

### TO EVALUATE THE POST OPERATIVE OUTCOME OF INGUINAL HERNIA REPAIR BY NEWER DESARDA TECHNIQUE AND THE CONVENTIONAL LICHTENSTEIN REPAIR TECHNIQUE

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#### Abstract

**Background:** The Desarda Technique of inguinal hernia repair is reported to be physiology, free from foreign body and cost-effectiveness with relatively less complications. The aim is to evaluate the post-operative outcome of inguinal hernia repair by Newer Desarda technique and the conventional Lichtenstein repair technique. **Materials and Methods:** The longitudinal study was conducted in the surgery OPD of our institute. A total of 92 subjects participated in this study. Postoperatively the subjects were evaluated on every 02 hour on the day of surgery, followed by first, second, third and seventh POD. In each follow-up the gait was assessed and pain was measured on visual analog score (VAS) and Sheffield scale. **Result:** Inguinal hernia is more prevalent in males. 58 patients were from low socioeconomic class, and 63 patients were diagnosed as right-sided inguinal hernia, and only 3 patients were diagnosed as bilateral. Post operatively, mild pain was reported by 36, 62, and 84 subject on first, second and third POD respectively, whereas moderate pain was reported by 56, 30 and 8 subjects respectively. Post-operative complaint was noticed in only 6 patients, of those 3 patients had infection, 2 had seroma, and only 1 had hematoma. On an average the subjects returned to their basic life activity within 2-3 days, daily home activity within 7-8 days and returned to work within 18-20 days. **Conclusion:** The technique is more physiological, cost effective, foreign body free, and therefore the use may be extended to another similar surgical repair.

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## INTRODUCTION

The inguinal hernia is the most common hernia found in both genders but much more common in males compared to females.<sup>[1]</sup> The estimated incidence of inguinal hernia in lifetime for males and females is 27% and 3% respectively.<sup>[2]</sup> Surgical management of inguinal hernia is an elective, widespread and simple procedure. The most frequently preferred surgery for the cases of inguinal hernia is Lichtenstein repair. Lichtenstein mesh repair technique, though very popular, carries some limitation, that includes-additional financial burden, limited availability at many places worldwide, tendency to distort and dislodge, and chronic groin infection including sepsis. The infected mesh and/or mesh site requires immediate surgical intervention and may require mesh removal too. Owing to the a significantly high number of cases with complications and postoperative problems associated with Lichtenstein mesh repair technique, the surgical world started to explore for an alternative inguinal hernia repair

technique. A tissue-based groin hernia repair technique “Desarda method of inguinal hernia repair” was presented in 2001. The Desarda Technique has gained popularity very fast and has become the most preferred technique for inguinal hernia repair.<sup>[3]</sup> This new technique make use of a strip of external oblique aponeurosis as an alternative to a prosthetic mesh for strengthening of the posterior wall. The advantages of this technique includes – no prosthetic mesh, does not use weak muscle, long lasting, and comparatively safe and simple. Cost effective treatment factor has also proven to be the principle reason for choosing this technique, especially in low socio economic regions.

Therefore, the present study was designed to evaluate the result of inguinal hernia repair by Desarda method and Lichtenstein repair.

## MATERIALS AND METHODS

**Study Setting:** This was a prospective, longitudinal, comparative, unicentric, study. The study was

conducted in the department of general surgery, at Lord Buddha Koshi Medical College and Hospital, Saharsa. The study was conducted over a period of 15 months from March 2019 to May 2020. All study participants were counseled. An informed and written consent was obtained from the participating subjects before the commencement of the study.

All the subjects reporting to the surgery OPD of our institute, diagnosed for inguinal hernia and willing to participate over the study duration were included in the study. A total of 92 patients matching the inclusion and exclusion criteria were recruited for the study.

**Inclusion Criteria:** uncomplicated inguinal hernias were included in our study.

**Exclusion Criteria:** Recurrent inguinal hernia, not willing to participate.

**Study Design:** The patient demography was recorded in a pre-structures data sheet. All base line investigation was done at least 24 hours before the scheduled surgery. All surgeries were done under regional anesthesia under the supervision of a trained anesthetist.

On the First Post Operative (POD), all the patients were administered with intra- muscular diclofenac, followed by oral diclofenac for the next 4-5 days.

Post operative pain was assessed using a visual analog score (VAS) and Sheffield scale.

Sheffield scale	
0	no pain
1	no pain at rest but it appears during movement
2	temporary pain at rest and moderate during movement
3	constant pain at rest and severe during movements

Postoperatively the subjects were evaluated on every 02 hour on the day of surgery, followed by first, second, third and seventh POD. In each follow-up the gait was assessed and pain was measured on visual analog score (VAS) and Sheffield scale. The routine activity was advised as per patient's ability and comfort.

Further the patient follow up was scheduled for evaluation after 1 month, 3-month, 6-month, 12 month and 24 months. At each follow-up routine physical examination and assessment of the patient was done.

The primary outcomes were measured as recurrence of hernia and long chronic pain. Pain was scored as moderate (VAS 30–54) or as strong (VAS >54). The secondary outcomes were measured as local complications and general complications, duration of time to return to normal activity and abdominal stiffness in the groin region.

#### Operative Procedure

For Desarda technique, a 1- to 2-cm strip of external oblique aponeurosis lying over the inguinal canal was isolated from the main muscle while it remained attached both medially and laterally. Then, a medial incision was made along the medial crus of superficial ring in external oblique aponeurosis, and another incision was made on external oblique

aponeurosis leaving a 1.5–2 cm of strip. Further, the medial end of the strip was sutured with conjoint tendon using nonabsorbable 1/0 prolene suture material and lateral end with inguinal ligament, which reinforced the posterior wall of the inguinal canal.

