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An Observational Comparative Study of Outcomes of Desarda's Tissue Repair with Outcomes of Lichtenstein's Tension Free Mesh Repair for Primary Uncomplicated Inguinal Hernia

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Abstract

Introduction: Inguinal hernia is very common surgical maladies of all time. Inguinal hernias remain an important medical problem because of their increased frequency. The estimated lifetime risk for inguinal hernia is 27% for men and 3% for women.

Aims and Objectives: To compare outcomes of Desarda's tissue repair and mesh-based Lichtenstein tension free hernia repair techniques in terms of

Immediate outcomes (0-10 days)

1. Time duration for surgery
2. Cost of consumables for surgery- suture materials and mesh
3. Doses of IV analgesics needed in the post-operative period
4. Wound complication
   a) Seroma
   b) Hematoma
   c) Infection
5. Duration of post-op hospital stay

Intermediate outcomes (1-2 months)

6. Pain in the surgical site

Delayed outcomes (>2 Months)

7. Recurrence at 6 months
8. Chronic pain at 6 months
9. Foreign body sensation.

Material and Method

Study design: Single center, prospective, observational

Place and area of study: Surgical Wards in a tertiary care centre of Central India

Duration of study: 2 years

Sample size: Total 70 cases - 35 Tissue Repair
- 35 Mesh Repair

Result: The mean age for the Desarda group is 51.86 ± 14.36 years, while the Lichenstein group has a mean age of 54.00 ± 14.77 years. The P value is 0.540, indicating

that there is no statistically significant difference in age between the two groups.

Discussion: In our study, the Desarda technique demonstrated outcomes comparable to those of the Lichtenstein method, with similar rates of recurrence and postoperative complications.

Keywords: Chronic Pain, Inguinal Hernias, Lichenstein, Mental Disorders, Surgical Site, Wound Complications

Introduction

Inguinal hernias remain an important medical problem because of their increased frequency. The estimated lifetime risk for inguinal hernia is 27% for men and 3% for women. 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. The Shouldice method has been acknowledged to be acceptable as well. The synthetic prostheses create clinical problems, such as foreign body sensation in the groin, discomfort, and abdominal wall stiffness, surgical-site infections, Migration of the mesh from the primary site of implantation in the abdominal cavity is one of the most dangerous complications, intense chronic inflammatory process around the mesh prosthesis may produce meshoma or plugoma, sexual function are seriously affected after surgical hernia treatment with mesh. The Desarda's method, which was presented in 2001 and became a new surgical option for tissue-based groin hernia repair. In this project we have compared the Desarda's repair with Lichtenstein's mesh repair and analyzed the results.

Aims and Objectives

Aim: To compare outcomes of Desarda's tissue repair and mesh-based Lichtenstein tension free hernia repair techniques in terms of

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16. Recurrence at 6 months
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Materials and Methods

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Sample size: Total 70 cases - 35 Tissue Repair
-35 Mesh Repair

Methodology

Approval was being taken from Institutional Ethics Committee for the study. 70 patients satisfying the inclusion-exclusion criteria admitted in the surgical wards of the hospital will be included in the study. As per institutional protocols, pre-operatively, patients will be administered 1 bolus dose of antibiotic Inj Ceftriaxone 30 mins prior to incision. Lichtenstein's mesh repair will be done according to the standard method described by Amid. Mesh soaked with gentamicin will be placed. Post-operatively, patients will

be given an antibiotic course of Inj Ceftriaxone BD for 2 days in the both the groups. All the patients in both the groups will be given Inj Diclofenac 75 mg as analgesic.

Institutional protocol is to routinely discharge post-op inguinal hernia patients 2-3 days after surgery. Stitch site dressing was checked once on the day of discharge for any SSI.

Patients were called for follow-up on the following days at regular intervals:

1. Post-op day (POD) 15 for stitch removal
2. 2 months after surgery to enquire about pain at the surgical site
3. 6 months after surgery to enquire about delayed complications
4. Any time after the surgery if the patient feels the need to follow-up with the surgeon

Recurrences, chronic pain and foreign body sensation observed from 2 months to a maximum of 24 months after the surgery. Then patients are observed for parameters as mentioned under the case proforma and co-relation is drawn between the occurrence of these post op events and the indices under study and a conclusion is hence drawn using bio-statistical methodology.

