

## A study to evaluate desarda vs lichtenstein technique for the treatment of primary inguinal hernia

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### Abstract

**Background:** Inguinal hernias rank among the commonest of all hernias and surgery is the only definitive treatment. The present study was conducted to evaluate desarda vs lichtenstein technique for the treatment of primary inguinal hernia. **Material and methods:** This prospective, observational study was conducted to evaluate desarda vs lichtenstein technique for the treatment of primary inguinal hernia. The study includes 60 patients of primary inguinal hernia. The patients were divided into two equal groups (30 patients for each group): Lichtenstein mesh-based repair (A group) or Desarda tissue-based repair (B group). Statistical analyses were done by using SPSS 22.0 (Statistical Package for the Social Sciences by SPSS Inc., Chicago, IL, USA, 2017). **Results:** The study includes 60 patients of primary inguinal hernia. The patients were divided into two equal groups (30 patients for each group): Lichtenstein mesh-based repair or Desarda tissue-based repair. The mean operating time required for repair was more in Lichtenstein mesh-based repair (36.45min) while time taken by Desarda tissue-based repair was less(20.58min). Post-operative pain was assessed by visual analogue scale (VAS). The mean pain score at 1st POD in Lichtenstein mesh-based repair was 5.01 and 2.56 in Desarda tissue-based repair. The mean pain score at 3<sup>rd</sup> POD in Lichtenstein mesh-based repair was 3.45 and 2.21 in Desarda tissue-based repair. Seroma occur in 10% patients in Lichtenstein mesh-based repair and in 6.66% patients in Desarda tissue-based repair. Testicular/cord odema occur in 13.33% patients in Lichtenstein mesh-based repair and in 6.66% patients in Desarda tissue-based repair. Minor SSI occurs in 6.66% patients in Lichtenstein mesh-based repair and in 3.33% patients in Desarda tissue-based repair. Foreign body sensation occurs in 7% patients in Lichtenstein mesh-based repair and in 0% patients in Desarda tissue-based repair. Chronic pain occurs in 13.33% patients in Lichtenstein mesh-based repair and in 6.66% patients in Desarda tissue-based repair. **Conclusion:** The present study concluded that mean operating time required for repair, post-operative pain score, post operative complications were less in Desarda tissue-based repair.

**Keywords:** desarda, lichtenstein technique, Inguinal hernias.

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### Introduction

Inguinal hernia is defined as a protrusion of the contents of the abdominal cavity or preperitoneal fat through a hernia defect in the inguinal area, irrespective of whether this is preformed[1]. Inguinal hernia is a very common illness and its incidence rises with age and more common in male. Its incidence is 386 for men and 44 for female per 100000 population[2]. The estimated lifetime risk for inguinal hernia is 27% for men and 3% for women[3]. Mesh-based Lichtenstein technique (LT) was strongly recommended (level IA) by the European Hernia Society for treatment of primary inguinal hernia in adult men after a thorough analysis of the results of several clinical trials[1]. LT, introduced in 1984, is widely used and is often touted as the gold standard of different open mesh techniques, probably owing to its ease of application, resultant tension-free repairs, and lower recurrence rates[1]. In 1887, Edoardo Bassini first proposed repairing the inguinal canal with silk stitches suturing the conjoined transversus abdominis and internal oblique with the transversal is fascia to the inguinal ligament, which is the first sound technique for the repair of inguinal hernia.

The ideal operation to treat inguinal hernia which would be simple, does not require mesh implantation with acceptable low recurrence rates and complications during or after surgery and could be done by non-consultant staff is still far to define. So a question remains: are there any other tissue-based techniques effective in inguinal hernia repair other than the Shouldice technique[4]. In 2001, Desarda introduced a new novel technique of a tissue-based hernia repair with zero% recurrence rates in his hands[5]. Moreover, as reported by its developer, the technique requires no complicated dissection or suturing, no mesh is needed and easy to learn[6,7]. The present study was conducted to evaluate desarda vs lichtenstein technique for the treatment of primary inguinal hernia.

### Material and methods

This prospective, observational study was conducted to evaluate desarda vs lichtenstein technique for the treatment of primary inguinal hernia. The Study was carried out in Sri Krishna Medical College and Hospital, Muzaffarpur, Umanagar, Bihar in department of general surgery during from Feb 2019 to sep 2021. The study was approved by ethical committee of the institute. Informed consent was obtained from all participating patients after explaining the purpose of this study. The study includes 60 patients of primary inguinal hernia. The patients were divided into two equal groups (30 patients for each group): Lichtenstein mesh-based repair or Desarda tissue-based repair. All patients were subjected to preoperative evaluation including history taking, clinical examination, and basic laboratory

