	5
	30	30	60	100	100	100

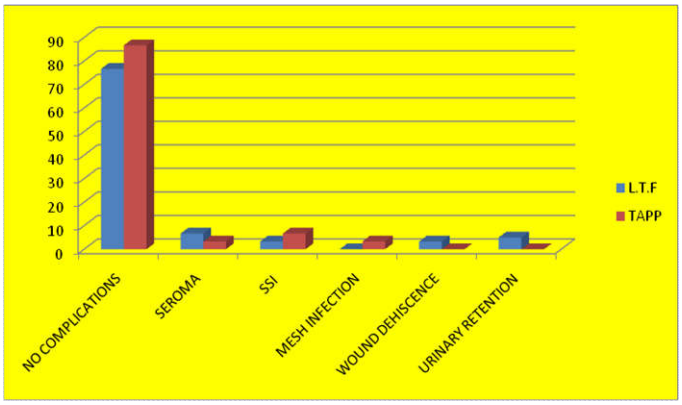

Figure 7. Postoperative complications

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5.850[a]	5	.321

Most of our patients had no complications with wound infection being next common with a mesh infection and rejection observed in one TAPP case, but no significant difference found in our study groups with chi square results.

Table 8. Post-operative pain

Severity	Surgery			percent		
	L.t.f	Tapp	Total	L.t.f	Tapp	Total
None	22	27	49	73.3	90	81.67
Mild	6	2	8	20	6.67	13.33
Moderate	1	0	1	3.33	0	1.67
Severe	2	1	3	6.67	3.33	5
Total	30	30	60	100	100	

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	10.083[a]	3	.018

Most of our patients had no pain post operatively but few experienced mild pain. 3 patients had severe pain with 2 being in L.T.F group and they had urinary retention post operatively too. There was no significant difference found in two groups from our study.

Recurrences were observed in both groups and with no significant differences found during us study group. In our study we found that the mean time taken for L.T.F. repair was about 45.25 minutes compared to the mean time of 80.25 minutes taken for TAPP repair.

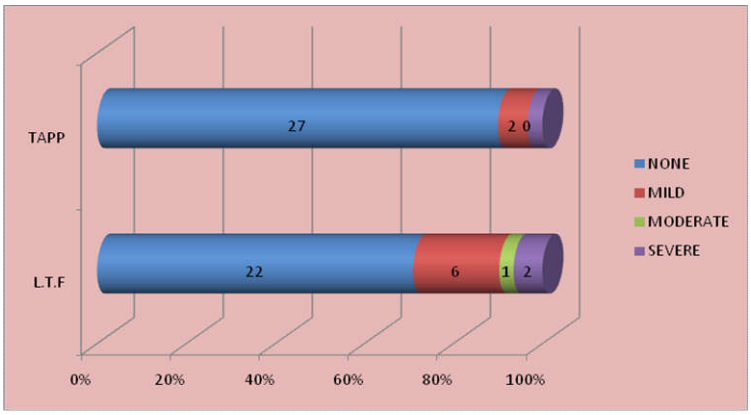

Figure 8. Postoperative pain

Table 9. Recurrence after surgery

Recurences	L.T.F	TAPP
None	29	29
	96.67%	96.67%
Recur	1	1
	3.33%	3.33%
Total	30	30

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.000[a]	1	1.000		

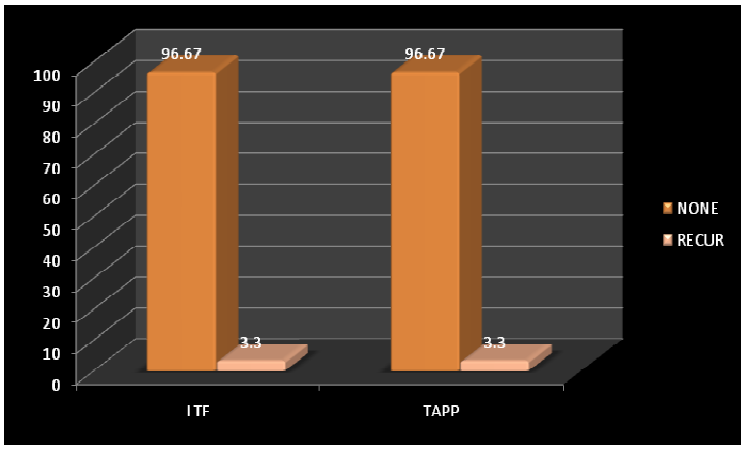

Figure 9. Recurrence after surgery

Table 10. Duration of the surgery

	Suregery_Type	n	mean	std. deviation	std. error mean
Duration of surgery	L.t.f.	30	45.2517	2.92732	.53445
	tapp	30	80.2500	3.03369	.55387

	t-test for equality means						
	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference Lower	Upper
Equal variances assumed	-45.471	58	.000	-34.99833	.76969	-36.53903	-36.53907
Equal variances not assumed	-45.471	57.926	.000	-34.99833	.76969	-33.45764	-33.45760