Inclusion criteria

1. Adult male
2. Age > 18 years
3. Willing to participate in the study
4. Primary inguinal hernia

Exclusion criteria

1. Female gender
2. Recurrent hernia
3. Complicated hernia
4. Mental disorders (not able to give consent)
5. History of a forced hernia reduction with subsequent hospitalization

Figure 1: Lichtenstein's tension free mesh repair

Figure 2: Desarda's repair

Result

The data are tabulated in Microsoft excel and analyzed with SPSS V.24 software. The continuous variables are presented with mean and standard deviation. The categorical variables are presented with frequency and percentage. Chi square test, independent t test are used for the statistical analysis. The p value ≤0.05 is considered statistically significant.

Table 1: Comparison of mean Age

Parameter	Group	Mean	SD	Range	P value
Age (years)	Desarda	51.86	14.36	27-78	.540
	Lichenstein	54.00	14.77	21-81	

In Table 1, the comparison of mean age between the Desarda and Lichenstein groups shows that the mean age for the Desarda group is 51.86 ± 14.36 years, while the Lichenstein group has a mean age of 54.00 ± 14.77

years. The P value is 0.540, indicating that there is no statistically significant difference in age between the two groups.

Table 2: Comparison of Age groups

Age groups		Group		Total
		Desarda	Lichenstein	
21-30 years	N	4	4	8
	%	11.40%	11.40%	11.40%
31-40 years	N	4	3	7
	%	11.40%	8.60%	10.00%
41-50 years	N	9	6	15
	%	25.70%	17.10%	21.40%
51-60 years	N	6	7	13
	%	17.10%	20.00%	18.60%
61-70 years	N	9	11	20
	%	25.70%	31.40%	28.60%
71-80 years	N	3	3	6
	%	8.60%	8.60%	8.60%
81-90 years	N	0	1	1
	%	0.00%	2.90%	1.40%

Table 2 compares age group distributions between the Desarda and Lichtenstein groups. For the Desarda group, 4 participants (11.40%) are in both the 21-30 and 31-40 age groups, 9 participants (25.70%) are in the 41-50 and 61-70 age groups, 6 participants (17.10%) are in the 51-60 age group, and 3 participants (8.60%) are in the 71-80 age group. There are no participants in the 81-90 age group. For the Lichtenstein group, 4 participants (11.40%) are in the 21-30 age group, 3 participants (8.60%) are in the 31-40 age group, 6 participants (17.10%) are in the 41-50 age group, 7 participants (20.00%) are in the 51-60 age group, 11 participants (31.40%) are in the 61-70 age group, 3 participants (8.60%) are in the 71-80 age group, and 1 participant (2.90%) is in the 81-90 age group. Overall, 8 participants (11.40%) are in the 21-30 age group, 7 participants (10.00%) are in the 31-40 age group, 15 participants (21.40%) are in the 41-50 age group, 13 participants (18.60%) are in the 51-60 age group, 20 participants (28.60%) are in the 61-70 age group, 6 participants (8.60%) are in the 71-80 age group, and 1 participant (1.40%) is in the 81-90 age group.

Graph 1:

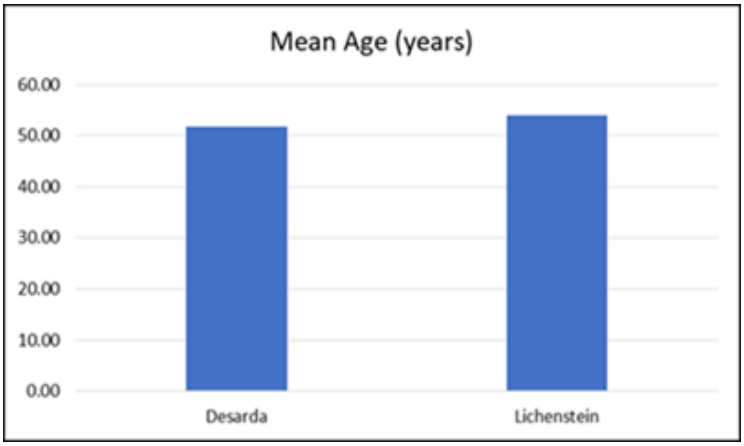


Table 3: Comparison of Time duration

Parameter	Group	Mean	SD	P value
Time duration (mins)	Desarda	94.43	19.39	.978
	Lichenstein	94.57	23.62	

Graph 2:

