ORIGINAL RESEARCH PAPER
Volume - 10 | Issue - 05 | May - 2021 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

A COMPARATIVE STUDY OF LICHTENSTEIN MESH REPAIR VS NONMESH TISSUE REPAIR DESARDA'S TECHNIQUE FOR INGUINAL HERNIA REPAIR

General Surgery

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ABSTRACT

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. The incidence and prevalence of inguinal hernia are not precisely known. The chance of a person having to undergo on inguinal hernia operation during his/her life in quite high, 27% in men and 3% in women.

Aims and objectives: The Aim of Study is to find the Effectiveness of Non Mesh Tissue Repair (Desarda) in compared with mesh repair (Lichtenstein)

Materials And Methods: Over A Period 1 Year of Eight Months 40 Patients Aged Between 21 & 70 Years Treated for Inguinal Hernia were Included in this Prospective Randomized Study

Result: In this study Return to normal nonsternous Activity After 7-15 days in Desarda group was 84 % while only 48% of patient in Lichtenstein repair.(p value <0.0001).

Conclusion: The Lichtenstein repair and Desarda procedures of primary inguinal hernia repair do not differ in the means of procedure, complexity. The time taken for return to normal nonsternous activity is significantly higher for Lichtenstein group compared to Desarda's repair. The patients are satisfied with the Lichtenstein repair and Desarda's repair with surgery outcome.

KEYWORDS

Lichtenstein Mesh Repair, Nonmesh Tissue Repair, Desarda's Technique , Inguinal Hernia Repair

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. The incidence and prevalence of inguinal hernia are not precisely known. The chance of a person having to undergo on inguinal hernia operation during his/her life in quite high, 27% in men and 3% in women.[1]

In 1887, Edoardo Bassini first proposed repairing the inguinal canal with silk stitches the conjoined transverses abdominis and internal oblique with the transversal faslia to the inguinal ligament, which is the 1st sound technique for the repair of inguinal hernia. Since that time, more than 70 derivations of tissue based repairs are described with little or no benefit except for the shouldice modifications. In this operation, the transversalis faslia is open by a central incision from the deep inguinal ring to the pubic tubercle and then closed to create a double thick, two layered posterior wall (double breasting). The external oblique is closed in similar fashion. Expert centres have reported lifetime failure rates of less than 2% after should ice repair but it is technically demanding operation which, in general hands, gives results identical to Bassinis's repair.

The Lichtenstein technique, introduce in 1984, is currently the best evaluated and most popular if different open mesh techniques with minimal preoperative morbidity and low recurrence rate. However, the use of synthetic prosthesis can result in new clinical problems, such as foreign body sensation, chronic groin pain, abdominal wall stiffness and pain related sexual dysfunction which may affect the daily activities of the patients. Mesh migration to the intestine, urinary bladder, femoral vein, perperitioneal space and the scrotum has been reported after all varieties of mesh repairs. Mesh rejection has also been reported in some cases.[2]

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 stuff is still far to define.

In 2001, Desarda proposed a solution that using part of the external oblique aponeurosis as a patch for repair, which may reduce the complications compared with meshes. Moreover, the technique require no complicated dissection or suturing and is easy to learn as its developer claimed.[3]

In this study, we made a meta analysis to compare the outcomes of Desarda and Lichtenstein technique with respect to surgical time, postoperative recovery, complications and recurrence rate.

The Aim of Study is to find the Effectiveness of Non Mesh Tissue Repair (Desarda) in compared with mesh repair (Lichtenstein)

1. The recurrence rate in our study for the new method.
2. The mean postoperative stay and return to work in the new method group in our study.
3. To compare the case effectiveness in our present socioeconomic condition.
4. The compare the incidence of postoperative infection.

MATERIALS AND METHODS

Study Site: Department of General Surgery, Darbhanga Medical College and Hospital, Laheriasarai, Darbhanga.

Collaborating Departments

- Department of Anaesthesiology
- Department of Radiology
- Department of General Medicine
- Department of Medical Biochemistry

Study Period: 1 year 8 month (April 2019 to December 2020)

Materials: All Patients Having Inguinal Hernia Diagnosed Clinically and by Radiological Examination were Included in the Study.

Methodology: Over A Period 1 Year of Eight Months 40 Patients Aged Between 21 & 70 Years Treated for Inguinal Hernia were Included in this Prospective Randomized Study.

Patients were Randomly Divided into Two Equal Groups.

