

Original Research Paper

BILATERAL INGUINAL HERNIA CLINICAL PROFILE AND MANAGEMENT IN RURAL TERTIARY CARE CENTRE- AN PROSPECTIVE INTERVENTIONAL STUDY**¹Dr Rajiv Sonarkar, ²Dr Avinash Babruwan Dhumal, ³Dr Nitin Wasnik**¹Associate Professor Department of Surgery NKPSIMS & RC & Lata Mangeshkar Hospital Nagpur²Senior Resident, Department of General Surgery, NKPSIMS & RC & Lata Mangeshkar Hospital Nagpur³Professor and HOD, Department of General Surgery, NKPSIMS & RC & Lata Mangeshkar Hospital Nagpur.

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ABSTRACT:

Background: The best approach for simultaneous repair of bilateral inguinal hernia is always controversial. Early and late outcome and chronic pain affecting quality of life and post operative minor and major complications and results vary with surgical techniques of stoppa's, lichtenstein, and laparoscopic TEP in bilateral inguinal hernia repair. **Aim and objectives:** The present study was done to know surgical Management and Outcome of bilateral hernia repair, in terms of chronic pain affecting quality of life, and effectiveness of stoppa's, lichtenstein, and laparoscopic bilateral hernia repair. **Material and Method:** The present study was a hospital based observational longitudinal study to clinical profile and management of bilateral inguinal hernia. The study was conducted over period of 2 years from November 2019 to October 2021 In department of general surgery, nkp sims & rc and lata mangeshkar hospital, rural tertiary care centre Nagpur. The study population was patients admitted in tertiary care centre presenting with clinical diagnosis of bilateral inguinal hernia with or without complications. A total sample size of 47 patients were included divided in to Group A is patient who undergoing Stoppa's Repair with Suction (closed) drain, Stoppa's Repair without Suction (closed) drain, Group B is patient who undergoing Bilateral Lichtenstein and Group C is patient who undergoing Lap TEP. **RESULTS:** It was observed that majority of patients were in age group 51-60 years (29.78%) followed by 41-50 years (21.27%). The mean age of the patients was 45.23 ±14.28 years. It was observed that majority of patients presented with swelling (100%) followed by abdominal dragging type of mild pain in (12.76%) which is due to large hernia, and vomiting in (6.38%) patients in two cases of irreducible hernia and one case of obstructed hernia present in indirect type of hernia, majority of patients had hypertension (23.4%) followed by diabetes mellitus (17.02%) and COPD (8.51%) having addiction of smoking. It was observed that out of 47 hernia, 18 (38.3%) were both direct, 12 (25.5%) were both indirect, 10(21.27%) were right direct with left indirect found, 7 (14.89%) were Left indirect right direct. Among 47 patients with bilateral inguinal hernias Bilateral Lichtenstein was done among 14 (29.78%) patients, Stoppa's Repair with Suction (closed) drain was done in 15 (31.91%) patients, Stoppa's Repair without Suction (closed) drain was done in 09 (19.14%) patients and Lap TEP was done in 9 (19.14%) patients. The mean operative time of surgery in Stoppa's repair (Group A), Bilateral Lichtenstein (Group B) and Lap TEP (Group C) among patients was 90.78 ±10.18, 122.72 ±14.23 and 98.32 ±8.72 minutes respectively with statistical significance. (P<0.05). The Seroma in Stoppa's repair without Suction (closed) drain (Group A) was more (26.6%) compared to Bilateral Lichtenstein (21.4%) and Lap TEP (11.1%) with statistical significance. (P>0.05). The post operative pain was seen maximum in patients operated by Bilateral Lichtenstein at different intervals without significant difference compared to Stoppa's repair (Group A) and Lap TEP (Group C). (P>0.05).The chronic pain after 3 months was observed only in patients operated by Bilateral Lichtenstein(7.2%) might be due to entrapment of nerve. Recurrence was not seen in any operated method. **Conclusion:** The present study concludes that, Stoppa's repair is a safe and effective method for repairing bilateral inguinal hernias, with less operational time, less postoperative chronic pain, less seroma formation, use of suction drain minimises surgical site collection and infection, early discharge from hospital, low recurrence rate, and high quality of life compared to Bilateral Lichtenstein Repair and Laparoscopic TEP repair.