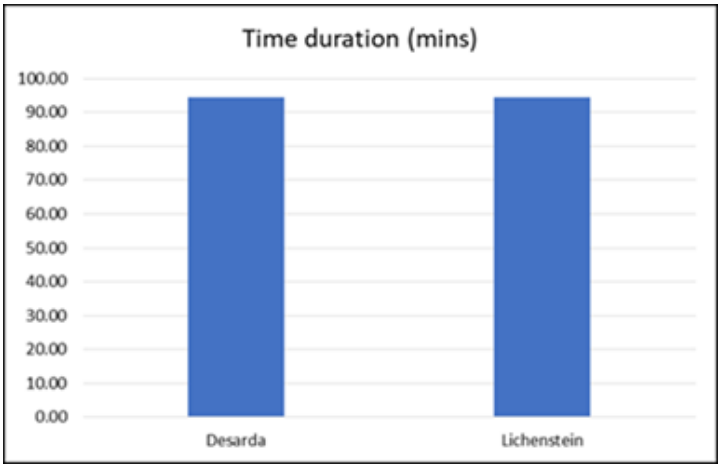
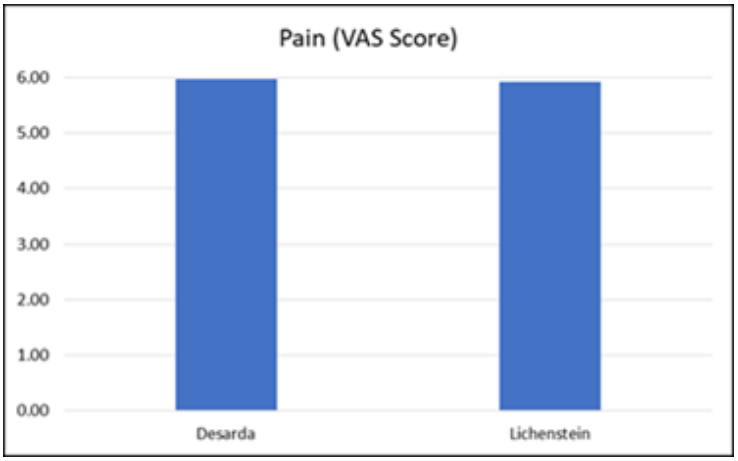


Table 3 compares the time duration of surgery between the Desarda and Lichenstein groups. The mean time duration for the Desarda group is 94.43 ± 19.39 minutes, while for the Lichenstein group, it is 94.57 ± 23.62 minutes. The P value of 0.978 shows no significant difference in the time duration of surgery between the two groups.

Table 4: Comparison of Pain according to the VAS score (Immediate post-op)

Parameter	Group	Mean	SD	P value
Pain (VAS Score)	Desarda	5.97	1.22	.855
	Lichenstein	5.91	1.38	

Graph 3:

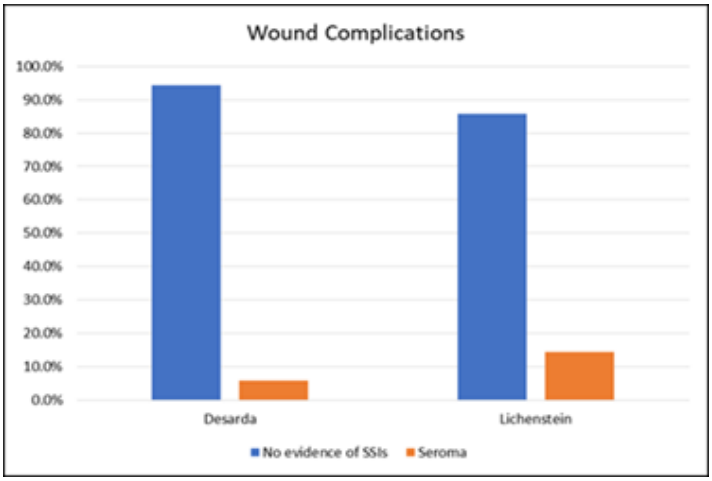


In Table 4, the comparison of pain (VAS score) between the Desarda and Lichenstein groups shows that the mean pain score for the Desarda group is 5.97 ± 1.22, while for the Lichenstein group, it is 5.91 ± 1.38. The P value of 0.855 indicates no significant difference in pain scores between the two groups.