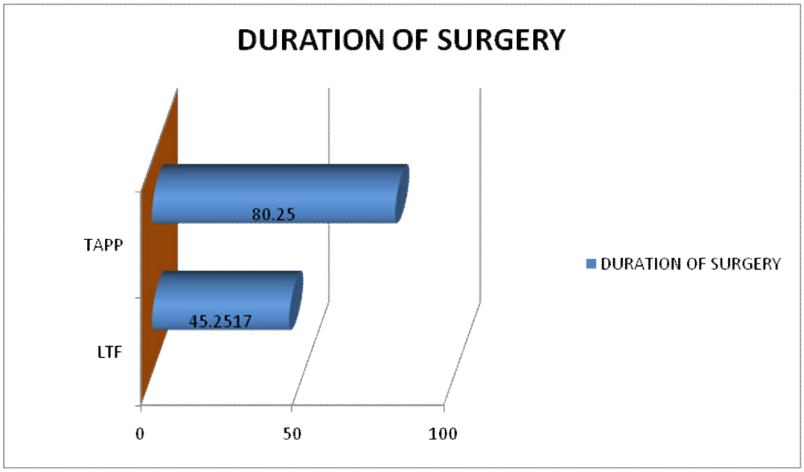

Figure 10. Duration of surgery

Table 11. Duration of hospital stay

	SURGERY_TYPE	N	Mean	Std. Deviation	Std. Error Mean
HOSPITAL_STAY	L.T.F	30	7.5000	1.50287	.27439
	TAPP	30	5.7667	1.27802	.23333

	t-test for equality means						
	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
						Lower	Upper
Equal variances assumed	4.812	58	.000	1.73333	.36018	1.01235	2.45432
Equal variances not assumed	4.812	56.541	.000	1.73333	.36018	1.01195	2.45471

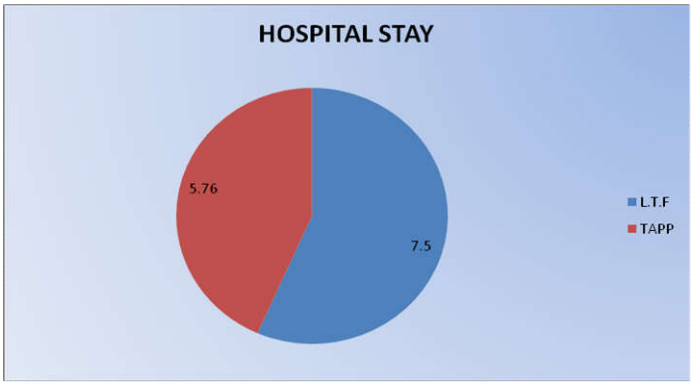

Figure 11. Duration of hospital stay

The mean duration of hospital was found to be 7.5 days for the L.T.F hernioplasty group compared to the TAPP laparoscopic hernia group which was around 5.76 days. Since ours is a teaching institution the minimum time taken from admission to surgery is around 3 to 4 days hence making the duration of stay in both groups apparently longer.

DISCUSSION

Age: In a study by Ira M. Rutkow, the age at presentation is as follows. It is compared with present study.

Table 12. Comparison of age incidence in the present study with standard literature

Age(years)	Present Study(60cases)	Ira M. Rutkow
<15	-	18 (18%)
15- 44	25 (41%)	26 (26%)
45- 64	26 (43%)	30 (30%)
>65	09 (15%)	26 (26%)

In the study of Ira M. Rutkow, the highest incidence was in the age group 45-64 which was 30 cases and next was 26 cases both in 15-44 and >65 age group. In our study, 25 cases were in 15- 44 age group and 9 cases in >65 age group. The age incidence of our study matches with the above study.

Sex: In a study by Ira M. Rutkow, 90% of total cases were male and 10% female. In a study by Martin Kurzer of British hernia center, 975 cases were male and 3% female.

Table 13. Comparison of sex incidence in the present study with standard literature

Sex	Our Study	IraM.Rutkow	Martin Kurzen
Male	100	90	97
Female	-	10	3

The sex incidence of our study does not correlate with the other studies, as there is no female cases in our study.

