



Comparative Study Of Complications Following Open Tension Free Mesh Repair And Desarda`S No Mesh Tissue Repair In Inguinal Hernia

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Abstract

Background: A hernia is defined as protrusion of whole or a part of a viscus through the wall that contains it. It is the most commonly seen condition in the outpatient department in most parts of the world. Improvements in surgical technique and a better understanding of the anatomy and physiology of the inguinal canal have significantly improved outcomes for many patients.

Aim of the study : To compare chronic groin pain and surgical site infection of open inguinal hernia mesh repair and desarda`s no mesh repair. The study was conducted with an objective to compare the postoperative complication between two groups.

Material and Methods: 60 cases of inguinal hernia admitted in Government Medical College, Omandhurur Estate, Tamil Nadu, India were selected on the basis of the non-probability (purposive) sampling method. All patients with uncomplicated direct and indirect hernias treated by open mesh repair with no mesh repair were included. After preoperative blood investigations and co morbidity screening and preoperative preparation they were randomly chosen for either open prolene mesh repair or no mesh desarda`s repair. The age / sex incidence, mode of presentation, precipitating factors, surgical treatment and postoperative complications with continuous followup were all evaluated and compared with standard published literature.

Results: Seroma was complained in 8 cases of Lichtenstein hernioplasty and 2 case of desarda`s no mesh hernia repair. Scrotal edema was complained in 7 cases of mesh repair while 1 case complained scrotal edema in desarda no mesh repair. Post-operative surgical site infection developed in 4 case of Lichtenstein hernioplasty and 1 case in the desarda hernia group. Urine retention was complained 12 case of mesh repair and 5 case of no mesh repair. Chronic groin pain was complained in 4 cases in mesh repair while 1 case in no mesh repair.

Conclusion: In our study, it was found that the incidence of seroma, urinary retention, scrotal edema, surgical site infection, chronic groin pain in post-operative patients undergoing groin hernia surgeries, thereby seroma, urinary retention and scrotal edema was significantly less in the no mesh tissue repair group as compared to the prolene mesh repair group and results are statistically significant. In view of the surgical infection and chronic groin pain not significantly comparable to both groups and results are statistically not significant. From the above results it is concluded that desarda`s repair less post-operative complications comparing to mesh repair. It is also associated with very good postoperative outcome and early recovery of the patients.

Keywords: Inguinal hernia; lichtenstein; Desarda; chronic groin pain; surgical site infection; testicular swelling; seroma; hematoma; recurrence; urine retention

Introduction

Inguinal hernia repair is one of the most common operations undertaken in routine surgical practice. It generally carries a very low risk of major adverse sequelae. The incidence and prevalence of inguinal hernia are not calculated yet. Risk of inguinal hernia in men is about 27% and 3% in females in their life time [1]. As per European Hernia Society (EHS) guidelines published in 2009, prolene mesh-based procedures ie. Lichtenstein technique and laparoscopic methods are preferred for treatment of symptomatic inguinal hernia in adult men while the Shouldice tissue based hernia repair technique is considered the best non-mesh repair method. Lichtenstein technique, nowadays, is the most preferred and most popularly used technique for inguinal hernia repair due to its minimal perioperative morbidity and very low recurrence [2]. Incidence of chronic groin pain after lichtenstein technique has increased over years mainly due to implanted mesh. Complications such as seroma, hematoma, foreign body sensation has increased over years in respect to lichtenstein hernia repair. Migration of mesh is also deadly complications faced post hernia repair [3]. Hence, yet to know all aspects of hernia surgery, tissue based technique can be a better surgical approach compared to globally practised lichtenstein technique.[4] The rapid changes that have been witnessed in open approach surgeries, prosthetic materials and laparoscopic surgeries have made hernia surgery, a most interesting field of endeavor that demands renewed discipline and dedication. [5] Though a variety of procedure are performed none can be termed as an ideal procedure as each one is accompanied by varied early and late complications, the most significant being recurrence. In 1981, William Bull, one of the most prominent Surgeons, wrote of hernia repairs, "It is wise to estimate the value of given procedures by the relative proportions of relapses".[6] In our Institutions, inguinal hernia repair is one of the common surgeries performed daily. This study aims at studying the post-operative complications like seroma, surgical site infections, urine retention, scrotal edema and chronic groin pain between the open inguinal hernia mesh repair and desarda`s inguinal hernia no mesh repair surgeries and to arrive at a conclusion as to the best modality of treatment after comparison of postoperative complication of these procedures among them and in relation to standard published material.[7]

