*International Journal of Multidisciplinary Research and Modern Education (IJMRME)*
*ISSN (Online): 2454 - 6119*
*(www.rdmodernresearch.org) Volume I, Issue I, 2015*

# SIMULTANEOUS BILATERAL INGUINAL HERNIA REPAIR BY THE LICHTENSTEIN TECHNIQUE

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**Abstract:**

Approximately 75% of all abdominal wall hernias are seen in the groin.*Recurrences have been a significant problem following hernia repair. Prosthetic materials have been increasingly used in hernia repair to prevent recurrences. The present study analyzes the results ofsimultaneous bilateral inguinal hernia repair by the Lichtenstein technique.*

**Method:** 48 patients who underwent elective simultaneous bilateral inguinal hernia repair between January 2001 and January 2015 were analyzed on basis of gender, age, weight, operative time, length of hospital stay, Nyhus Classification of hernia and complications. These data were submitted to descriptive statistical analysis.

**Result:** Of 48 patients' with96 inguinal hernias,95% were men. Age ranged from 40 to 70 years, weight 58 to 110 kg. Operative time varied from 60 min to 180 min, hospital stay 1 to 8 days. 38 patients had Type III B hernia, 6 were Type II, 7were Type III A, 4 were Type IV one had Type II on the left and Type III B on right. In the immediate postoperative period, pain was the most important manifestation in 26.2% patients. The operating time for simultaneous hernia was 76 minutes as mean time when operated by two surgeons concurrently. 93.75% of cases there were no complications. There were three cases (3.13%) of inguinodynia and two complications of recurrences (2.08%)

**Keywords**: Nyhus Classification, Bilateral Inguinal Lichtenstein Repair, Recurrences, Complications,

## 1. Introduction:

Inguinal hernia is the most common surgical disease of the abdominal wall [1]. It occurs in approximately 1.5% of the general population and in 5% of males [2]. Inguinal hernia is more common in men in 5$^{th}$to 6$^{th}$ decades of life. [3] [4]. Of the inguinal hernias the most common are the indirect predominantly unilateraland on the right side. The bilateral are rarer, affecting about 12% of patients, the direct and the combined ones.It was believed that bilateral inguinal hernias could not be corrected simultaneously, since such approach resulted in a high rate of recurrence [6] [7].

In the literature there are few studies that report the results of the simultaneous repair of bilateral inguinal hernias by the Lichtenstein technique. Recurrence following simultaneous repair of inguinal hernia is a significant problem for both the surgeon and the patients. There is evidence that a defect in the metabolism of collagen is involved in the pathogenesis of inguinal hernia leading to a weakening of the transversals fascia. Usher proposed the use of high-density polyethylene to repair tissue defects. [8][9].

American College of Surgeons choose Lichtenstein repair technique as ''gold standard'' [10], while National Institute of Clinical Excellence [NICE] from U.K.[11] and National Agency for Accreditation and Evaluation in Health [NAAEH] from France [12] recommended Lichtenstein repair for inguinal hernia repair has easy learning curve, reasonable recurrence and complication rates and suitability in cost effectiveness motivated the present work which aims to analyze the safety and efficacy of bilateral inguinal hernia repair by Lichtenstein Technique, in the early and late postoperative periods. [13] [14] [15]. Today inguinal hernias can be treated with very low

complication rates. Open tension free repair by Lichtenstein operation can be performed under local anesthesia in safe and economic ways [16] [17].

**2. Material Method:**

Data were collected from 48 patients undergoing bilateral inguinal hernia repair by the Lichtenstein technique between January 2001 to January 2015 in Anupama Nursing Home, Patna and Nalanda Medical College & Hospital Patna. The clinical parameters were defined and type of hernia according to Nyhus classification noted individually Total of 96 hernias were evaluated.. Operating time, hospital stay, early as well as late complications and recurrences statistically recorded as prospective Cohort Study. The procedures and techniques were explained to the patients and attendants through computerized presentation. Informed consent was taken after complete understanding by the patients.Those who agreed to participate in the study were sampled after signing (literate) or putting their thumb impression (illiterate). Preoperative 1gm of intravenous Cefazolin administration done ½ hour before surgery yielded a low infection rate. Light weighted mesh was used to improve patient comfort. Bilateral eversion of sac done to prevent future hydrocele formation through the inguinal route incision. Data analysis was performed using descriptive statistics to calculate the mean, following variables: Gender, age, weight, type of hernia according to Nyhus Classification, duration of operation, hospital stay, complications and recurrences.