Table 14. Comparison of occupational status in the present study with standard literature

Occupation	Frequency	Percent	M. Bay Nielson	Percent	Percent
Farmer	21	81.67	Constantly strenuous work	14.1	
Daily Wagers	28		Intermittently strenuous work	33.1	47.2
Auto Drivers	5	8.3	Walking- no heavy lifting	28.3	28.3
Retired employee	6	10	Sedentary Work	22.0	22.0
-	-	-	Unspecified	2.5	2.5
Total	60	100.0	Total	100.0	100.0

Table 15. Comparison of precipitating factors in the study with standard literature

Precipitating Factors	Frequency	Percent
COPD	12	6.6
Bronchial Asthma	2	1.6
BPH and Str. Work	3	6.6
Smoker	43	26.2
Total	60	100

Table 16. Comparison of types of hernia in the present study with standard literature

Type of hernia	Present Study (%)	Ira M. Rutkow study
Right- indirect	25	36
Right- direct	18.33	15
Left- indirect	18.33	28
Left- direct	16.67	13
Bilateral	16.67	2
Total	100	100

Table 17. Comparison of duration of surgery in the present study with standard literature

Type of surgery	N	Mean (time in min.)	UdwadiaTehemton	MRC trail
Hernioplasty	31	45.251	55.5	43.3
Laparoscopic Repair	30	80.25	67.5	58.4

Table 18. Postoperative pain

SEVERITY	SURGERY			PERCENT		
	L.T.F	TAPP	TOTAL	L.T.F	TAPP	TOTAL
NONE	22	27	49	73.3	90	81.67
MILD	6	2	8	20	6.67	13.33
MODERATE	1	0	1	3.33	0	1.67
SEVERE	2	1	3	6.67	3.33	5
TOTAL	30	30	60	100	100	

Occupation

In our study the farmers and daily wagers who constitute 81.67% are comparable with constantly/intermittently strenuous work group of M. Bay Nielson, who constitute 47.2%. Sedentary workers make up only 10% in our study. 8.3% make our study in no heavy lifting category which is less than from standard study.

Precipitating Factors

In a study by Mike S. L Liem and others, the precipitating factors were COPD in 10%, BPH in 5%, strenuous activity in 24%. It is a well-known fact that there are multifactorial causes for hernia which is indeed a tougher task to single out. From our study its shown that smokers constitute a significant size which as in literatures points to abnormal biochemical, metabolic and connective tissue disorders and points out the prevalence of smoking in general population. In our study on comparison to the study by Mike S.L Liem and others, the number of people, involved in strenuous work is 81.6% (farmers and daily wagers) and the high incidence is explained by the fact that agriculture is the main occupation in India.

Diagnosis - Types of hernia

The incidence of different types of hernia in our study is almost comparable with the study done by Rutkow. The mean duration for hernioplasty in our study was 45.25 min which is in comparison to the study conducted by MRC trail[5]. Time for laparoscopic inguinal hernia repair (TAPP) was 80.25 min compared to the standard study which was around 58.4 min. This may be due to the initial learning curve of the surgeons in our study leading to prolonged operating time.

Postoperative pain

Immediate post-operative pain was assessed using VRS. A VRS's describing different levels of pain intensity or pain effect, ordered from least to most intense. The patient reads the

list and chooses the one word that best describes the intensity of their pain experience at that moment. Many different VRS lists with variation in pain intensity levels have been created. In a 4 paints VRS for example, no pain would be given a score of 0, mild pain a score of 1, moderate pain a score of 2, and severe pain a score of 3.

repair with 7.5 days in cases of hernioplasty. The post-operative days spent in the hospital were also less in the laparoscopic group. The duration was relatively increased as the pre-operative stay was minimum of 3 to 4 days in our institution.

Table 19. Post-operative complication

COMPLICATIONS	SURGERIES			PERCENT		
	L.T.F	TAPP	TOTAL	L.T.F	TAPP	TOTAL
NONE	23	26	49	76.67	86.67	81.67
SEROMA	2	1	3	6.67	3.3	5
SSI	1	2	3	3.3	6.67	5
MESH INFECTION	0	1	1	0	3.3	1.67
WOUND DEHISCENCE	1	0	1	3.3	0	1.67
URINARY RETENTION	3	0	3	5	0	5
	30	30	60	100	100	100

Table 20. Duration of Hospitalization

	Surgery Done	Number of patients	Mean
Hospital Stay	Hernioplasty	31	7.5
	Laparoscopic Repair	30	5.76

Table 21. Recurrence

RECURRENCES	L.T.F	TAPP
NONE	29	29
	96.67%	96.67%
RECUR	1	1
	3.33%	3.33%
TOTAL	30	30

The strengths of VRSs include the ease with which they can be administered and scored. Because, they are generally easy to understand compliance rates for VRSs are as good as or better than those for other measures of pain intensity under most conditions[6].In the present study only immediate post-operative pain was evaluated. As can be seen from the chart above, the severity of pain was more in the cases where hernioplasty was performed and less in the laparoscopic inguinal hernia repair. This can be probably explained by the extensive dissection involved in the tissue repairs. In our study chronic pain was not assessed and this is important to assess chronic persistent pain intrinsic to each type.

