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ORIGINAL ARTICLE

Comparison of Outcome of Desarda's Repair with Lichenstein Mesh Repair in Inguinal Hernia

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ABSTRACT

Aim: to compare the outcomes of lichenstein mesh repair with desarda's repair with in inguinal hernia.
Methods: This randomized control trial was conducted at department of surgery (Hospital name) on 64 patients divided in two groups, group A (Desdra) and Group B (lichenstein). Primary outcomes were surgical site infection, seroma and postop pain assessment on 7th postop day. Secondary outcomes were mean hospital stay, return to work and mean operative time.
Results: Desarda's group had significantly less operative times as compared to lichenstein group 40.38±3.26 vs 45.09±3.97 (p=0.0001). SSI, seroma and recurrence of hernia in both groups were not statistically significant. Mean postop pain on 7th day, mean hospital stay and return to work was statistically significant in both groups.
Conclusion: Desarda tissue-based repair, which is equally effective as the traditional Lichtenstein tension-free mesh repair, can be used to successfully repair primary inguinal hernias without mesh implantation.
Keywords: Desarda's Repair, Lichenstein Mesh Repair, Inguinal Hernia

INTRODUCTION

A hernia is a breach in the lower abdomen that permits the contents to protrude outwardly. A hernia takes place as the organ or fatty tissue compresses across a weak point in the adjoining muscle or soft tissue termed fascia[1]. Males are reported to have a higher risk of inguinal hernia nearly 27% as compared to females at 3% [2]. A study observed that approximately 10% of all surgical operations are performed for the repair of inguinal hernia. Surgeons execute inguinal hernia repair regularly [3]. Every year, around 800,000 repairs are accomplished. To avoid complications, medical practitioners advise that all symptomatic hernias should be repaired[4,5]. With the objective of tension-free repair and defect closure, an open or laparoscopic method is commonly performed. For tension-free repair, the mesh is widely utilized. When the mesh is not a possibility, primary suture repair is an ideal choice[6].

Inguinal hernia in case of tissue and prosthetic repair can be achieved by performing an open technique as well as laparoscopic method[7]. In adults, Lichtenstein mesh repair is the therapeutic option for a primary inguinal hernia as per the guidelines of the European Hernia Society (EHS) 2009[8]. The Lichtenstein mesh repair developed in 1984 has a rate of recurrence at around 4%. Desarda presented a new tissue-based hernia repair procedure in 2001, which he claims has a 0% rate of recurrence[9]. The Shouldice approach has a risk of recurrence of around 1.7% but in certain investigations up to 15%, based on the expertise[10].

The optimum methodology for inguinal hernia repair ought to be simple to learn, economical, safe, and allow rapid recovery to normal activity[11]. Even though the Lichtenstein repair covers these traits but it has considerable challenges as well such as abdominal wall tightness, discomfort, surgical-site infection, foreign body symptoms, and mesh migration[12,1].

The high cost of mesh and the strong probability of consequences have encouraged surgeons to explore other procedures or implement modifications to established ones. Desarda repair for inguinal hernias is focused on the establishment of a robust, and posterior wallwhich is physiologically active. The weak posterior wall of the inguinal canal is replaced with an exterior oblique muscular aponeurosis band that is also fortified by the exterior oblique muscle[13,14].

The study objective was to compare the effectiveness of the tissue-based Desarda repair with the Lichtenstein procedure for inguinal hernia repair to improve quality of life.

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MATERIAL AND METHODS

This randomized control trial study was performed from March 2021 to March 2022 in Department of General Surgery (Hospital Name) after taking approval from the hospital's ethical review board. Using non probability sampling technique, 64 patients were selected for the study. The inclusion criteria were strictly followed, which was; patients including both genders having age between 18 to 60 years presenting with inguinal hernia. Patients with an inguinal or inguinoscrotal bulge that is evident, having coughing impulse, inability to get above the swelling, and a dull ache in the inguinal area were diagnosed as inguinal hernia. Patients below the age of 18 years, all complicated inguinal hernia, patients with obstructed and strangulated hernia, recurring hernia, patients who were underweight (BMI < 18.5 kg/m^2) and obese (BMI > 30 kg/m^2) were excluded from the study.