Table 5: Comparison of Wound Complications

Parameter			Group		Total	P value
			Desarda	Lichenstein		
Wound Complications	No evidence of SSIs	N	33	30	63	.232
		%	94.3%	85.7%	90.0%	
	Seroma	N	2	5	7	
		%	5.7%	14.3%	10.0%	

Graph 4:



In Table 5, the comparison of wound complications shows that in the Desarda group, 33 individuals (94.3%) had no wound complications, and 2 individuals (5.7%) developed seroma. In the Lichenstein group, 30 individuals (85.7%) had no wound complications, and 5 individuals (14.3%) developed seroma. The total number of participants with no

wound complications is 63 (90.0%), and those with seroma are 7 (10.0%). The P value of 0.232 suggests no significant difference in wound complications between the two groups.

All SSIs were considered in the post-operative like seroma, hematoma mesh infection, injuries to bladder/testicles/vas deferens. However, the only complication seen in the post-operative period were seromas.

Table 6: Comparison of Surgical Site Pain (at 2 monthly follow-up)

Parameter	Group	Mean	SD	P value
Surgical Site Pain	Desarda	1.97	0.66	.152
	Lichenstein	1.74	0.66	

Graph 5:

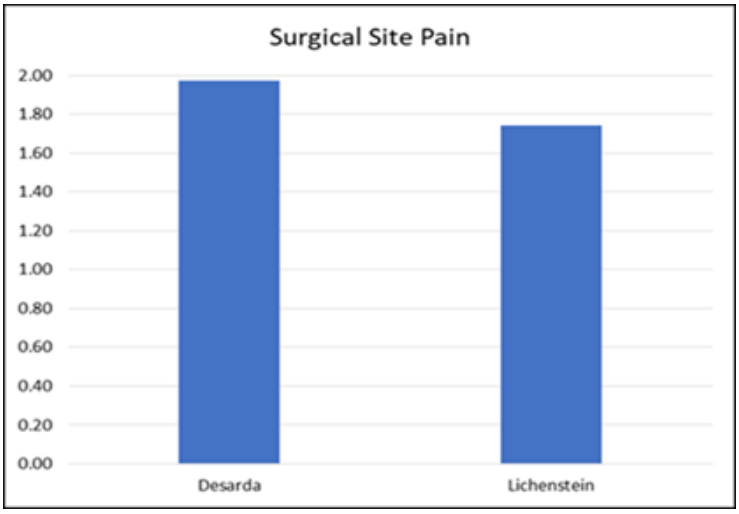


Table 6 compares surgical site pain between the Desarda and Lichenstein groups. The mean surgical site pain score for the Desarda group is 1.97 ± 0.66, while for the Lichenstein group, it is 1.74 ± 0.66. The above data was collected from patients after discharge and an average follow-up of 2 weeks to a maximum follow-up till 6 weeks. The P value of 0.152 indicates no significant difference in surgical site pain between the two groups.

Table 7: Comparison of Recurrence

Parameter			Group		Total
			Desarda	Lichenstein	
Recurrence	No	N	35	35	70
		%	100.0%	100.0%	100.0%
	Yes	N	0	0	0
		%	0.0%	0.0%	0.0%

Graph 6:

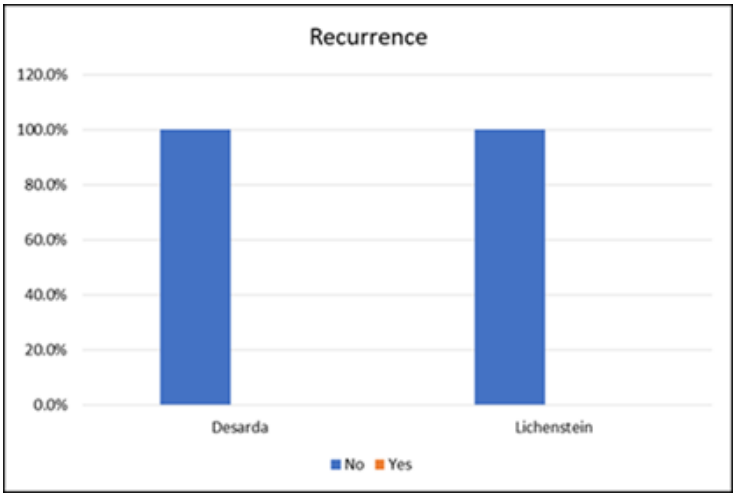
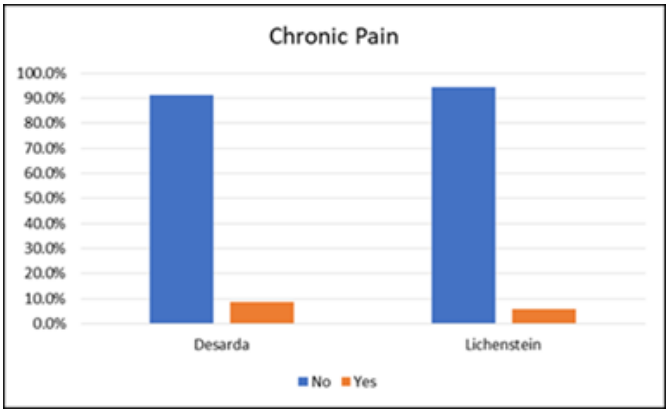