#### Statistical Analysis

The data was tabulated in a Microsoft excel sheet, and was subjected to statistical analysis using SPSS software programs.

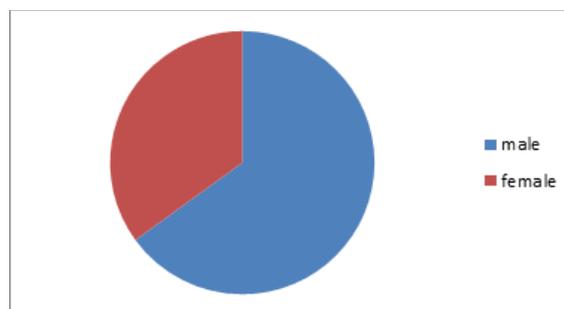
## RESULTS

A total of 92 subjects participated in this study to evaluate the outcome of two inguinal hernia repair technique. The participating subjects were in the age range of 21–65 years with a mean age of  $45.42 \pm 10.08$  years.

**Table 1: Distribution of subjects in age group. (n=92)**

Age Group	Male	Female
20-30	3	2
31-40	9	6
41-50	28	14
51-60	15	7
61-65	5	3
Total	60	32

Majority of patients were in the 41–50 years age group. Inguinal hernia is more prevalent in males. [Figure 1]



**Figure 1: Distribution of male and female.**

Of the 92 subjects studied 58 patients were from low socioeconomic class, and 63 patients were diagnosed as right-sided inguinal hernia, and only 3 patients were diagnosed as bilateral. Post operatively, mild pain was reported by 36, 62, and 84 subject on first, second and third POD respectively, whereas moderate pain was reported by 56, 30 and 8 subjects respectively. [Table 2].

**Table 2: Distribution of subjects as per Postoperative pain**

POD	Number of patient with pain	
	Mild	Moderate
First POD	36	56
Second POD	62	30
Third POD	84	8

Post-operative complaint was noticed in only 6 patients, of those 3 patients had infection, 2 had seroma, and only 1 had hematoma [Table 3].

**Table 3: distribution of subjects according to post operative complaints**

Parameters studied	Number of patients
Scleroderma	
7 days	3
30 days	2
6 months	0
Testicular atrophy	0
Inguinal hematoma	1
Ecchymosis	3
Seroma	2
Surgical site infection	3

A total of 46 subjects showed ascription towards normal gait on the second POD and 39 subjects gained the same on third POD, this was statistically very significant. The number of subjects discharged on the 2<sup>nd</sup> or 3<sup>rd</sup> POD was 73, and only 05 subjects stayed in hospital for 05 days or more. On an average the subjects returned to their basic life activity within 2-3 days, daily home activity within 7-8 days and returned to work within 18-20 days. As much as 90 subjects had no complaint of chronic pain, and 91 subjects had no recurrence.

## DISCUSSION

The Desarda method of inguinal hernia was introduced in the year 2001, and is considered to be more physiological due to its tissue-based repair method. This new technique proposed by Desarda overcomes the drawback of Lichtenstein technique and fulfils the criteria of no tension. In this technique the aponeurotic strip is used to strengthen the posterior wall of inguinal canal, without additional tension to the posterior wall.<sup>[4,5]</sup>

The current study evaluated 92 subjects to assess the outcome of Desarda technique and Lichtenstein technique, in terms of Postoperative day complications. The study result of the present study shows that, a majority of subjects (n=36) reported Mild pain on the first POD while by the 3<sup>rd</sup> postoperative day almost no patient (n=84) had felt even mild pain. This finding was similar to the study done in Africa.<sup>[6]</sup>

A pain lasting for more than 3 months is considered as chronic pain. Only 06 subjects in our study had chronic pain. Our study report was in consonance with the previous study report of Roy et al.<sup>[7]</sup>

A few associated complications of Desarda technique of inguinal hernia repair includes - Infection at the site of surgery, hematoma. Seroma and the recurrence of hernia. The complication rate in our study was similar to previous study.<sup>[8]</sup>

The current studied also shows that, almost all patient attributed towards the normal gait by the second and 3<sup>rd</sup> POD. A total of 73 subjects were discharged by the 2<sup>nd</sup> or 3<sup>rd</sup> POD, and only 05 subjects stayed in hospital for 05 days or more due to early infection at the surgical site. Other previous study of Desarda technique reveals similar attribution of normal gait.<sup>[8]</sup> In our study, on an average the subjects returned to

their basic life activity within 2-3 days, daily home activity within 7-8 days and returned to work within 18-20 days. A similar type study report was also found in another study.<sup>[3]</sup>

In our study, 90 subjects had no recurrence, and only 1 subject developed recurrent inguinal hernia. In a follow-up study of Desarda method, no recurrence was observed.<sup>[9]</sup>

The material cost added to the surgical charge adds burden to the patients. The Desarda technique is more physiologic and cost effective too. This is the reason many recent researchers highlighted their interest in this technique.<sup>[6,10,11]</sup> The low cost of Desarda technique is due to non-utilization of synthetic prosthesis. Financial constrains are the major issue to adopt Desarda technique. The other reason includes controversies regarding use of synthetic material in young patients.<sup>[3]</sup>

## CONCLUSION

The newer and physiological repair technique showed a very good outcome. Based on the results, the technique has the potential to expand in other repair techniques as well. Young patients are the first indications for using Desarda technique. Financial constraints hold an equivalent position.

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