Group I (Control Group) Were Subjected to Lichtenstein Tension Free Mesh Repair

Group II (Study Group) were Subjected to Desarda Non Mesh Tissue Repair Patients Below

70 Years of Age and any Patients Associated with Recurrent Inguinal Hernia were not Included in our Study.

Type of Study: Prospective study

Sample Size: 40

Inclusion Criteria:
1. Adult patients above the age of 21 years.
2. Patient With Clinically Demonstrable Inguinal Hernia Were Included In Study

Exclusion Criteria:
1. Patients over 70 years of age.
2. Patients Associated with Recurrent Inguinal Hernia
3. Included associated surgical pathologies where the patients was getting operated for both conditions. At the same time, laparoscopic repairs or the patients given general anesthesia for any reason.
4. Patients A/w obstructed Irreducible Inguinal Hernia.

Type of analysis: Clinical data analysis

Data Collection: The data of each patient was collected in a specially designed proforma which is enclosed.

RESULTS AND DISCUSSION

Lichtenstein Mesh repair is now widely used, and is often referred to as the gold standard despite a relatively paucity of clinical trial comparing mesh with suture repair. Cost of surgery [4] and post-operative morbidity affecting the quality of life are important consideration in the inguinal hernia surgery. There are no clear scientific evidence to improve to prove that the mesh prosthesis repair is superior to non-prosthesis repair in this respect Porrero JL. El Cambio et al.[4]

There are advantages and disadvantages associated with all types of open inguinal hernia surgery. Existing non prosthesis repair (Bassini/Shuldice) is blamed for causing tissue tension and mesh repair is blamed for causing complication of foreign body. Desarda's suture an undetached strip of the external oblique aponeurosis between the muscle arch and the inguinal ligament to give a strong and physiologically dynamic postriorwall [5] .The posterior wall of the inguinal canal was weak and without dynamic movement in all patients. Strong aponeurotic extensions were absent in the posterior wall. The muscle arch movement was lost or diminished in all patients. The movement of the muscle arch improved after it was sutured to the upper border of a strip of the external oblique aponeurosis (EOA). The newly formed posterior wall was kept physiologically dynamic by the additional muscle strength provided by external oblique muscle to the weakened muscles of the muscle arch. A physiologically dynamic and strong posterior inguinal wall, and the shielding and compression action of the muscles and aponeurosis around the inguinal canal are important factors that prevent hernia formation or hernia recurrence after repair. In addition, the squeezing and plugging action of the cremasteric muscle and binding effect of the strong cremasteric fascia, also play an important role in the prevention of hernia MP Desarda et al. [5] Desarda's result in a tension free repair without the use of any foreign body, being simple to perform.

For inguinal hernia repair, different studies have tried to give an answer as to which of the existing technique is better [6].THE EU HERNIA COLLABRATION made a systemic revision of the randomized prospective studies and analysis of the result of different studies. The use of synthetic mesh substantially reduces the risk of hernia recurrence irrespective of placement method. Mesh repair appears to reduce the chance of persisting pain rather than increase it Mcgillicuddy JE et al.[7]

No patient had severe pain postoperatively and nearly all patients (n = 396) were free of pain and discomfort after the second postoperative day. 340 patients (85%) were discharged by the 4th postoperative day, and most returned to normal activities within 2 weeks. There was 1 early Haematocele, and 1 recurrence at 2 years Desarda MP et al [5].In this study Return to normal nonsternous Activity After 7-15 days in Desarda group was 84 % while only 48% of patient in Lichtenstein repair.(p value <0.0001).

After Desarda repair there was less intensive postoperative pain, rated in VAS scale at 3.3 in first day after the surgery, 2.1 in second day and 1.5 in third one, respectively in group II rated at 3.8, 2.7 and 1.6. Patients after Desarda repair were discharged from hospital on fourth day after the surgery, in group II on fifth postoperative day ($p < 0.05$). One week after the hemia repair patients in both groups equally classified the intensity of the pain (VAS 1.2). Six months after the hospitalization the effect of performed surgery was described as good or very good. Only one patient in group I was unsatisfied with the surgery results. There was minor intensity of the pain at this point--similar in both groups (I--0.8, II--1.1). Full activity was achieved by 46 patents in group I and 45 in group II. There was no hernia recurrence among the patients six months after the surgery Mitura K, Romanczuk M et al.[8] In This study mild to moderate pain only noticed mild to moderate on 1st, 3rd, 5th post- operative days was significantly less in desarda's group as compare to Lichtenstein group(P value <0.0001).