Post-operative complication

In our study most patients had uneventful post-operative recovery, complications noted in our study mostly was from L.T.F group with a notable mesh infection and mesh rejection in one of TAPP case. Mesh infection was observed with foul smelling discharge and pus culture sensitivity being positive and further aggravation of pain and swelling prompting to mesh rejection. In the study done by UdwadiaTehemton et al. wound infection rates were significantly lower after laparoscopic techniques (1%) than after the Lichtenstein operation (2.7%) and other open mesh repairs (2.4%). Our study has comparable results with the above study regarding post-operative complications.

Duration of Hospitalization

In our study we found that the mean period of hospitalization was slightly fewer 5.76 days in case of laparoscopic hernia

Recurrence

In our study we found 3.3% recurrence in the both group. MRC[8] laparoscopic hernia trail group found 1.9% recurrence rate in laparoscopic group and zero percent recurrence rates in open group at one year. Champault et al. found recurrence rate of 6% in Laparoscopic group versus 3% in open group in a series of 100 patients in a randomizedtrial.

Conclusion

The present study is comparative study between The Lichtenstein tension free Mesh repair and the TAPP inguinal hernia mesh repair. The study was conducted with an intention to compare the effectiveness of L.T.F & TAPP and complications if any. All patients were intensively monitored in the immediate post-operative period and the complications noted. We found that there was a marked reduction in postoperative pain in TAPP hernia repair compared to the L.T. F surgery. There was no marked difference in the post-operative complications between the two groups except for a mesh infection in TAPP group. The patients were followed up in the postoperative period for variable durations. Drop- outs to follow up were many. Therefore, few recurrences were noted during the study period. The recurrence rates were similar in both groups in our study. There were few limitations to the study, the duration taken for preparation of the patients from the time of admission to the time of surgery was normally around three to four days which led to an apparent increase in the duration of hospitalization in both group. The learning curve for the surgeons in laparoscopic hernia repair led to prolonged duration of surgery and also for the few recurrences

noted. There were few dropouts in the follow up period and since the study period was for a short duration, long term outcomes and results cannot be assessed and thus the follow up continues for these patients. To summarize, there is no universal repair for groin hernia and no two surgeons will disagree to agree on that point. The availability of such an array of surgical techniques in the treatment of groin hernias is bound to confuse the younger surgeon. All techniques will have hard proponents as well as opponents. This is where the practice of evidence based medicine is very crucial and one should have close watch on the long term follow up results of any particular newer procedures. Till then one may practice a time honored and a good surgical technique, which has the least recurrence rate that is handed over to them by their seniors, taking into account the cost factor which is still important in the developing country like ours.

- In our study the incidence of hernia was common in the younger age group, greatest in the 45- 64 years' age group.
- The occurrence of hernia is common among the farmers and labourers accounting for 81% in comparison to other occupation.
- 65% patients presented within the first 1 year of onset of complaints while 35% of them presented after 1 yrs.
- In our study around 90% of patients were smokers.
- Right Indirect hernia was seen in 15 cases and right sided hernia with 46.67 being the most frequent type.
- In our study 30 cases each underwent laparoscopic hernia repair while 30 cases Underwent L.T.F hernioplasty. They were randomly chosen for the different surgeries.
- Severe pain was complained in 2 cases of Lichtenstein hernioplasty and 1 case of laparoscopic hernia repair
- Post- operative mesh infection developed in 1 case of TAPP repair. Seroma was noted in 2 cases of L.T.F and 1 TAPP case at the operated site and a wound dehiscence noted in 1 L.T.F case. 3 cases in L.T.F group had urinary retention in immediate post operative period.
- The duration of hospitalization was 7.5 days in case of Lichtenstein hernioplasty were as 5.67 days in case of laparoscopic hernia repair.
- 1 case recurred in each hernia repair group and stresses for the prolonged follow up requirement.

Repair of inguinal hernia is one of the commonest operations performed by surgeons around the world. The treatment of this common problem has seen an evolution from the pure tissue repairs to the prosthetic repairs and in conventional open approach to laparoscopic approach. The fact that so many hernia repairs are practiced is a testimony to the fact that probably none is distinctly superior to the other. However, there is still no agreement about which operation is preferable in a given situation and the reported cumulative recurrence rate varies widely from 1% in special centers to more than 30%cited in reviews. Quality assessment of hernia surgery is essential. It is necessary for education and for evaluation of new methods. For surgeons and surgical units, quality assessment is necessary for improving and defending achievements.

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