Keywords: *Bilateral inguinal hernia, Stoppa's Repair, Laparoscopic TEP, Lichtenstein Repair.*

INTRODUCTION:

Hernia is defined as abnormal protrusion of a viscous or part of viscous through an defect in it's surrounding wall of the cavity in which it is contained^[1]. Most abdominal hernias are inguinal hernias, which account for 10 to 15 % of all general surgery procedures. Incidence rate of bilateral inguinal hernia is 6 to 8% of inguinal hernias^[2]. Patients with bilateral hernias are between the ages of 40 and 85 years, with the mean age is 45.23 ± 14.28 years. A wide range of data exists on the prevalence of bilateral inguinal hernias in adult males. Open repairs have a revision rate of 22%, while laparoscopic repairs have a revision rate of 32.2%–64%, according to an epidemiological survey conducted in the United States^[3]. We operated bilateral inguinal hernia by Stoppa's, Lichtensteins, and laparoscopic TEP are the most commonly used surgical procedures for bilateral inguinal hernias. Inguinal hernia repair using preformed mesh has gained wide acceptance. Conventional laparoscopic surgeries are compared with open surgery in terms of less immediate and chronic pain, quicker discharge from the hospital, earlier return to normal activity, and better cosmetic output compared to other hernia repair using synthetic mesh^[4]. Bilateral inguinal hernias can be treated with a single surgical procedure and single anaesthesia, and the preformed mesh is used on the transverse or pre-peritoneal fascia^[5]. Stoppa's is one of many methods commonly used in hernia repair. In Stoppa's repair mesh placement has the advantage of covering other weaker areas such as the femoral canal. A Pfannenstiel incision is used to gain access to preperitoneal space to separate the hernia sacs from the cord structure prior to mesh placement in the preperitoneal space^[6]. Major complications include bladder and bowel injury as well as, Neurovascular damage, hematoma, urine retention, seroma development, cord edema, wound infection, and testicular pain are all minor problems^[7]. The key to improving the quality and outcomes of all three procedures may lie in standardising surgical techniques and incorporating them into educational curricula. Hernias of the groin can be eliminated using a giant prosthetic reinforcement of the visceral sac described by Stoppa's et al In 1975^[8]. Laparoscopic hernia surgery is the primary treatment for bilateral & recurring inguinal hernias. Laparoscopic TEP repair appears to have superior outcomes than open mesh repair with respect to shorter postoperative hospital stay, lower postoperative pain, and a faster return to regular activity^[9]. It has become the standard procedure for repairing bilateral or unilateral inguinal hernias using the Lichtenstein tension-free repair method^[10]. Other examples include "previously repaired contralateral hernia," "Before the examination, the patient had identified a bilateral hernia." or "hernia was detected during index hospital

admission." Moreover, the term "bilateral inguinal hernias" encompasses these situations^[3].

AIM AND OBJECTIVES:

The present study was done to know surgical Management and Outcome of bilateral hernia repair, in terms of chronic pain affecting quality of life, and effectiveness of stoppa's, lichtenstein, and laparoscopic bilateral hernia repair.

MATERIALS AND METHODS:

STUDY DESIGN: The present study was a hospital based observational longitudinal study. **STUDY DURATION:** The study was conducted over period of 2 years from November 2019 to October 2021. **STUDY PLACE:** Department of General Surgery, NKP SIMS & RC And Lata Mangeshkar Hospital Nagpur. **STUDY POPULATION:** The study population was patients admitted in tertiary care centre presenting with clinical diagnosis of bilateral inguinal hernia with or without complications. **IEC CONSIDERATION:** The study was approved by the Ethical Committee of the institute. Ethics committee Re-Registration No. ECR/88/Inst/MH/2013/RR-19 Registration No-12019. **Informed consent:** A written informed consent was obtained from all patients who are part of research. **SAMPLE SIZE:** By keeping the confidence limits at 95% and power of study at 80%, to detect a minimum of 10% difference in proportion of effect, a total sample size of 47 patients were included. **Sample Size Estimation:** The sample size was calculated use formula; $n = \frac{[DEFF * Np(1-p)]}{[(d2/Z21-\alpha/2*(N-1)+p*(1-p)]}$. Population size (for finite population correction factor or fpc) (N) : 200, Hypothesized % frequency of outcome factor in the population $n_{95\% \pm (p)}$: 5, Design effect (for cluster surveys-DEFF) : b1, Confidence level (%) : 95%, Sample size : 47 (approximate) Result from open Epi, version 3, open source calculator-SS Proper. Hence, a minimum sample size of approximately 47 cases during study period was included in present study.

INCLUSION CRITERIA:

1. Patients with clinical diagnosis of Bilateral inguinal hernia. With and without complications.
2. All patients with fitness for surgery.

EXCLUSION CRITERIA:

1. Ascites,
2. Scrotal abdomen,
3. Major obstructive uropathy.

SURGICAL MANAGEMENT: Patients diagnosed with bilateral inguinal hernia were admitted in tertiary care centre. Choice of surgery was decided by the treating surgeon.

METHODOLOGY:

All the patients were investigated for basic investigations like CBP, Urine analysis, RBS, LFT,

RFT, ECG, CXR and ultrasound scan of abdomen were performed. Among 47 patients with bilateral inguinal hernias Group A(n=24) is patient who undergoing Stoppa's Repair with or without Suction (closed) drain patients, Group B(n=14) is patient who undergoing open Bilateral Lichtenstein was done among patients, and Group C(n=9) is patient who undergoing Lap TEP.

1. STOPPA'S REPAIR:

The technique developed by Stoppa was used. Patients received spinal anesthesia with antibiotic prophylaxis. The abdomen was opened by Pfannenstiel incision. Subcutaneous fat and rectus sheath were opened. Both recti separated in the midline. Dissection of the preperitoneal space was performed from the retropubic space to the rectus abdominis muscles and iliopsoas

laterally, extending to the retroinguinal space. Spermatic cord and gonadal vessels were identified. Superior pubic rami, obturator foramens, and iliac vessels were visualized. Small direct sacs were dissected and reduced. Large sacs were ligated with a purse-string suture and removed. Indirect sacs were divided, the proximal part was sutured, and the distal part was left in-situ attached to the cord. If indirect hernia was sliding, dissection of the sac from the cord structures was performed. Parietalization of the spermatic cord and gonadal vessels was performed by dissection of their peritoneal attachment. The polypropylene mesh of size 30×30 cm was placed in the preperitoneal space and fixed inferiorly to the pubic symphysis, Iliopubic tract and laterally to the iliopsoas muscle. The wound was closed in layers with a drain or no drain.