Table 7 presents the comparison of recurrence. Both the Desarda and Lichenstein groups have 35 individuals (100.0%) with no recurrence, and 0 individuals (0.0%) with recurrence.

Table 8: Comparison of Chronic Pain (follow-up after 2 months to 6 months)

Parameter			Group		Total	P value
			Desarda	Lichenstein		
Chronic Pain	No	N	32	33	65	.643
		%	91.4%	94.3%	92.9%	
	Yes	N	3	2	5	
		%	8.6%	5.7%	7.1%	

Graph 7:



In Table 8, the comparison of chronic pain shows that in the Desarda group, 32 individuals (91.4%) do not have chronic pain, and 3 individuals (8.6%) do. In the Lichenstein group, 33 individuals (94.3%) do not have chronic pain, and 2 individuals (5.7%) do. The total number of participants without chronic pain is 65 (92.9%), and those with chronic pain are 5 (7.1%). The P value of 0.643 indicates no significant difference in the prevalence of chronic pain between the two groups.

Discussion

Inguinal hernia is a very common condition afflicting mankind. All inguinal hernias share the common feature of emerging thorough the myopectineal orifice of furchaud. Lichtenstein hernia repair is the widely practiced repair for most of the inguinal hernia with very few exceptions.

Desarda procedure might be the ideal procedure satisfying the criteria for an ideal hernia repair as it is tension free, tissue based and as per results of various studies has less chronic groin pain than mesh repair as nerve entrapment does not occur. There is no risk of

mesh infection as it uses an undetached strip of external oblique for repair.

External oblique aponeurosis acts as a near perfect mesh alternative as it has negligible foreign body reaction, causes no pathologic fibrosis, has low adhesion potential, has adequate tensile strength is of biological origin and matches the abdominal wall dynamics as closely as possible in flexibility, elasticity and memory as per the criteria laid down by 30th international Congress of the European Hernia Society.

The Lichtenstein technique has long been considered the gold standard for inguinal hernia repair, largely due to its simplicity, reproducibility, and consistent outcomes across various patient populations. The widespread acceptance of the Lichtenstein technique is supported by a substantial body of evidence demonstrating its low recurrence rates and minimal postoperative complications, such as chronic pain and infection. On the other hand, the Desarda technique is particularly appealing in resource-limited settings where the cost or availability of synthetic mesh may be a concern.

The Desarda technique has gained attention for its potential advantages, including reduced postoperative pain, faster recovery times, and the absence of foreign material, which may decrease the risk of mesh-related complications such as infection and chronic pain.

Despite these differences, the overall effectiveness of both techniques in inguinal hernia repair remains comparable. The choice between Desarda and Lichtenstein techniques may therefore be guided by specific patient circumstances, such as the presence of comorbidities, patient preference regarding the use of synthetic materials, and the surgeon's familiarity with the technique.

Conclusion

The comparative analysis of the Desarda and Lichtenstein techniques for inguinal hernia repair highlights that both approaches are equally effective in achieving successful surgical outcomes.