A total of 208 male patients were randomly assigned to the D or L group (105 vs. 103, respectively). The primary outcomes measured were recurrence and chronic pain. Additionally, early and late complications, foreign body sensation, and return to everyday activity were examined in hospital and at 7, 30 days, and 6, 12, 24, and 36 months after surgery. During the follow-up, two recurrences were observed in each group ($p = 1.000$). Chronic pain was experienced by 4.8 and 2.9% of patients from groups D and L, respectively ($p = 0.464$). Foreign body sensation and return to activity were not different between the groups. There was significantly less seroma production in the D group ($p = 0.004$) Szopinski J, Kapala A, Prywinski S, et al.[9] In This study no one documented chronic pain after both groups, significantly seroma less in desarda group (4%) compared to Lichtenstein group(16%), p value <0.0034)

The external oblique muscle technique satisfies all criteria of modern hernia surgery. Desarda's technique is simple and easy to do. It does not require risky or complicated dissection. There is no tension in suture line .It does not require any foreign material and does not use weak muscle or fascia transversalis for repair. It does not use mesh prosthesis so it is more economical and also avoid morbidity associated with foreign body like rejection, infection, chronic groin pain. Szopinski et al.[9] stated in their Randomized controlled trial that the Desarda's technique has the potential to enlarge the number of tissue based method available to treat groin hernias. The most evident indication for use financial constraints or if a patient disagree with the use of mesh.

CONCLUSION

The study is designed to compare the outcome of Lichtenstein tension free mesh repair and Desarda's repair. Though it requires studying large number of patients and a longer follow up, based on the results of our study following conclusion drawn.
1. The Lichtenstein repair and Desarda procedures of primary inguinal hernia repair do not differ in the means of procedure, complexity
2. local complications an pain intensity is higher in Lichtenstein repair compared to Desarda's repair
3. The time taken for return to normal nonsternous activity is significantly higher for Lichtenstein group compared to Desarda's repair. The patients are satisfied with the Lichtenstein repair and Desarda's repair with surgery outcome.
4. There is no recurrence of hernia seen in both groups during follow up period. Desarda's technique is based on the physiological principles. This operation is simple to perform, does not require foreign body like mesh or complicated dissection of the inguinal floor as in bassini and shuoldice.
5. Desarda's technique is cost effective when compared with Lichtenstein method, so early can do in rural areas.
6. The mean hospital stay is low for Desarda's repair compared to Lichtenstein repair.

Table: Distribution Of Pain (Mild To Moderate)

PAIN (MILD TO MODERATE)	LICHTENSTEIN (N=20)	DESRADA (N=20)
FIRST POD	19	18
THIRD POD	18	15
FIFTH POD	17	13

Table: Distribution Of Location, Duration, Complication And Return To Normal Non Sternous Work

		LICHTENSTEIN (N=25)	DESRADA (N=25)
LOCATION	RIGHT	12	11
	LEFT	8	9
	BILATERAL	0	0
DURATION	SHORT (<3 DAYS)	16	18
	LONG (>3 DAYS)	4	2
COMPLICATION	SEROMA	4	1

	WOUND INFECTION	3	1
	HEMATOMA	4	1
	ORCHITIS	0	0
	TESTICULAR ATROPHY	0	0
	RECURRANCE	0	0
RETURN TO NORMAL NON STERNOUS WORK	1-7 DAYS	3	7
	8-15 DAYS	12	19
	16-30 DAYS	18	20

REFERENCES

1. Primatesta P, Goldacre MJ. Inguinal Hernia Repair: Incidence of Elective And Emergency Surgery, Readmission And Mortality. Int J Epidemiol. 1996; 25:835–839.
2. Bay-Nielsen M, Kehlet H, Strand L, Et Al. Quality Assessment Of 26,304 Herniorrhaphies In Denmark: A Prospective Nationwide Study. Lancet. 2001;358:1124–1128.
3. Simons MP, Aufenacker T, Bay-Nielsen M, Et Al. European Hernia Society Guidelines On The Treatment Of Inguinal Hernia In Adult Patients. Hernia. 2009;13:343–403.
4. Porrero JL. El Cambio De La Cirugía De La Hernia En La Última Década. En:
5. MP Desarda. Surgical Physiology Of Inguinal Hernia Repair-A Study Of 200 Cases. BMC Surgery 2003; 3:1-9. [18] Simons MP, Kifignen J, Van Geldere D, Hoitsmahfw, Obertop H. Role Of The Shouldice Technique In Inguinal Hernia Repair: A Systematic Review Of Controlled Trials And Meta-Analysis. Br J Surg 1996; 83:734-8.
6. Hernia Repair Procedures. Arch Surg 1998; 133: 974-8. [21] EU Hernia Trialist Collaboration. Mesh Compared With Non-Mesh Methods Of Open Groin
7. Mcgillicuddy JE. Prospective Randomized Comparison Of The Shouldice And Lichtenstein
8. Mitura K, Romanczuk M. Comparison Between Two Methods Of Inguinal Hernia Surgery—Lichtenstein And Desarda. Pol Merkur Lekarski. 2008;24:392–395.
9. Szopinski J, Kapala A, Prywinski S, Et Al. Desarda Technique For Inguinal Hernia Treatment: First Polish Experiences. Pol Przegl Chir. 2005;77:159–168