Fig 1: CLINICAL PICTURE OF BILATERAL INGUINAL HERNIA



FIG 2: PFANNENSTIEL INCISION GIVEN IN STOPPA'S REPAIR

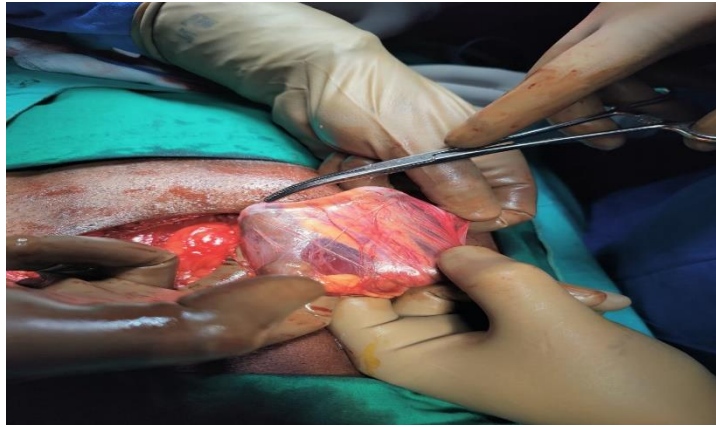


Fig 3: DISSECTION OF RIGHT CORD STRUCTURE FROM HERNIAL SAC IN STOPPA'S REPAIR



Fig 4: PLACEMENT OF MESH IN PREPERITONIAL SPACE IN STOPPA REPAIR



Fig 5: SUCTION (CLOSED) DRAIN IN AN OPERATED CASE OF STOPPA REPAIR

2. LICHTENSTEIN REPAIR:

The inguinal skin incision was made 0.5 inch above and parallel to the inguinal ligament from above and lateral to the pubic tubercle to below and medial to the anterior superior iliac spine. External oblique opened

along the direction of fibres, Type of hernia noticed, The indirect sac was dissected, ligated using Vicryl 2/0 and sectioned. The large direct sacs were invaginated and plicated using Vicryl 2/0. After Posterior wall repair done then Prolene mesh of 7×15 cm was used in

all cases. The mesh was fixed in place using polypropylene 2/0. The mesh was fixed down to the inguinal ligament and up to the conjoint tendon from the pubic tubercle to beyond the orifice of the internal ring.

3. LAPAROSCOPIC TEP REPAIR:

General anesthesia was administered to all patients. Patients were positioned on the operation table in supine position. All patients received ceftriaxone 1g IV intraoperatively. The surgical site was shaved just before the operation, and the skin was prepared with 10% povidine-iodine solution. A 2-cm vertical infraumbilical incision was made, and the ipsilateral anterior rectus sheath was opened. The rectus muscle was retracted laterally, and the space between the rectus muscle and posterior rectus sheath was enlarged by blunt digital dissection to allow insertion of a 10-

mm trocar with a balloon dissector in the preperitoneal space to the pubic bone. After replacing the balloon with a Hasson trocar, CO₂ was insufflated up to 14mm Hg, and a 30° laparoscope was introduced via a 10-mm trocar. After 2 trocars had been introduced at the midline between the umbilicus and pubis into the preperitoneal space, anatomical landmarks including the os pubis, the retropubic space of Retzius, Cooper's ligament, and the space of Bogros were identified by laparoscopy. After dissecting free and retracting the hernial sac, a 15×10cm polypropylene heavy weight mesh equipped with a horizontal slit was inserted into the preperitoneal space, covering the inguinal floor and the spermatic cord, and fixed by titanium helical tacker to the groin margins through the 5-mm port. CO₂ was desufflated, and the anterior rectus sheath was closed with 2-0 polyglactin.

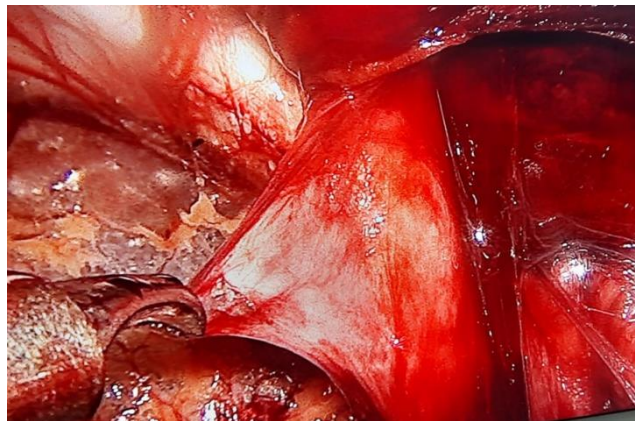


Fig 6: Dissection of Right cord structures from hernial sac in laparoscopic TEP



Fig 7: PREPERITONIAL PLACEMENT OF MESH IN LAP TEP

Postoperative period:

Patients were assessed for intraoperative **difficulties, and early and chronic postoperative pain using the visual analogue scale (VAS)**^[11]. And the need for

postoperative analgesia. Minor complications including neurovascular injury, scrotal hematoma, retention of urine, seroma formation, cord edema, wound infection, and testicular pain are noted. Major

complications such as bladder and bowel injury. The sutures were removed after 1 week, and the patients were discharged.