Material And Methods

This Prospective comparative study was conducted in 60 cases of inguinal hernia admitted in Government Medical College, Omandhurar Estate, Tamil Nadu, Indiawere selected on the basis of the non-probability (purposive) sampling method. All patients with uncomplicated direct and indirect hernias treated by open mesh repair with no mesh repair were included. After preoperative blood investigations and co morbitidy screening and preoperative preparation they were randomly chosen for either open prolene mesh repair or no mesh desarda`s repair. The age / sex incidence, mode of presentation, precipitating factors, surgical treatment and postoperative complications with continuous followup were all evaluated and compared with standard published literature Study duration: **3 months in 2020**. Open Mesh Repair: 30 Patients. Desarda`s Repair: 30 Patients. **Inclusion criteria:** Patients with single side or both side inguinal hernia with reducible and non obstructive. **Exclusion criteria:** All patients who presented with complete hernia and with complications of inguinal hernia like obstruction or strangulation are excluded from the study. Also patients who had undergone lower abdominal surgery previously and ASA Gr>3 are also excluded from the study. Recurrent inguinal hernia also excluded from this study. All the patients included in the study shall be evaluated to a thorough history and clinical examination. In addition to routine blood and urine investigations, Other investigations are also done such as Radiographic procedures like X-ray chest, USG- abdomen and pelvis to look for benign prostate enlargement. ECHO are recommended if it is indicated for some patients. The type of anesthesia used was spinal anesthesia for open cases The patients were randomly chosen into open mesh repair or desarda`s hernia no mesh repair. A single dose of preoperative broad-spectrum antibiotic given followed by the same for 3 days postoperatively.

Statistical analysis

Data was analyzed by SPSS for Windows (version 26.0; IBM Inc., Armonk, USA). A chi-square test was used to determine statistical significance for categorical data, and the unpaired t-test was used for continuous variables. Statistical significance was set at 0.05

Result

The collected data were analysed with IBM.SPSS statistics software 23.0 Version. To describe about the data descriptive statistics frequency analysis, percentage analysis were used for categorical variables and the mean & S.D were used for continuous variables. To find the significance in

categorical data Chi-Square test was used similarly if the expected cell frequency is less than 5 in 2x2 tables then the Fisher's Exact was used. In all the above statistical tools the probability value .05 is considered as significant level.

Table 1: Age Distribution Mean Age And Standard Deviation

Age distribution		
Age	Frequenc y	Percent
Upto 30 yrs	5	8.3
31 - 40 yrs	6	10
41 - 50 yrs	17	28.3
51 - 60 yrs	14	23.3
61 - 70 yrs	12	20
71 - 80 yrs	6	10
Total	60	100

In our study the minimum age at which occurrence of hernia was at 22 yrs ant the eldest being at 77 yrs. All the patients in the study were men.

Table 2: Duration Of Symptoms

Duration	Frequency	Percent
Less than 1 year	54	90
More than 1 year	6	10
Total	60	100.0

90% of the patients presented within the first year of onset of complaints while 10 % presented after one year.

Table 3: Associated Illness

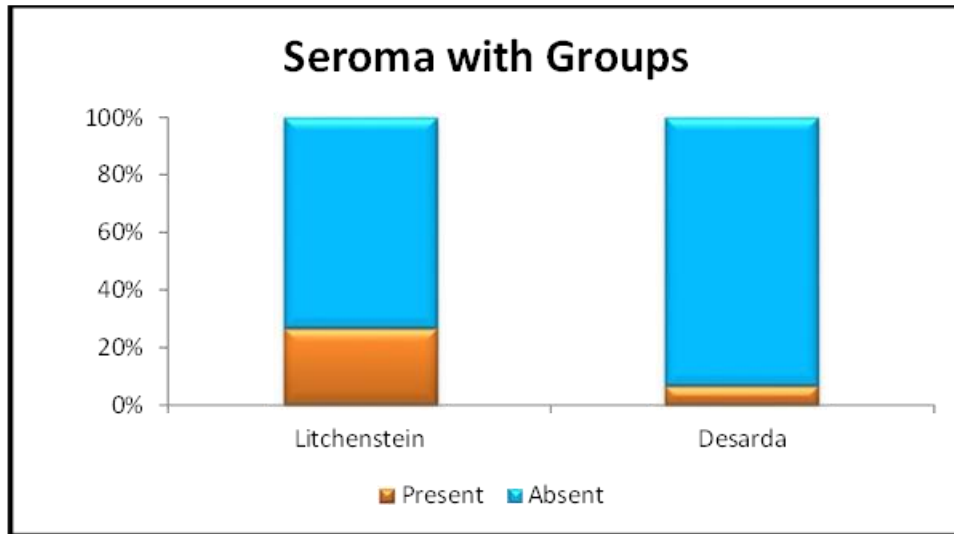
Valid	Frequency	Valid Percent
Chest Infection	2	10.5
Multiple	2	10.5
DM	4	21.1