**3. Result:**

Of the 48 operated patients, 95% were male, 68% were in the age group 40-70 years Mean (53.5 SD ±10.4). Weight ranged from 58Kg to 110 Kg Mean 68.9 SD± 9.96).The clinical classification of the type of hernia according to Nyhus showed Type III B Hernia 61.46%.The minimum time taken for completion of the procedure was 60 minute and maximum 185 minutes Mean 76,(SD ± 26.3) The concurrent surgeons operating on the patients reduced the operating time to 76-98 minutes. Hospital stay ranged from 3- 10 days, (Mean 3.5, SD ±0.97).Immediate postoperative period complained of pain.The duration of postoperative follow up ranged from 24 month to 120 month (Mean 60 SD±17.6). During follow up it was found that 2 patients 2.08% had recurrence where Transection of the cord and canal closure was advised after proper consent. 3 patients 3.13% complained with inguinodynia

**Table1. Simultaneous Bilateral Inguinal Hernia Narayan Series**

| NYHUS CLASSIFICATION | | RIGHT | LEFT | TOTAL | % |
|---|---|---|---|---|---|
| Type I | | | | | |
| Type II | | 7 | 6 | 13 | 13.54 |
| Type III | A | 8 | 8 | 16 | 16.67 |
| | B | 29 | 30 | 59 | 61.46 |
| Type IV | | 4 | 4 | 8 | 8.33 |
| TOTAL | | 48 | 48 | 96 | 100% |