Follow-up:

Patients were followed up every month for the first 3 months and then after 3 months in the outpatient clinic to look for recurrence. Patients were totally followed up for a period of 1 year.

Statistical analysis:

Statistical analysis was performed using the statistical package for the social sciences, version 20.0 software (SPSS Inc., Chicago, Illinois, USA). Significance level was set at P value of less than 0.05. Qualitative data were described using number and percent. Quantitative data were described using range (minimum and maximum), mean, SD, and median. Comparison between different groups in terms of categorical variables was performed using the χ^2 -test.

OBSERVATIONS AND RESULTS:

Table 1: Age Distribution

Age group (years)	No. of cases
<20	02
21-30	04
31-40	07
41-50	10
51-60	14
61-70	08
>70	02
Total	47

The table above illustrates the age distribution of patients. It was observed that majority of patients were in age group 51-60 years (29.78%) followed by 41-50

years (21.27%). The mean age of the patients was 45.23 ± 14.28 years. There were 47 patients in total, all of whom were men. (100%)

Table 2: Distribution of Symptoms

Symptoms	No. of cases (n=47)	Percentage
Swelling	47	100
Abdominal Pain	06	12.76
Vomiting	03	06.38

The above table described distribution of patients according to symptoms. It was observed that majority of patients presented with swelling (100%) followed by abdominal dragging type of mild pain in (12.76%) which is due to large hernia, and vomiting in (6.38%)

patients in two cases of irreducible hernia and one case of obstructed hernia present in indirect type of hernia, no patient is present with strangulated or incarcerated hernia.

Table 3: Associated co-morbidities Distribution

Co-morbidities	No. of cases (n=47)	Percentage
Hypertension	11	23.40
Diabetes Mellitus	08	17.02
COPD	04	8.51

The above table described distribution of patients according to co-morbidities. It was observed that majority of patients had hypertension (23.4%)

followed by diabetes mellitus (17.02%) and COPD (8.51%) having addiction of smoking.

Table 4: Age wise distribution of direct and in direct hernia

Age group (years)	No. of cases	Both direct	Both Indirect	Right direct left indirect	Right indirect left direct	No. of Hernias
<20	02	00	00	01	01	04
21-30	04	00	02	01	01	08
31-40	07	03	01	02	01	14
41-50	10	05	02	01	02	20
51-60	14	07	04	02	01	28
61-70	08	03	02	02	01	16
>70	02	00	01	01	00	04
Total	47	18	12	10	07	94

The above table described age wise distribution of direct and indirect hernia. It was observed that out of 47 hernia, 18 (38.3%) were both direct and 12 (25.5%) were both indirect.

Table 5: Operated Distribution

Operation		No. of cases	Percentage
Stoppa's Repair (A)	With Suction (closed) drain	15	31.91
	Without Suction (closed) drain	09	19.15
Bilateral Lichtenstein (B)		14	29.79
Lap TEP (C)		09	19.15
Total		47	100

The above table described distribution of patients according to operation. Among 47 patients with bilateral inguinal hernias, Stoppa's Repair with Suction (closed) drain was done in 15 (31.91%) patients, Stoppa's Repair without Suction (closed) drain was done in 09 (19.14%) patients Bilateral

Lichtenstein was done among 14 (29.78%) patients, they are presented with bilateral inguinal hernia out of which 8(57.14) operated simultaneously bilaterally and 6 (42.85) patient operated in other surgery working unit in another setting after 3 months.

