

A Systematic Review on the Outcome of Standard Lichtenstein's Repair of Inguinal Hernia Versus Desarda's Biological Repair in a Tertiary Government Medical College

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Abstract:

Introduction: Hernia repair is one of the most common operations performed by general surgeons worldwide. Despite the frequency of this procedure, no surgeon has ideal results and complications such as those related to mesh repair and those related to without mesh repair such as post operative pain, nerve injury, seroma, surgical site infection, chance of recurrence with time and CGPS (Chronic Groin Pain Syndrome) suggest that hernia is a chronic disease process effecting Patients over their lifetime. The aim of present study is to compare gold standard technique of Lichtenstein's Hernioplasty versus Desarda's biological repair (Both by open technique) in our medical college.

Materials and Methods: This double blinded randomised controlled study was conducted with a total of sixteen patients, including eight patients who underwent Lichtenstein's Hernioplasty using polypropylene mesh and another eight patient underwent Desarda's biological repair using absorbable suture material, vicryl.

Using Inclusion and exclusion criteria--All the patients who underwent surgery by either method were followed up closely for eight months, possible complications and the data was recorded, analysed and synthesised narratively.

Results: Considering population sample size and age of the sample; Mean-SD were calculated. The mean for the entire sample is 39.875 and SD is 3.332; variance is 1.825; co-efficient of variation is 8.356

	Mean	SD	Variance	CV
Lichtenstein's	39.375	3.079	1.754	7.819%
Desarda's	40.375	3.466	1.861	8.584%

Again, two sample paired t-test is located weather the mean of the population has a value specified in null hypothesis. $t = \frac{x - \mu_0}{s/\sqrt{n}}$; Degree of freedom is n-1. By the central limit theorem; if the observations are independent and the second moment exists, then it will be approximately normal N (0-1).bHere values of student t-tests are 0.897 (total sample). Study quality is assessed by oxford quality rating scale (JADAD SCALE). Yielding two points for randomisation, one for double blinding and one for dropout rate: 4/5; suggesting high quality. However, it does not include an assessment item for allocation concealment. As a result of the growing influence of evidence based medicine Heterogeneity value is taken nil-significant (all patients from the same geography).Above data shows Mean SD of the Desarda's group is slightly higher than Lichtenstein's, but the difference was statistically not significant.

Conclusion: Present study suggests that uncomplicated hernia repairs by means of Desarda's technique are relatively pain free yielding the same success rate as that of Lichtenstein's and obviously not carrying complications of mesh repair (Hernioplasty). However, O.R. time is more and also considering the limited sample size, same geographical pattern sampling- large sample size may be required to be studied along with long duration follow up as well.

Keywords: Lichtenstein's Hernioplasty, Desarda's repair, Inguind Hernia,

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Introduction

Hernia is defined as an abnormal protrusion of an organ or tissue through a defect in the surrounding walls; particularly the inguinal region. Abdominal wall hernias occur only at sites at which the aponeuroses and fasciae are not covered by striated muscle, most commonly include the inguinal, femoral and umbilical areas [1].

Maintenance of abdominal core health may include exercise, physical therapy, medical therapy, surgical intervention and measures to prevent diseases i.e. Hernia prophylaxis [1].

While it's thought that Lichtenstein's tension free hernioplasty remains the gold standard for open repair; Inguinal Hernia repair according to

Desarda's is a pure tissue surgical technique using external oblique fascia to strengthen the posterior wall of inguinal canal. This has provided a way for the re-thinking of guide line adherence towards the minimal invasive and mesh based surgery of inguinal herniae.

In this study, a prospective analysis of this technique was conducted in government medical college Srikakulam and Paderu on sixteen patients.

Analysis included patient characteristics, operative time, post operative pain, post operative stay and length of hospital stay. Study population consisted of sixteen patients- all of them are male.

S. No.		Lichtenstein's	Desarda's
1	Median Operation Time	50min	1hr 20min
2	Length of Stay	4days	4days
3	Reccurence after 8 months	Nil	Nil
4	CGPS	1	Nil
5	Quality of Life Index Score	+(3)	++(4)
6	Entrapment Neuropathy	Nil	Nil

All Lichtenstein's repair use polypropylene mesh 3×6 cm where as this disadvantage of the mesh is not there in Desarda's which used vicryl.

Desarda's who used long-term reabsorbable sutures was charectorised by the use of only autologous external oblique fascia to stabilize the posterior inguinal wall in order to avoid chronic pain. This study also used the quality of life index score.

Inclusion Criteria: Cochrane based PICO (Population, Interventions, Comparison, Outcomes) is followed. Patients only with indirect, uncomplicated inguinal hernia who are males belonging to the tribal community, within the same geography.

Exclusion Criteria: Patients with complicated herniae, females, out of pre-set age group, comorbidities or of different BMI and those thought to be lost for follow-up were excluded.

Materials and Methods: This small study carried on with prospective cohort group by randomized controlled trial study, after double-blinding

- End point of the study was preset at eight months after either of the definitive surgeries.
- Total of sixteen patients divide into two groups of eight each
- Heterogeneity was null.
- Operation technique followed standard method in each group.
- Mobility, self-care, RDA (Routine Daily Activities), psychological state and pain perception score were taken into QOL (Quality of Life) analysis for which EQ-5D health questionnaire was used.
- The statistics were mentioned below.

Table 1: Base line characteristics of unmatched patient cohorts

S. No.	Characteristics	Lichtenstein's	Desarda's
1	Age	39.375	40.375
2	Sex	M	M
3	BMI	23.8	24.2
Size of Defect			
1	<1.5cm	5	3
	<2cm	3	5
2	Type of Hernia	Indirect, incomplete	Indirect, incomplete
Hernia side			
1	Right	6	5
2	Left	2	3
3	SD	3.079	3.466
4	t-test	0.897	0.982

Outcome parameters:**Table 2: At the time of end of study (8 months)**

S. No.	Characteristics	Lichtenstein's	Desarda's
1	Pain	1	Nil
2	QOL Score	3(good)	4(excellent)
3	Recurrence	Nil	Nil
4	Entrapment Neuropathy	--	--
5	Median OR	50 min	1hr 20min

Discussion:

- Main concerns associated with mesh repair regarding chronic pain, neuropathy because of ilioinguinal nerve entrapment, possible visceral complications favor towards pure tissue repair like Desarda's biological repair. Database is also mainly comparing traditional Lichtenstein repair vs. Desarda's than other non-mesh repairs like Bassini's or shouldice repair. Main risk factor however appears to be long learning curve associated with standardisation of the technique for tissue repairs.
- The first prospective data comparing these two procedures was from Szopinski et al, [2] and pitfalls of reliable long term follow up [3] remain shortcome of this study.
- Further, data extraction shows fewer patients with chronic pain when using Desarda's biological repair [4-6].

Conclusions

- With this low volume prospective randomised controlled trial study of these two techniques slightly favor Desarda's biological repair, as it appears to be associated with better outcome of QOL score for patients and no additional disadvantages are noted.
- However the survey needs to be conducted with larger sample size and long duration follow up.

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