HTN	11	57.9
Total	19	100.0

Associated illness

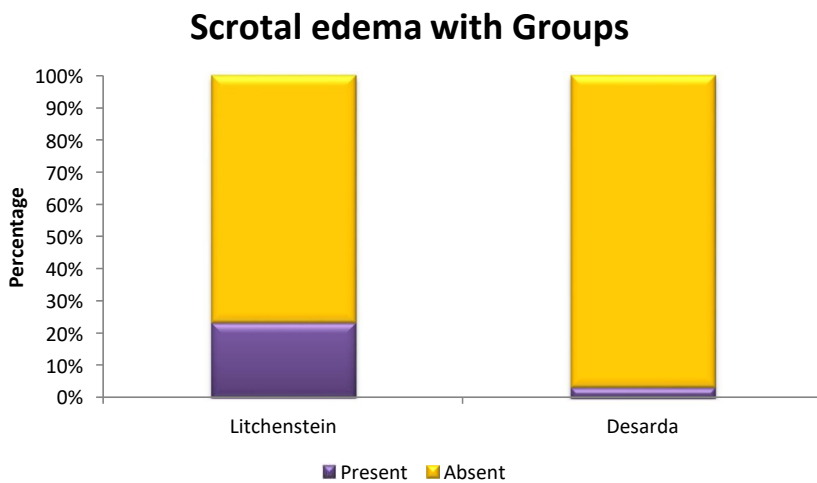
Hypertension was the most common associated illness with 11 people suffering from it, Diabetes mellitus was seen in 4 people.

Graph 1: Seroma



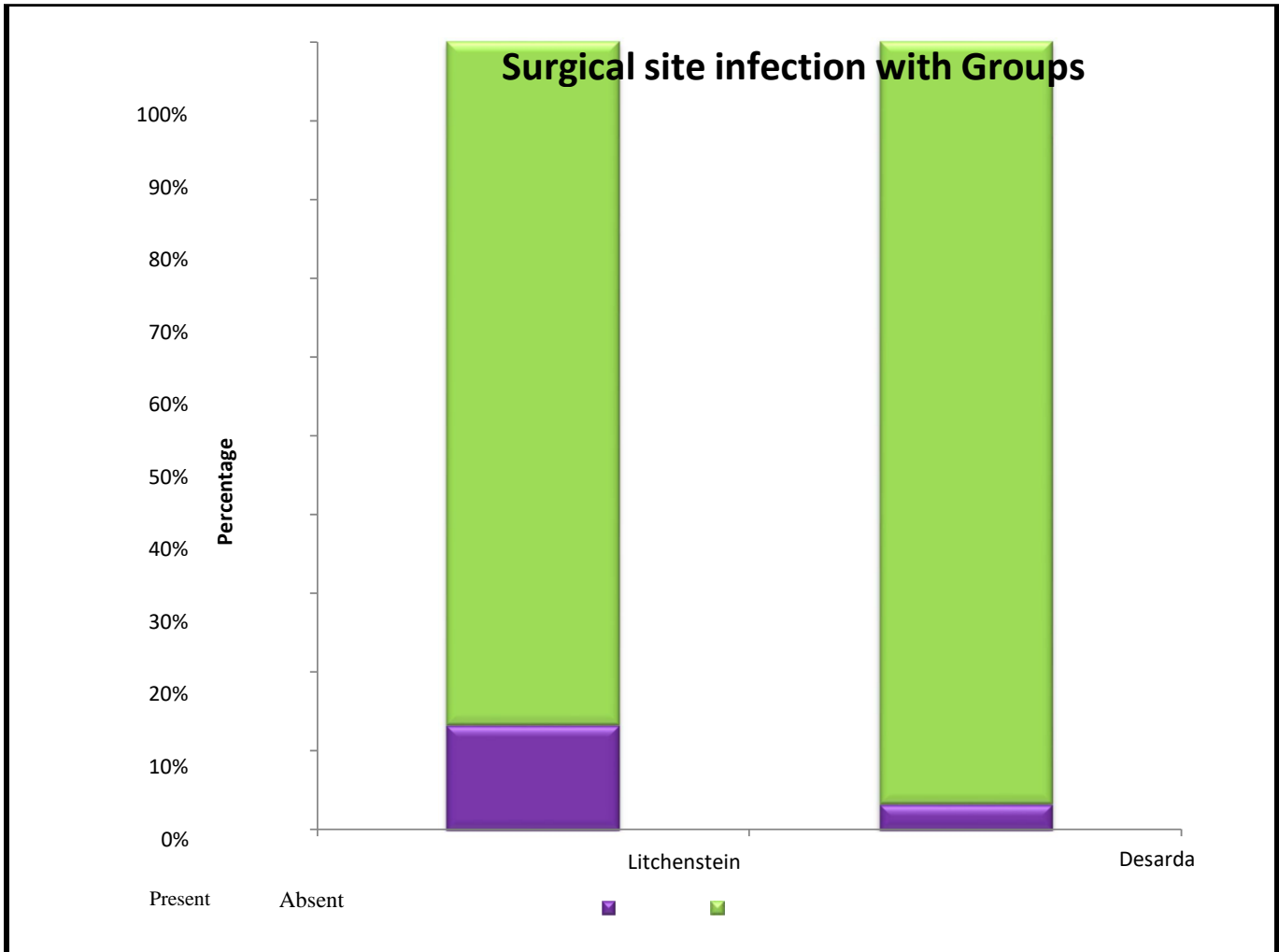
In our study, 26.7% seroma in mesh repair group compare to desarda repair group 6.7%..p value is less than-.05. It's statistically significant between two group