Table 6 Association of risk factors among Operated groups

Risk factors	Group A (n=24)	Group B (n=14)	Group C (n=09)	P value
Mean age	42.05 ±8.72	44.72 ±10.1	41.48 ±8.7	0.71 (NS)
Strenuous work	11 (45.8)	06 (42.8)	04 (44.4)	071 (NS)
Smoking	08 (33.3)	05 (35.7)	04 (44.4)	0.68 (NS)
Chronic cough	03 (12.5)	03 (21.4)	02 (22.2)	0.81 (NS)

The above table described comparison of risk factors among Operated groups. The mean age of surgery in Stoppa's repair (Group A), Bilateral Lichtenstein (Group B) and Lap TEP (Group C) among patients was 42.05 ±8.72, 44.72 ±10.1 and 41.48 ±8.7 years respectively by using **Anova test** with no statistical

significance. (P>0.05)The above also table described risk factor for bilateral inguinal hernias like strenuous work, smoking and chronic cough shows no significant difference between Stoppa's repair (Group A), Bilateral Lichtenstein (Group B) and Lap TEP (Group C). (P>0.05)

Table 7: Mean operative time among different operated groups

Operative time (min)	Group A	Group B	Group C	P value
Mean	90.78	122.72	98.32	0.03 (S)
SD	10.18	14.23	8.72	

The above table described mean operative time among different Operated groups. The mean operative time of surgery in Stoppa's repair (Group A), Bilateral Lichtenstein (Group B) and Lap TEP (Group C)

among patients was 90.78 ±10.18, 122.72 ±14.23 and 98.32 ±8.72 minutes respectively by using **Anova test** with statistical significance. (P<0.05)

Table 8: Immediate post operative complication among different groups

Complications	Group A Without Suction (closed) drain (n=15) (%)	Group A With Suction (closed) drain (n=9) (%)	Group B (n=14) (%)	Group C (n=9) (%)	P value
Seroma formation	04 (26.6)	00	03 (21.4)	01 (11.1)	0.02 (S)
Cord edema	5 (33.3)	00	04 (28.6)	00	0.48 (NS)
SSI	00	00	01 (7.2)	01 (11.1)	0.63 (NS)
Wound dehiscence	00	00	00	00	-
Cuticular necrosis	00	00	00	00	-

The above table described immediate post operative complication among different Operated groups. The Seroma in Stoppa's repair without Suction (closed) drain (Group A) was more (26.6%) compared to Bilateral Lichtenstein (21.4%) and Lap TEP (11.1%) with statistical significance. (P>0.05)The other

complications like Cord edema, SSI shows no significant difference between Stoppa's repair (Group A), Bilateral Lichtenstein (Group B) and Lap TEP (Group C). (P>0.05). Other complication like urinary retention, hematoma formation is not seen any patient.

Table 9: Post operative pain among different groups at different intervals

Intervals	Group A (n=24)	Group B (n=14)	Group C (n=9)	P value
Immediate post-operative	03 (12.5)	06 (42.8)	01 (11.1)	0.09 (NS)
After 10 days	02 (8.33)	04 (28.6)	02 (22.2)	0.46 (NS)
After 1 month	00	02 (14.2)	00	0.18 (NS)
After 3 months	00	01 (7.14)	00	0.32 (NS)

The above table described post operative pain among different groups at different intervals. The post operative pain was seen maximum in patients operated

by Bilateral Lichtenstein at different intervals without significant difference compared to Stoppa's repair (Group A) and Lap TEP (Group C). (P>0.05)

Table 10: Delayed Post operative complications among different groups

Complications	Group A (n=24)	Group B (n=14)	Group C (n=9)	P value
Recurrence	0	0	0	--
Chronic pain after 3 months	0	1 (7.2%)	0	0.32 (NS)

The above table described delayed post operative complication among different Operated groups. The chronic pain after 3 months was observed only in patients operated by Bilateral Lichtenstein (7.2%) might be due to entrapment of nerve. The other delayed complication of recurrence was not seen in any operated method.

farmers. In a study by Gamal Al-Shemy et al^[14]. on bilateral Lichtenstein hernioplasty observed majority of patients were laborer.