Patients were divided into two groups using blocked randomization technique. Patients undergoing Desarda's repair were assigned to group A and patients undergoing Lichtenstein's mesh repair were assigned to group B. 32 patients were accommodated in each group.

All the patients were subjected to complete history followed by complete physical examination and routine pre-operative baseline lab investigations. A team of surgeons having experience of more than five years post fellowship performed the surgeries in both groups, Desarda tissue-based repair and Lichtenstein mesh-based repair. All patients undergoing Desarda's repair surgery were treated by a single surgical unit, whereas the rest of the department used the Lichtenstein repair approach. Anaesthesia was administered based on the anaesthetist's recommendation following a thorough preanaesthetic examination. In all surgeries, an oblique inguinal incision was employed. The external oblique aponeurosis (EOA) was dissected and assessed. Patients were followed till one-year post op to assess the outcomes.

The primary outcome variables were surgical site infection, seroma, recurrence of hernia after less than one year and postop pain which was assessed on 7th postop day on VAS pain score scale, 0 showed no pain and 10 labeled severe pain. Secondary variables were mean operative time, mean hospital stay and return to work.

The sample size was calculated using open epi calculator. The sample size was calculated taking mean operative times in minutes 28.91±5.82 min in Desarda's group and 34.07±8.63 mins in Lichtenstein group[19], confidence interval was 95% and power was taken 80%. The calculated sample size was 64.

Data analysis was performed using IBM SPSS 24. Categorical variables are presented as frequencies and percentages while numerical variables are presented as mean and standard deviation. For comparison between numerical outcomes, independent samples T-test was used with P<0.05 as statistically significant. For comparison of categorical variables Chi square test was used with P<0.05 as statistically significant.

RESULTS

This study was conducted on 64 patients divided in two groups. Group A patients underwent Desarda's repair techinique and Group B patients underwent Lichtenstein's repair technique. The mean age of group A patients was 38.69±12.45 years and 41.94±38.69 years in group B (p=0.29). According to the distribution of gender, there were 18(56.2%) males in group A and 17(53.1%) males in group B, there were 14 (43.8%) females in group A and 15(46.9%) females in group B (p=0.08). There was no statistical significance between both groups regarding age and gender. Table 1 represent the comparison of primary outcomes between both groups. SSI was found in 3.1% of the patients in group A and 6.2% of the patients in group B (p=0.55). Seroma was found in 6.2% patients in group A and 12.5% patients in group B (p=0.39). Recurrence of hernia and seroma were not statistically significant in both groups. Mean postop pain on 7th day was 1.50±0.50 in group A and 2±0. 76 in group B (0.003), the difference was statistically significant.

Table 2 represents the secondary outcomes between both groups. Mean hospital stay in group A was 2.66±0.65 days and 3.09±0.81 days in group B (p=0.02). Return to work was 10.81±2.44 days in group A and 14.09±2.70 days in group B (0.0001). Mean operative time in group A was 40.38±3.26 mins and 45.09±3.97 mins in group B (p=0.0001). The difference was statistically significant in all secondary outcomes between both groups.