- The comparison between Desarda's tissue repair and Lichtenstein mesh repair shows no statistically significant difference in patient demographics, including age, Type 2 Diabetes Mellitus, hypertension, smoking, and alcohol consumption.
- Surgical time for both techniques is almost identical, with no significant difference.
- Pain scores post-surgery was similar for both groups.
- There is no significant difference in the number of IV analgesic doses required post-operatively.
- Wound complications were low in both groups, with a slightly higher occurrence of seroma in the Lichtenstein group, but this was not statistically significant.
- Surgical site pain and post-operative hospital stay showed no significant difference between the two techniques.
- No recurrences of hernia were observed in either group on a maximum follow up of 2 years.
- The occurrence of chronic pain and sensation of a foreign body were similar between the two techniques, with no statistically significant difference.
- Desarda is an effective alternative to Lichtenstein's hernioplasty as it is inexpensive, easy to learn and reproduce, associated with fewer post-operative complications including mesh related complications. It also has a potential role in emergency (which needs to be explored further).

References

1. Rutkow IM. A selective history of Groin Herniorrhaphy in the 20th century. Surg Clin North Am 1993; 73:395-411.
2. Rutkow IM, Robbins AW. Demographic, classificatory, and socioeconomic aspects of hernia repair in the United States. SurgClin North Am 1993; 73:413.
3. Lyons AS, Petrucelli RJ II. Medicine: an illustrated history. New York: Harry N. Abrams Publishers; 1987:320.
4. Skandalakis JE, Gray SW, Skandalakis LJ. Surgical anatomy of the inguinal area. World J Surg 1989; 13:490.
5. Zimmerman LM, Zimmerman JE. The history of hernia treatment. In: Nyhus LM, Condon RE, editors. Hernia. 2nd ed. Philadelphia: JB Lippincott; 1978:71-72.
6. Robbins AW, Rutkow IM. The mesh-plug hernioplasty. SurgClin North Am 1993; 73:501-63.
7. Skandalakis MC, Skandalakis JE. The personal and professional life of John Hunter. J Med AssocGa 1991; 80:445.
8. Halsted WS. The cure of the more difficult as well as the simpler inguinal ruptures. Bull Hopkins Hosp 1903; 14:208.
9. Last RJ. Anatomy regional and applied. 5th ed. Baltimore: Williams & Wilkins; 1972:507.
10. Nyhus LM. Editorial conmment. In. Nyhus LM, Condon RB, editors. Hernia. 2nd ed. Philadelphia: JB Lippincott; 1978:11.
11. Abrahamson J. Hernias. Maingot‟sAbdominal operations. 13th ed. McGraw Hill; 2001:479-580.
12. Wantz GE. Abdominal wall hernias. In: Seymour I. Schwartz‟s Principles of Surgery. 11thed. New York: McGraw Hill; 1999:1585-611.
13. Sinnatamby CS. Anterior abdominal wall. Last‟s anatomy regional and applied. 10th ed. Edingburgh: Churchill Livingstone; 2000:215-26.
14. Bailey & Love's - Short practice of surgery. 28th ed. London: Arnold; 2004:1272-1293.
15. Williams PL. Muscles of Abdomen. Gray's Anatomy. 41sted. Edingburgh : ELBS;1995:819-29.
16. Moosman DA, Oelrich TM. Prevention of accidental trauma to the ilioinguinal nerve during inguinal herniorrhaphy. Am J Surg 1977; 133:146-8.
17. Decker GAG. The groin & scrotum. Lee Mc Gregor's Synopsis of Surgical Anatomy 12th ed. Bombay: Varghese Publishing house; 1999:118-36
18. Read RC. Anatomy of Abdominal Herniation: The Parietoperitoneal spaces. In: Nyhus LM, Baker RJ, Fischer JE. Mastery of Surgery. 3rd ed. Little, Brown, and Company; 1997:1795-806.
19. Amado WJ. Anaesthesia for hernia surgery. SurgClin North Am 1993; 73:427-37.
20. Devlin HB. Inguinal hernia in adults. In: Carter D, Russel RCG, Pitt HA. Atlas of General Surgery. 3rd ed. London: Arnold; 1996:38-49.
21. MalekpourF. Ilio-inguinal nerve excision in open mesh repair of inguinal hernia-Results of a randomized clinical trial: Simple solution for a difficult problem. Am J Surg 2008 Jun; 195(6):735-40
22. Picchio M, Marcello P, Palimento D. Randomized controlled trial of preservation or elective division of ilioinguinal nerve on open inguinal hernia repair with polypropylene mesh. Arch Surg 2004; 139:755-8