In the present study, majority of patients had hypertension (23.4%) followed by diabetes mellitus (17.02%) and COPD (8.51%) having addiction of smoking. In a study by Gamal Al-Shemy et al^[14]. on bilateral Lichtenstein hernioplasty observed hypertension and diabetes mellitus among 12.5% patients each. Yasser Hussein et al^[13] in a study observed no significant difference between both groups regarding the preoperative data like comorbidity.

DISCUSSION:

Yasser Hussein et al^[13] compared techniques Stoppa's versus bilateral Lichtenstein for repair of bilateral hernia observed no significant difference between both groups regarding the preoperative data like age with mean age of 44.33 ± 7.0 and 43.23 ± 9.0 years respectively. This finding was similar to present study. In a study by Gamal Al-Shemy et al^[14]. on bilateral Lichtenstein hernioplasty observed mean age of 42 years among the patients. Ogbuanya AU et al^[15]. studied outcomes of bilateral inguinal hernia observed ages mean age of 56.21 ± SD 15.26. This was slightly more than present study.

The distribution of patients according to their addictions showed that majority of patients had smoking addiction (36.17%) followed by alcohol (23.40%). Out of 17 patients with smoking addiction 4 patient had COPD. In a study by Gamal Al-Shemy et al^[14]. On bilateral Lichtenstein hernioplasty observed smoking among 37.5% patients. This was in accordance to present study. Yasser Hussein et al^[13] in a study observed smoking among 27.15% patients. Ogbuanya AU et al^[15] studied the incidence and repair outcomes of More than one-third (119, 38.6%) of the patients with bilateral inguinal hernia had comorbid illnesses, while some had two or more, resulting in a total of 182 linked medical disorders. Other concomitant diseases were found in 11 of the 39 patients with systemic hypertension, as well as 14 of the 34 patients with benign prostatic hyperplasia (BPH).

The distribution of patients according to their sex showed out of 47 patients all were males. (100%) Yasser Hussein et al^[13]. in a study observed no significant difference between both groups regarding sex. All patients were male in the study. This finding was in accordance to present study. In a study by Gamal Al-Shemy et al^[14]. on bilateral Lichtenstein hernioplasty observed all patients were male. Ogbuanya AU et al^[15]. studied the incidence and repair outcomes of bilateral inguinal hernia observed among 308 patients there were 302 males and six females, giving a male-to-female ratio of 50:1.

The mean age of surgery in Stoppa's repair (Group A), Bilateral Lichtenstein (Group B) and Lap TEP (Group C) among patients was 42.05 ± 8.72, 44.72 ± 10.1 and 41.48 ± 8.7 years respectively with no statistical significance. (P>0.05) In a study by Gamal Al-Shemy et al^[14]. on bilateral Lichtenstein hernioplasty observed there were no statistically significant differences between both groups with respect to age. Yasser Hussein et al^[13]. in a study observed no significant difference between both groups regarding the preoperative data like age with mean age of 44.33±7.0 and 43.23±9.0 years respectively. This finding was similar to present study.

In the present study, it was observed that majority of patients presented with swelling (100%) followed by abdominal dragging type of mild pain in (12.76%) which is due to large hernia, and vomiting in (6.38%) patients in two cases of irreducible hernia and one case of obstructed hernia indirect type, no patient is present with strangulated or incarcerated hernia. It was observed that majority of patients were farmers (44.47%) followed by labourer (29.78%) shopkeeper (14.89%) and student (10.63%). Yasser Hussein et al^[13]. in a study observed majority of patients were

The risk factor for bilateral inguinal hernias like strenuous work, smoking and chronic cough shows no significant difference between Stoppa's repair (Group A), Bilateral Lichtenstein (Group B) and Lap TEP (Group C). ($P>0.05$) In a study by Gamal Al-Shemy et al^[14]. on bilateral Lichtenstein hernioplasty observed smoking (76.6%), obesity (10%), chronic obstructive pulmonary disease (20%) and benign prostatic hypertrophy (20%). Gamal Al-Shemy et al^[14]. found that There is a strong correlation between direct inguinal hernias and acquired causes (ageing, neuromuscular and aponeurotic injuries, and increased intra-abdominal pressure) that has been documented (chronic cough, chronic urinary obstruction from urethral stricture or prostatic hypertrophy, chronic constipation, heavy manual work, and weight lifting).

