

Study on Desarda versus Lichtenstein Repair for Inguinal Hernia: A Teaching Hospital Based Study.

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Abstract

Background: Hernia repair is one of the most commonly performed general surgical procedures worldwide. **Subjects and Methods:** A total of 46 Patients admitted to the surgical department with the diagnosis of primary inguinal hernia according to inclusion and exclusion criteria. **Results:** Mean operative time taken for total surgery in Desarda group was significantly shorter when compared to Lichtenstein group. No operative or post-operative mortality was detected in this study. **Conclusion:** Desarda repair had cost effective technique with significantly lower operative time, early return to basic and work activity, shorter hospital stays and less post-operative pain than Lichtenstein repair.

Keywords: Inguinal hernia complications, Lichtenstein repair and Desarda repair.

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Introduction

Inguinal hernias an important health problem with an estimated prevalence of 7%.^[1] The estimated lifetime risk for inguinal hernia is 27% for men and 3% for women.^[2] Annual morbidity rates in various countries vary from 100 to 300 per 100,000 citizens.^[3] Hernia repair is one of the most commonly performed general surgical procedures worldwide. Several techniques have been employed in the treatment of inguinal hernias since Bassini first described his method in 1887. The techniques range from tissue-repairs such as modified Bassini, Shouldice, Nylon-Darn, Halsted-Tanner, and McVay, to the tension-free hernioplasty that involve the use of a mesh implant over the past 20 years Hernia surgery has become increasingly more complex not only due to the introduction of novel endoscopic but also conventional, techniques.^[4] Professor Mohan P. Desarda technique for inguinal hernia repair is a new tissue-based method with application of the external oblique muscle aponeurosis in the form of an undetached strip (which makes the posterior wall of the inguinal canal stronger) has been considered as a new method in tissue based hernia repair.^[5] Aim of this present study was to be the compare Desarda versus Lichtenstein repair for inguinal hernia.

Subjects and Methods

This present study was conducted in the Department of Surgery, Varun Arjun Medical College & Rohilkhand

Hospital, Banthra, Shahjahanpur, Uttar Pradesh, India. A total of 46 Patients admitted to the surgical department with the diagnosis of primary inguinal hernia according to inclusion and exclusion criteria during the period from September 2015 to January 2017. Out of forty six patients, 23 included patients who had a Desarda repair and other 23 included patients who received a Lichtenstein repair. The Ethics Committee of Rohilkhand Hospital approved this study and informed consent was obtained from each patient before start of the study. Primary outcomes measured were recurrence and chronic pain. Secondary endpoints were the severity of pain after surgery, operative time, intraoperative complications, postoperative complications and hospital stay. Pain was reported using visual analog scales. All patients were given one shot of antimicrobial prophylaxis (1.0 g 1st generation cephalosporin IV 30 min before surgery). All operations were carried out under regional anesthesia The Lichtenstein tension-free mesh repair was performed as described by Amid.^[4] An 8×12 cm polypropylene mesh (Prolene; Ethicon, Somerville, NJ, USA) was trimmed to fit the inguinal floor. The mesh was sutured to the ligament of Poupart using a non-absorbable continuous 2/0 suture (Prolene; Ethicon) and secured cranially using an absorbable 2/0 suture (Maxon; Covidien, Mansfield, MA, USA). The Desarda repair was performed as it was originally described in 2001.⁵ Continuous nonabsorbable suture (2/0 Prolene; Ethicon) was used to suture the aponeurotic strip to the inguinal ligament laterally, and the strip was sutured medially to the internal oblique muscle with interrupted, absorbable sutures (2/0 Maxon; Covidien). Patients were examined by a surgical

resident not involved in the study until discharge and seen during follow-up appointments at 7, 30 days, and 3, 6, 12, 24 and 36month after surgery. Recurrences and other complications were recorded. The Pain was measured using a visual analog scale, which ranged from 0 (no pain) to 10 (maximum, unbearable pain). Student's t-test and Chi-square test were used to compare variables. A p value of <0.05 was considered significant.

Results & Discussion

A total of forty six patients who underwent inguinal hernia repair were included in the study. Of these patients, 23 underwent Deserda repair and other 23 underwent Lichtenstein repair. In the Deserda and Lichtenstein repair groups, the mean ages were 40.31 ± 2.87 and 42.01 ± 3.55 , respectively, and the male patients constituted 93.5% and 6.5%, respectively. [Table 1] shows the patient's demographic data and hernias characteristic and revealed that the age, sex, BMI, and hernia characteristic were not significantly different in both groups. Mean operative time taken for total surgery in Desarda group was significantly shorter when compared to Lichtenstein group.

