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"An Observational Study of Lichtenstein Tension Free Hernioplasty"

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Abstract: *The aim of the present study is to comprehensively determine the feasibility of using Prolene(polypropylene) mesh for open tension free Lichtenstein hernioplasty on inguinal hernias. Patients and methods: This is a hospital based observational study* comprises *of 200 patients presenting with inguinal hernia attending OPD /admitted to various surgical units of Government Siddhartha medical college, Vijayawada during November 2017 to November 2019. Results: Lichtenstein tension free mesh plasty repair is a very much cost-effective method in the open inguinal hernia repair with minimal post-operative pain, lesser rates of complications, hospital stay, less incidence of chronic groin pain and recurrence rates when performed by qualified, skilled and competent surgeons. conclusion:Patient acceptance with Lichtenstein tension free Hernioplasty repair is good. Hence the repair of inguinal hernia with the Lichtenstein tension free Hernioplasty appears to be a safe and a feasible procedure in our Indian population with lower rates of complications, recurrence and late symptoms.*

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I. Introduction:

Inguinal hernia is one of the most common surgical problems worldwide. Several surgical techniques have been implemented for inguinal hernia repair, using both the open and laparoscopic approaches. Tension free techniques became the gold standard for hernia repair. A wide variety of prosthetic biomaterials have been utilized to abolish tension associated with pure tissue repairs and to restore the integrity of the inguinal canal floor by stimulating fibro collagenous tissue ingrowth.

Inguinal hernia repair by Lichtenstein Tension free Hernioplasty is one of the common surgeries performed routinely. This study aims at studying the effectiveness of this surgery in hernia repair to arrive at a conclusion as to be one of the best modalities of treatment available.

II. Aims & Objectives Of Study:

- To determine the feasibility of using the Prolene (polypropylene) mesh for open tension free Lichtenstein hernioplasty on inguinal hernias and study the results in terms of
- Duration of the performed surgery
- Duration of hospital stay
- Time taken to resume normal daily activities
- Post-operative complications
- Recurrence

Source of data: This observational study comprises of 200 patients presenting with inguinal hernia attending OPD /admitted to various surgical units of Government Siddhartha medical college, Vijayawada during November 2017 to June 2019.

After routine investigations, patients were informed about the surgical technique and advantages of the polypropylene mesh. In those patients who agreed, consent was taken and patients were prepared for surgery. Patients were subjected to Lichtenstein tension free mesh repair.

III. Results:

TABLE 1: EARLY POST OPERATIVE PAIN (VAS score):

EARLY POSTOP PAIN	24 HOURS	48 HOURS	72 HOURS
MINIMAL	20	96	183
MODERATE	173	104	17
SEVERE	7	-	-

Severe pain was present in only 7 cases (3.5%) and most of the patients, i.e., 173 (86.5%) had moderate pain during the first 24 hours. Majority of patients had minimal pain for 48 and 72 hours, i.e., 48% and 91.5%

TABLE 2: POST OPERATIVE COMPLICATIONS:

COMPLICATION	NO. OF CASES
HEAMATOMA	5
URINARY RETENTION	9
SEROMA	6
INFECTION	2
WOUND DEHISCENCE	-

Most common immediate post-operative complication was urinary retention comprising of 9 cases which accounted for 4.5 % of total no of cases. 6 cases (3%) had seroma, which was managed by aspiration & evacuation followed by compression dressing. 2 cases (1%) had wound infection, which was managed by daily dressing, antibiotics based on culture & sensitivity report.

TABLE 3: DURATION OF HOSPITAL STAY:

DURATION (DAYS)	2	3	4	5	6	7	>7
NO. OF CASES	16(8%)	47(23.5%)	54(27%)	40(20%)	24(12%)	11(5.5%)	8(4%)

Majority (58.5%) of patients had a hospital stay of 4 days or less.

IV. Discussion:

TABLE 4: Comparison of duration of surgery with other studies:

	Present study	**John P. Kuckelman et al 2016**	**A. Serdar Karaka et al 2015**	**T. Verhagen et al 2016**	**Janu P.G et al**	**Ashirwad Karigoudar et al 2016**
MEAN	75 ± 4.7	53.8 ± 31	53.7 ± 12	49	111 ± 2	43.3 ± 2.2

The mean duration of surgery was 75 minutes for Lichtenstein repair

This has been found to be less similar in other comparative studies done by A. Serdar Karaka et al 2015, T. Verhagen et al 2016, Ashirwad Karigoudar et al 2016 etc. The present study has its own limitations. A teaching hospital setting with trainee surgeons may show prolonged duration of surgery, the results thus being suboptimal whereas expert surgeons may attain superior results.

TABLE 5: Comparison of post-operative pain with other studies

STUDY	**Day 1 VAS-Mean**	**Day 2 VAS-Mean**	**Day 7 VAS-Mean**
C.S. Huang et all 2005(n=218)	3	2.19	0.77
world J S 2006 (n=56)	-	1.5	0.3
AJS,2007 (n =321)	-	2.5	2
J. Dalenback Et all 2009	3.5	2.5	2
Present study	**3.6**	**2.5**	**1.3**

In the present study, the severity of pain was comparable to the other studies done by C. S. Huang99 et al 2005, World J S 55 2006, AJS 60, 2007; J. Dalenbäck102 Et Al 2009 etc.

V. Summary & Conclusion:

The mean age of the patients presenting with inguinal hernia was 51.6 years with majority of patients in the age group of 51-60 years.

The most common presenting symptom was swelling alone accounting for 58% followed by swelling with pain 42%.

Right sided inguinal hernia (57%) was common compared to left (43%) with indirect inguinal hernia (63.5%) being more common than direct hernia.

Chronic cough and BPH causing straining symptoms were the most common associated factors in 17% and 10.5% of cases respectively.

The mean duration of surgery was 75 minutes.
Immediate post-operative pain was 3.6(mean) at 24hrs scored on a visual analogue scale.
Post-operative wound infection was seen in 2 cases (1%).
Post-operative seroma formation was seen in 6 cases (3%)
The mean duration of hospital stay was 4 days and the patients resumed normal activities by 9.84 days (mean) after Lichtenstein tension free Hernioplasty repair
None of the patient had chronic groin pain at 6 months follow-up.
Patient acceptance with Lichtenstein tension free Hernioplasty repair is good. Hence the repair of inguinal hernia with the Lichtenstein tension free Hernioplasty appears to be a safe and a feasible procedure in our Indian population with lower rates of complications, recurrence and late symptoms.

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