In the present study, the mean operative time of surgery in Stoppa's repair (Group A), Bilateral Lichtenstein (Group B) and Lap TEP (Group C) among patients was 90.78 ± 10.18 , 122.72 ± 14.23 and 98.32 ± 8.72 minutes respectively with statistical significance. ($P<0.05$) Koc et al^[11] stated in a comparative study between both techniques that Stoppa's procedure took significantly shorter time than bilateral Lichtenstein repair. This finding was in accordance to present study. Sasso et al^[12] carried out a study to evaluate simultaneous repair of bilateral inguinal hernia by Lichtenstein procedure and reported a mean operative time 113 ± 19.3 min, that was significantly similar to present study. Yasser Hussein et al^[13] in a study observed operating time was significantly increased from 55 minutes for the L group versus 75 minutes for the S group ($P < 0.05$). This finding was in contrast to present study. It may be due to they were not familiar with the Stoppa's procedure.

The post operative complication like Seroma formation in Stoppa's repair without Suction (closed) drain (Group A) was more (26.6%) compared to Bilateral Lichtenstein (21.4%), Lap TEP (11.1%), Stoppa's repair with Suction (closed) drain with statistical significance. ($P>0.05$) There is significant benefit of drain in Stoppa's repair. The other post operative complications like Cord edema, SSI shows no significant difference between Stoppa repair (Group A), Bilateral Lichtenstein (Group B) and Lap TEP (Group C) ($P>0.05$), other complication like hematoma, retention of urine are not seen

The post operative pain was seen maximum in 1. patients operated by Bilateral Lichtenstein at different intervals without significant difference compared to Stoppa's repair (Group A) and Lap TEP (Group C). ($P>0.05$) The chronic pain after 3 months was observed only in patients operated by Bilateral Lichtenstein. (7.6%) might be due to entrapment of 2. nerve. The other delayed complication of recurrence was not seen in any operated method. Yasser Hussein et al^[13] in a study observed recurrences were observed

in 2 patients of 30 (6.5%) of the contacted patients in L group without any significant difference. Koc et al^[11] stated that stoppa's procedure is superior to bilateral Lichtenstien technique regarding long term follow up and complications with any statistical difference. M. S. Ray et al^[7] studied and conclude that stoppa's novel technique has given excellent results. They recommend Stoppa's repair for recurrent and multicurrent abdominal hernias, large Incisional and bilateral inguinal hernia. Manoj Kumar et al^[12] studied and concluded that for bilateral inguinal hernia repair, lap TEP is a superior option than Stoppa's repair in terms of surgery time and early postoperative morbidity. This was in contrast to present study. In addition to avoiding the need for a second anaesthetic and procedure, simultaneous bilateral inguinal hernia surgery can minimise psychological stress and save money by allowing patients to work less and eliminate the possibility of incarceration or handicap caused by the hernia on the opposite side. Dual inguinal hernia repair is a hot-button issue for some.

LIMITATIONS OF STUDY: The current study is an Prospective intervention study aiming at analysing the clinical profile and management of bilateral inguinal hernia. The sample size was limited because of COVID-19 pandemic. A greater sample size could have provided more insights on clinical profile and management. Some patient lost to follow up after 3 month which would have provided more details on long-term outcomes of patients.

CONCLUSION- The present study concludes that, Stoppa's repair is a safe and effective with less chronic pain and high quality of life method for repairing bilateral inguinal hernias, with less operational time, less postoperative pain, less seroma formation, use of suction drain minimises surgical site collection and infection, early discharge from hospital, low recurrence rate compared to Bilateral Lichtenstein Repair and Laparoscopic TEP repair.

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Conflicts of interest - There are no conflicts of interest.

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