23. Hirschl, Ron, et al., editors. "Inguinal Hernia." Pediatric Surgery NaT, American Pediatric Surgical Association, 2020. Pediatric Surgery Library, www. pedsurglibrary.com/ apsa/ view/ Pediatric-Surgery-NaT/829066/all/Inguinal_Hernia.
24. Arthur I. Gilbert, 1995. "Gilbert Classification of Inguinal Hernias: An Anatomic and Functional Tool", Inguinal Hernia Repair: Expert Meeting on Hernia Surgery, St. Moritz, February 1994, V. Schumpelick, G.E. Wantz
25. Miserez, M., Alexandre, J.H., Campanelli, G. et al. The European hernia society groin hernia classication: simple and easy to remember. Hernia 11, 113–116 (2007). https:// doi.org/ 10.1007/s10029-007-0198-3
26. Desarda MP. New method of finguinal hernia repair: A new: solution. ANZ J Surg 2001;71:241-4
27. Desarda MP. Physiological repair of inguinal hernia: A new technigue (a study of 860 patients). Hernia 2006;10:143-6.
28. Desarda MP. No-mesh inguinal hernia repair with continuous absorbable sutures: a dream or reality? (A study of 229 patients). Saudi J Gastroenterol. 2008J ul; 14(3):122-7. doi: 10.4103/1319-3767..4 1730. PMID: 19568520;PMCID: PMC2702909.
29. Gedam BS, Bansod PY, Kale VB, Shah Y, Akhtar M.A Comparative study of Desarda's technique with Lichtenstein mesh repair in treatment of inguinal hernia: A prospective cohort study. Int J Surg. 2017 Mar:39:150-155. doi: 10.10.16/j.ijsu.2017.01.083. Epub 2017 Jan 25. PMID: 28131917.
30. Youssef T, EI-Alfy K, Farid M. Randomized Clinical trial of Desarda versus Lichtenstein repair for treatment of primary inguinal hernia. Int J Surg. 2015 Aug;20:28-34. doi: 10.1016/j.ijsu.2015.05.055. Epub 2015 Jun 11. PMID: 26074293.
31. Tran, Hanh. "Robotic single-port hernia surgery." JSLS, Journal of the Society of Laparoendoscopic Surgeons 15.3 (2011): 309-314.
32. De Vries EN, Dijkstra L, Smorenburg SM, Meijer RP, Boermeester MA. The SURgical PAtient Safety System (SURPASS) checklist optimizes timing of antibiotic prophylaxis. Patient safety in surgery. 2010;4(1):6.
33. Lipton S, Estrin J, Nathan I. A biomechanical study of the aponeurotic inguinal hernia repair. Journal of the American College of Surgeons. 1994;178(6):595-9.
34. Zaheer A, Sujeet KB, Monika K, Rakesh B. Desarda's no Mesh Repair Versus Lichtenstein's Open Mesh Repair of Inguinal Hernia: A Comparative Study. Journal of Evolution of Medical and Dental Sciences 2015;4(77):13279-13285.
35. Gulzar MR, Farooq MU, Ahmad S, Aslam F, Tahir S, Chaudhary ZA. Desarda Repair Versus Lichtenstein Repair, A Comparative Study. APMC 2019;13(2):153-156.
36. Ganesh GD, Sanjeev KM. Comparative study of no mesh (Desarda) technique versus mesh (Lichtenstein) technique for primary inguinal hernia repair at a tertiary hospital. MedPulse International Journal of Surgery. January 2020; 13(1): 24-28
37. Yarlagadda A, Shankar RK, Satish KRS. Comparision of Lichtenstein mesh hernioplasty with Desarda's tissue based repair technique in the treatment of inguinal hernia: A prospective study. International Journal of Surgery Science 2022; 6(3): 19-24

38. Neogi P, Gupta V, Tripathi N. A comparative study of outcomes of Lichtenstein repair and Desarda tissue repair in patients of inguinal hernia. Int Surg J 2017;4:2693-9.
39. Bilal M, Muhammad WR, Hafiza KSM, Shahid H, Aqsa N. Comparison of Outcome of Desarda's Repair with Lichenstein Mesh Repair in Inguinal Hernia. P J M H S. 2022;16(7);188-190.
40. Manyilirah W, Kijjambu S, Upoki A, Kiryabwire J. Comparison of non-mesh (Desarda) and mesh (Lichtenstein) methods for inguinal hernia repair among black African patients: a short-term double blind RCT. Hernia. 2012 Apr 1;16(2):133-44.