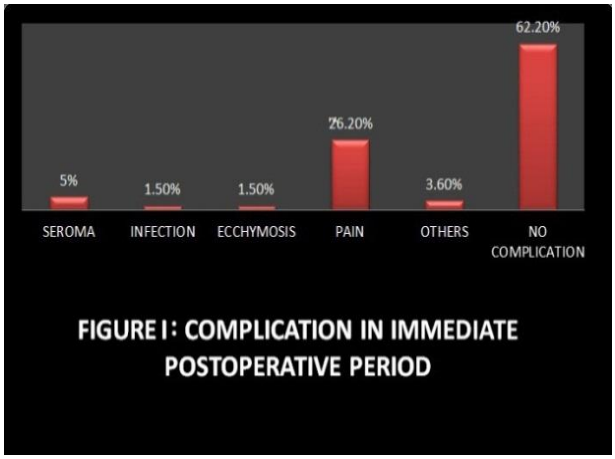


FIGURE I: COMPLICATION IN IMMEDIATE POSTOPERATIVE PERIOD

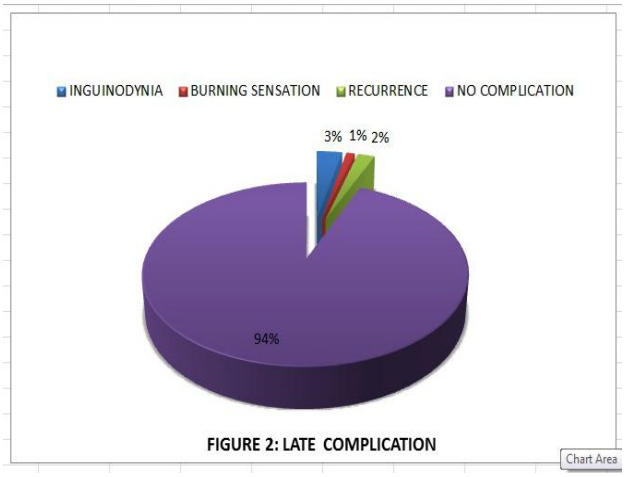


FIGURE 2: LATE COMPLICATION

## 4. Discussion:

Simultaneous repair of bilateral inguinal hernia by Lichtenstein technique is safe cost effective and the advantages well exceed their potential risk of complication. Surgical correction of bilateral inguinal hernia in one sitting is designed to allow only one hospital admission, one anesthesia and definitive resolution of the disease and minimize psychological stress and reduce the time away from work and family life.The patients in this study stayed in hospital on overage for 3-4 days following surgery. Miller et al reported a mean hospital stay of 6.4 days. [18]Serpell et al reported a hospital stay ranging from 2-12 days when assessing the results of this work with the literature it is observed that the hospital stay was signification lower in my patients.[19] One anesthetic avoids greater exposure to anesthesia and to anesthetic complications. Only one surgical procedure aims at being the ultimate solution for the patients, which decreases hospital costs and cost effective to patients.The operative time of a bilateral hernia is greater than of the one sided. With evolution of anesthesia and better per operative care, operative time could be reduced by simultaneous approach by two operating surgeon. The average operative time in our case was 76 min. According to Dakkuri et al, although the time for the simultaneous repair is 50% greater, costs of the procedure increase by 18% by simultaneous repair of inguinal hernia repair with significant reduction in operating time, and significant reduction in hospital costs. The operating time is dependent on the learning curve and better trained teams perform procedures faster. Thus the attempt to shorten the operating time may be beneficial in the elderly and other patients who have associated diseases [20].

The Lichtenstein technique is considered to be tension-free, with reduced recurrence rate compared with techniques that uses tissues from the region to correct the hernia defect. The model proposed by Nyhus takes into account points as the site of the hernia in the inguinofemoralregion the type of hernia (direct/indirect, primary orreurrent) and features of floor of the inguinal canal. However in the literature there is no specific descriptionof bilateral group, the literature describes higher frequency of both combined hernia and direct types. However in the present study, the number of cases of indirect hernia was nearly four times greater than the direct type.In the immediate postoperative period 62.2% patients had no complications. Pain 26.2% & Seroma 5% were the most frequent. In hernia correction there are described complication of urinary retention, scrotal hematoma, urinary tract infection, wound infection,even cardiac arrhythmia and DVT, neuralgia, testicular atrophy, hydrocele and infection, orchitis, testicular edema, hematoma and seroma local inflammation and

painIn late postoperative period 93.75% patients in this study had no complication. Three patients (3.13%) complained ofinguinodynia and 1(1.04%) of burning pain on the site.Solorzano et al concluded that chronic pain can occur in about 20-30% of patients undergoing unilateral inguinal hernia repair.Post et al said the lower density meshes multifilament appear to be preferable for the Lichtenstein operation as these meshes produce more proinflamatory mediators than monofilament ones and less pain. Nonetheless they are associated with greater foreign body sensation [21] [22].My mean follow-up after surgery was 60 month. Two (2.08%) patient had a relapse when examined at 26 months post operatively. Sarli et al found 4.3% recurrence among 43 patients. Kark et al observed less than 1% recurrence in 199 patients.[23]. Amid et al reported 1% recurrence in 1000 individuals.Hidalgo et al reported no hernia recurrence in 55 patients.[24] The result of this study show that recurrence of (2.08)% is within the limits reported by the literature. Relapses are possibly related to the number of patients and length of follow up. Furthermore, Vianna et al emphasize that 40% of recurrences occur within five years and 20% after 25 years of the primary operation.The account for the failure of the operation technique was insufficient fixation of the mesh mainly in its medial position to the pubic tubercle and deficiency of collagen in the transversals fascia.

**5. Conclusion:**

The success can be attributed to the experience of the surgical team and features of both patients and meshes.There is a consensus that Lichtenstein technique gives good result regarding the immediate and late postoperative period and is effective and give low number of relapses. In conclusion, simultaneous repair of bilateral inguinal hernias by the Lichtenstein technique was safe and effective, since there was a lower complication rate; short hospital stay and only two recurrences at an average of 60 month follow up

Conflict of interest : None
Source of funding : None
Ethical Issue : None

**6. Acknowledgement:**

The author acknowledges the immense help received from the scholars whose articles are cited and included in references of this manuscript. The author is also grateful to authors/ editors/ publishers of all those articles, journals and books from where the literature of this article has been reviewed and discussed. The author is thankful to **Padma Shri**, **Prof. Narendra Prasad,** F.R.C.S Ex Head, Department of Surgery, Patna Medical College and Director, Anupama Nursing Home Patna for his blessing and guidance in the completion of this work. The author is indebted to **Prof. P. S. Sinha,** Associate Professor Department of Surgery N.M.C.H Patna. The author is thankful to **Anmol Narayan** for analysis and graphic presentation.

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