Table 1: Comparison of primary outcomes between both groups

Primary outcomes	Group A (Desarda)	Group B (Lichtenstein)	P value
Surgical site infection (SSI)	1 (3.1%)	2 (6.2%)	0.55
Seroma	2 (6.2%)	4 (12.5%)	0.39
Recurrence of hernia	0	0	N/A
Post-operative pain score on 7th day (Mean±SD)	1.50±0.50	2±0. 76	0.003

Table 2: Comparison of secondary outcomes between both groups

Secondary outcomes	Group A (Desarda)	Group B (Lichtenstein)	P value
Mean hospital stay (days)	2.66±0.65	3.09±0.81	0.02
Return to work (days)	10.81±2.44	14.09±2.70	0.0001
Mean operative time (mins)	40.38±3.26	45.09±3.97	0.0001

DISCUSSION

The current study compared the Desarda approach to the standard Lichtenstein procedure for postoperative complications and clinical outcomes after primary inguinal hernia reconstruction.

The average age of patients included in both groups was comparable in our study (p=0.2), and there was no significant difference in the average age of patients included in both groups. Similarly, no statistical significant difference was found in the gender distribution between both groups (p=0.8).

Desarda's group had a lower operating time (40.38±3.26 mins) than the Lichtenstein group (45.09±3.97 mins) in our study, and this difference was statistically significant (p=0.0001). The length of a surgery is a surgeon-dependent variable that represents the easiness of the procedure. Manyilirah et al[15, 16] also reported similar findings. That resume to work was significantly earlier in the desarda's group (10.81±2.44 days) as compared to linchtenstein group (14.09±2.7 days). There was statistically significant difference between both groups (p=0.0001). Similar findings were reported by a study[8] conducted in Pakistan, the average time that is taken to resume to work was 11.10±2.32 days in desarda's groups however it was 13.92±2.24 days in Lichtenstein group (p<0.0001). Our findings contradict those of two earlier studies, which found no significant differences in the time it took for both groups to return to normal gait, basic physical routine, or household activities[17,18]. These disparities may be attributable to variances in the definition of day to return to normal gait from one study to the next, as well as other factors such as patient age and the effect of postoperative pain.

The difference in average hospital stay following repair by the two procedures is statistically significant (p=0.000), according to our findings. When compared to Lichtenstein group, Desarda's group's average hospital stay is shorter. Abbas et al[1] found that the Desarda surgery resulted in a shorter hospital stay (2.58 days) than the Lichtenstein treatment (3.90 days). The Desarda group also had a shorter hospital stay, according to Ahmad U et al[8] .Comparing the postop complications, we found significant difference in the mean postop pain between both groups on 7th postop day (p=0.003). Our findings are in agreement with Gedam BS et al[10] they reported a significant difference between postop pain on 7th day (p=0.0009). In contradiction to our findings Arafa AS et al[20], according to their study they found that there was not significant difference in mean postop pain between desarda's group and linchtenstein group.

Both groups have similar rates of postoperative complications, and there is no statistically significant difference between Desarda and Lichtenstein. There were no significant differences in seroma development between the Desarda's group and Lichtenstein group (p=0.39). The increased risk of seroma after employing synthetic mesh could be related to the mesh's effect on surrounding tissues[21].

CONCLUSION

Desarda's repair, which is equally effective as the normal Lichtenstein repair, can be used to treat primary inguinal hernias without mesh implantation. Desarda repair is a simple and quick surgery with no tissue dissection or repair complexity. Desarda repair may result in a faster recovery period, earlier return to work, shorter hospital stays, and a lower rate of seroma formation. Because of the low cost and recurrence rate, as well as restricted resources, our research supports the adoption of Desserda repair in underprivileged nations.