Table 1: Patients' demographic and hernias characteristic in both groups

Variables	No. of patients(n=46)	
	Lichtenstein	Desarda
Age in years	42.01 ± 3.55	40.31 ± 2.87
Sex	Male	23
	Female	00
BMI	Normal	20
	Overweight	02
	Obese	01
Hernia site	Right	15
	Left	06
	bilateral	02
Nyhus classification	I	13
	II	07
	III(a)	02
	III(b)	01

Table 2: Shows the Intraoperative and post-operative finding

Variables	No. of patients(n=46)		P Value
	Lichtenstein	Desarda	
Operative time in minutes	72	61	0.2
Post-operative complications in days	10	5	0.76*
Hospital Stay	1.62	1.21	0.001
Return to basic activity	1.53	1.17	0.01
Return to work	14	10	0.001
Recurrence	1	0	0.65*

(Statistically Significant at p value <0.05; *NS: Statistically not Significant)

No operative or post-operative mortality was detected in this study. [Table 2] represents the intraoperative and post-operative finding. As regard intraoperative or post-operative complication there were no significant differences between both groups. The operative time and hospital stay were significantly shorter in Desarda group. Return to basic activity and work activity were also significantly faster in

Desarda than Lichtenstein group. Post-operative pain was measured using visual analogue score at post-operative day 1, 7, and six months after operation [Figure 1]. The assessment of postoperative pain at day 1 and day7 showed that Desarda group had significantly lower pain score than Lichtenstein group however there were no significant pain difference between both groups after 6 months. During follow up time there was one recurrence in Lichtenstein group during the 2-years and 11 month follow up period no recurrence was detected in Desarda group however there was no statistically detected difference in both group. No significant differences in clinical outcomes were observed during a 3-year follow-up of adultmale patients with a primary inguinal hernia operated on with either the Desarda or the Lichtenstein technique.

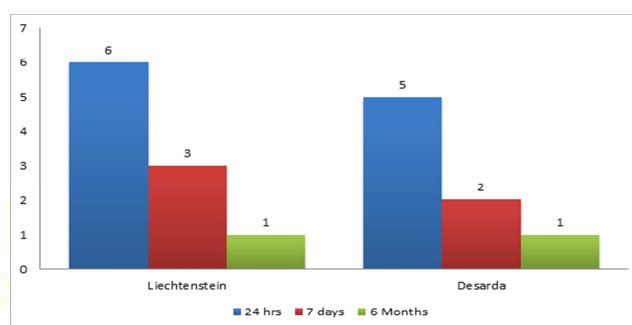


Figure 1: showing the pain score

In the EHS guidelines, mesh-based techniques—the Lichtenstein technique in particular—and endoscopic methods are recommended for treatment of symptomatic primary inguinal hernia in adult men. In a departure from this firm opinion presented by the EHS, the Shouldice method has been acknowledged to be acceptable as well.^[6] The synthetic prostheses most often used in the inguinal area can create new clinical problems, such as foreign body sensation in the groin, discomfort and abdominal wall stiffness, which may affect the everyday functioning of the patient.^[7] The observed complication rates and postoperative dysfunction have influenced many investigators to look for new hernia repair techniques or to modify old ones. An example of such efforts is the Desarda method, which was presented in 2001 and became a new surgical option for tissue based groin hernia repair.^[8,9] Currently, the results of hernia treatment, even those that have taken into account the EHS guidelines, vary from moderate to excellent. The mean recurrence rate for the standard Lichtenstein procedure is about 1% in herniaspecialized centers but can be much higher in community hospitals (about 4%), and the reported rate even reaches 18% in some articles.^[10] The results of this study this prospective randomized trial show significant advantages of Desarda repair as it had significant shorter surgical time and shorter hospital stay than Lichtenstein repair. It also reported that Desarda repair had faster return to basic and work activity compared to Lichtenstein group. To the best of authors' knowledge there are few randomized controlled studies comparing Desarda and Lichtenstein

repair. Youssef et al report that Desarda repair had Shorter operating time, early return to normal gait compared to Lichtenstein repair.^[11] Szopinski et al suggest that no significant differences in clinical outcomes between Desarda and Lichtenstein repair were observed during a 3-year follow-up.^[12] As regard recurrence rate there was one recurrence in Lichtenstein group versus no recurrence in Desarda group however, no significant recurrences between both groups was detected in present study this was comparable to the previous studies.^[11,12] Desarda, in a clinical trial comparing his technique to Lichtenstein repair reports no recurrence in his technique versus 4 recurrences in the mesh group.^[13] The early post-operative pain (day 1 and day 7) was significantly lower in Desarda group but no significant difference between both groups after 6 months. Other studies reported lower early post-operative pain in Desarda group however, it not reach significant level.^[12-14] In contrast to Szopinski et al who reported higher early post-operative pain in Desarda group however in another publication by them they reported no significant difference.^[15] Desarda repair not use meshes this decrease the cost, he postulates that his repair is physiological natural and dynamic using undetached strip of external oblique aponeurosis.^[16] The main limitation of the present study was relatively small number of patients this because this type of repair is uncommon in india in the future we hope to publish another study on a large number of patients. In my opinion, despite some methodologic inadequacies in the presented articles, the Desarda method merits more attention and further investigation by other authors.

Conclusion

These findings suggest that, the Desarda repair had cost effective technique with significantly lower operative time, early return to basic and work activity, shorter hospital stays and less post-operative pain than Lichtenstein repair. The result of present study supports the use of Desarda repair in this hospital as the method of choice for most of the patients due to low cost and recurrence rate, Simple repair as well as our limited resources. The most evident indications for use of the Desarda technique include use in young patients, in contaminated surgical fields, in the presence of financial constraints, or if a patient disagrees with the use of mesh.

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