Graph :2 Scrotal Edema In Groups



In our study, 23.3% scrotal edema in mesh repair group compare to desarda repair group 3.3%. p value is less than .05 It's statistically significant between two group.

Graph :3 Surgical Site Infection



In our study, 13.3% surgical site infection in mesh repair group compare to desarda repair group 3.3%. p value is more than .05 It's statistically not significant between two group

Table.4: Urine Retention With Groups

			Mesh		Total	□ 2 - value	p-value
			Litchenste in	Desarda			
		Count	18	25	43		

Urinary retention	Absent	%	60.0%	83.3%	71.7%	4.022	0.045 *
	Present	Count	12	5	17		
Total		%	40.0%	16.7%	28.3%		
	Count	30	30	60			
		%	100.0%	100.0%	100.0%		
* Statistical Significance at $p < 0.05$ level							

In our study 12 cases complained urinary retention in mesh repair group while 5 case complained in no mesh repair. 40% patient complained in mesh repair.

Tab4.Chronic Groin Pain With Group

Chronic groin pain	Absent	Count	26	29	55		
		%	86.7%	96.7%	91.7%		
	Present	Count	4	1	5		
		%	13.3%	3.3%	8.3%		

Total	Count	30	30	60	1.964	0.353 #
	%	100.0%	100.0%	100.0%		
# No Statistical Significance at $p > 0.05$ level						

Chronic groin pain was complained in 4 case in mesh repair while 1 case complained in no mesh group. P value more than .05 which is statistically not significant.

Discussion

The present study is a comparative study between the open tension free Mesh repair and desarda`s no mesh tissue repair. The study was conducted with an intension to compare the postoperative complications between the two groups.[8] All patients were intensively monitored in the immediate postoperative period and the complications were noted. Interestingly, we found out that the mesh repair is expensive than open desarda`s repair. The patients were followed up in the postoperative period for variable durations. Therefore, no recurrences were noted during the study period due to short study period and small study group.[9] It`s not exact representation general population since the study period was for a short duration, long term outcomes and results cannot be assessed and thus the follow up continues for these patients.[11] In our study, it was found that the incidence of seroma, urinary retention, scrotal edema, surgical site infection, chronic groin pain in postoperative patients undergoing groin hernia surgeries, thereby seroma, urinary retention and scrotal edema was significantly less in the no mesh tissue repair group as compared to the prolene mesh repair group and results are statistically significant.[12] In view of the surgical infection and chronic groin pain not significantly comparable to both groups and results are statistically not significant.[13] There was no recurrence in both

groups. From the above results it is concluded that desarda`s repair less postoperative complications comparing to mesh repair. It is also associated with very good postoperative outcome and early recovery of the patient [14,15]

Conclusion:

To summarise, there is no universal repair for groin hernia and no two surgeons will disagree to agree on that point. The availability of such an array of surgical techniques in the treatment of groin hernias is bound to confuse the younger surgeon. All techniques will have hard proponents as well as opponents. This is where the practice of evidence-based medicine is very crucial and one should have close watch on the long term follow up results of any particular newer procedures. Till then one may practice a time honoured and a good surgical technique, which has the least recurrence rate that is handed over to them by their seniors, taking into account the cost factor which is still important in the developing country like ours.

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