Conflict of interest: Nil

REFERENCES

1. Abbas Z, Bhat SK, Koul M, Bhat R. Desarda's no mesh repair versus lichtenstein's open mesh repair of inguinal hernia: A comparative study. J Evol Med Dent Sci 2015; 4(77):13279-85.
2. Bashir SH, Afzal MO, Rafi YA. Desarda Technique for Inguinal Hernia Repair: A multicenter experience. Pak J Med Health Sci 2015; 9(1):311-13.
3. Afridi Z, Ahmad M, Ahmad M, Rehman M, Ahmad R, Rashed M, et al. Desarda repair for inguinal hernia: An initial experience at Khyber Teaching Hospital, Peshawar. Pak J Surg 2018; 34(4):284-9.
4. Decker E, Currie A, Baig MK. Prolene hernia system versus Lichtenstein repair for inguinal hernia: a meta-analysis. Hernia. 2019;23(3):541-546.
5. Muschaweck U, Koch A. [Sportsmen's groin : Definition, differential diagnosis and treatment]. Radiologe. 2019;59(3):224-33.
6. Navaratne L, Ashrafian H, Martínez-Isla A. Quantifying tension in tension-free hiatal hernia repair: a new intra-operative technique. Surg Endosc. 2019;33(9):3040-49.
7. Mohan PB. Comparative study of open mesh repair and Desarda's no-mesh repair for inguinal hernia, in GMKMCH, Salem, India. Int Surg J. 2018;5(9):3139-45.
8. Ahmad U, Anwar A, Imran M, Aman Z. Desarda's versus Lichtenstein's mesh repair for inguinal hernia: A longitudinal study. Prof Med J. 2020;27(08):1621-25.
9. Youssef T, El-Alfy K, Farid M. Randomized clinical trial of Desarda versus Lichtenstein repair for treatment of primary inguinal hernia. Int J Surg. 2015;20:28-34.

10. 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;39:150-55.
11. Desarda MP. Inguinal herniorrhaphy with an undetached strip of external oblique aponeurosis: A new approach used in 400 patients. Eur J Surg 2001; 167:443-8.
12. 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(8):2693-99.
13. Syed O. Desarda's versus Lichtenstein technique of inguinal hernia repair. Int Surg J 2017;5(1):92-7.
14. Sowmya GR, Udapudi DG. Comparative study of Lichtenstein versus Desarda repair for inguinal hernia. J Evol Med Dent 2015;4(97):16261-55.
15. Von Elm E, Altman DG, Egger M, Pocock SJ, Gøtzsche PC, Vandenbroucke JP, Strobe Initiative. The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) Statement: guidelines for reporting observational studies. Int J Surg. 2014;12(12):1495-9.
16. 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 doubleblind RCT. Hernia. 2012;16(2):133-44
17. Szopinski J, Dabrowiecki S, Pierscinski S, Jackowski M, Jaworski M, Szuflet Z. Desarda versus Lichtenstein technique for primary inguinal hernia treatment:3-year results of a randomized clinical trial. World J Surg. 2012;5:984-92.
18. Desarda MP, Ghosh A. Comparative study of open mesh repair and Desarda's no-mesh repair in a District Hospital in India. East and Central Afr J Surg. 2006;11:28-34.
19. Akhtar MS, Mani SK, Alvi Y, Alam P, Rizvi SA, Raza MH. Desarda's versus Lichtenstein technique of inguinal hernia repair: a comparative study. International Surgery Journal. 2019 Sep 26;6(10):3719-26.
20. Arafa AS, Saad HA, Fayek F. Desarda vs lichtenstein technique for the treatment of primary inguinal hernia. Egypt J Surg. 2020;39(1):157.
21. Grant A. Open mesh versus non-mesh repair of groin hernia meta-analysis of randomized trials leased on individual patient data. Hernia 2002; 6(3):130-6
22. Gupta A, Sharma SC, Sharma JP, Singhal P. Comparison of tension free Desarda technique with Lichtenstein for inguinal hernia repair. International Surgery Journal 2019; 6(5):1528-33.
23. Desarda MP and Ghosh A. Comparative study of open mesh repair and Desarda's no-mesh repair in a district hospital in India. E C A Afr J Surg 2006; 11(2): 28-34.
24. Rodríguez P, Herrera P, Gonzalez O, Alonso J, Blanco H. A randomized trial comparing lichtenstein repair and no mesh desarda repair for inguinal hernia: A study of 1382 patients. East and Central African Journal of Surgery 2013; 18(2):18-25.