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investigations. All patients of both groups were operated under subarachnoid block with preoperative 1 gram ceftriaxone as prophylactic antibiotics. The Lichtenstein tension free mesh repair was done by standard procedure described in European Hernia Society guideline[1]. A 7.5x15 cm polypropylene was tailored to fit as a tension free repair with good overlap. Fixation was done using nonabsorbable 3-0 polypropylene suture. EOA was closed Tissue based technique was performed according to the original description of Mohan P. Desarda[6]. The inventor of the technique had modified his own action later on. In 2008, he started to use continuous absorbable suture (No 1 PDS) instead of interrupted suture with nonabsorbable monofilament (1-0 Polyamide)[8]. We did the modified procedure with 1-0 polyglactin 910 (vicryl ®) as a suture material of choice. Patients were allowed to oral feeds 6 hours after surgery. All patients of both groups received Diclofenac sodium suppository eight hourly as an analgesic of choice up to 2nd post operative day (POD) and then on demand. Intensity of pain was measured on Visual Analogue Scale (VAS) daily and checks dress with evaluation of seroma, haematoma or minor SSI was done on 2nd and 3rd POD. Patients were discharged on 3rd POD when they could perform basic activity. Few patients stayed couple of days more for pain, discomfort or wound related events. Data were analyzed by Independent Student't' test (continuous variable) & Chi-square test (categorical variable). Statistical significance was considered as  $p < 0.05$ . Statistical analyses were done by using SPSS 22.0 (Statistical

Package for the Social Sciences by SPSS Inc., Chicago, IL, USA, 2017).

### Results

The study includes 60 patients of primary inguinal hernia. The patients were divided into two equal groups (30 patients for each group): Lichtenstein mesh-based repair or Desarda tissue-based repair. The mean operating time required for repair was more in Lichtenstein mesh-based repair (36.45min) while time taken by Desarda tissue-based repair was less(20.58min). Post-operative pain was assessed by visual analogue scale (VAS). The mean pain score at 1st POD in Lichtenstein mesh-based repair was 5.01 and 2.56 in Desarda tissue-based repair. The mean pain score at 3<sup>rd</sup> POD in Lichtenstein mesh-based repair was 3.45 and 2.21 in Desarda tissue-based repair. Seroma occur in 10% patients in Lichtenstein mesh-based repair and in 6.66% patients in Desarda tissue-based repair. Testicular/cord odema occur in 13.33% patients in Lichtenstein mesh-based repair and in 6.66% patients in Desarda tissue-based repair. Minor SSI occurs in 6.66% patients in Lichtenstein mesh-based repair and in 3.33% patients in Desarda tissue-based repair. Foreign body sensation occurs in 7% patients in Lichtenstein mesh-based repair and in 0% patients in Desarda tissue-based repair. Chronic pain occurs in 13.33% patients in Lichtenstein mesh-based repair and in 6.66% patients in Desarda tissue-based repair.

**Table 1: Comparison of mean operating time (minutes) only for repair**

	Lichtenstein mesh-based repair Mean±SD	Desarda tissue-based repair Mean±SD	P value
Mean operating time (minutes)	36.45±5.34	20.58±3.16	< 0.05

**Table 2: Comparison of post-operative pain by VAS**

Variable	Lichtenstein mesh-based repair Mean±SD	Desarda tissue-based repair Mean±SD	P value
VAS at 1st POD	5.01±1.23	2.56±2.11	< 0.05
VAS at 3 <sup>rd</sup> POD	3.45±1.22	2.21±0.68	

**Table 3: Post-operative complications**

Postoperative complication	Lichtenstein mesh-based repair N(%)	Desarda tissue-based repair N(%)	P value
Early			< 0.05
Seroma	3(10%)	2(6.66%)	
Testicular/cord odema	4(13.33%)	2 (6.66%)	
Minor SSI	2(6.66%)	1(3.33%)	
No complication	21(70%)	25(83.33%)	
Late			
Foreign body sensation	7(%)	0(0%)	
Chronic pain	4(13.33%)	2(6.66%)	
Recurrence	0(0%)	0(0%)	

### Discussion

Prior to the European Hernia Society (EHS) recommendations of 2009, 2 guidelines regarding hernia repairs were lacking. The EHS guidelines have provided clarity and direction to many facets of hernia repair, particularly to the choice of repair[1].

The study includes 60 patients of primary inguinal hernia. The patients were divided into two equal groups (30 patients for each group): Lichtenstein mesh-based repair or Desarda tissue-based repair. The mean operating time required for repair was more in Lichtenstein mesh-based repair (36.45min) while time taken by Desarda tissue-based repair was less(20.58min). Post-operative pain was assessed by visual analogue scale (VAS). The mean pain score at 1st POD in Lichtenstein mesh-based repair was 5.01 and 2.56 in Desarda tissue-based repair. The mean pain score at 3<sup>rd</sup> POD in Lichtenstein mesh-based repair was 3.45 and 2.21 in Desarda tissue-based repair. Seroma occur in 10% patients in Lichtenstein mesh-based repair and in 6.66% patients in Desarda tissue-based repair. Testicular/cord odema occur in 13.33% patients in Lichtenstein mesh-

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Chronic groin pain after hernia repair with mesh was reported to range from 28.7% to 43.3%[9].

Results of 13 systematic review show seroma after open mesh versus open non-mesh is 2.04% vs 1.6%; OR 1.52[10].

The rate of wound infection in mesh vs non-mesh technique of inguinal hernia surgery is found 3.4% vs 2.8% in a systematic review of 16 trials[11].

However, Desarda, in a clinical trial in small district hospital in India, comparing his technique to Lichtenstien repair reported no recurrence in his technique versus 4 recurrences in the mesh group[12].

Some have therefore concluded that the Desarda repair has the potential to become the new gold standard particularly in low- and middle-income countries[13].

#### Conclusion

The present study concluded that mean operating time required for repair, post-operative pain score, post operative complications were less in Desarda tissue-based repair.

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