



AN OBSERVATION ON DESARDA TECHNIQUE OF INGUINAL HERNIA REPAIR

General Surgery

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ABSTRACT

Background: Inguinal hernia repair is one of the most commonly performed procedure in surgical practice throughout the world. The non-mesh repair technique of inguinal hernia by Mohan P. Desarda is becoming popular nowadays. Study of the outcomes of the procedure and comparison with other workers is desirable for wider acceptance of the procedure. **Objective:** To study the outcomes of inguinal hernia repair by Desarda technique. **Methodology:** This is an observational study of 32 patients with inguinal hernia repair by Desarda technique carried out in Dept. of general surgery, Patna Medical College and Hospital, Patna from October 2020 to October 2022. **Result:** Out of 32 patients included in the study 18 right sided, 12 left sided and 2 bilateral inguinal hernia was there. The mean age of study population was 42.72 ± 12.137 years. Mean operating time was found to be 60.81 ± 10.91 minutes. Majority (87.5%) of the patients experienced moderate pain (measured by VAS) on the first post-operative day which gradually decreased with the time. Different postoperative complications; hematoma in 1 patient (3.125%), seroma in 2 patients (6.25%), surgical site infection in 1 patient (3.125%), scrotal swelling in 2 patients (6.125%) and cord swelling in 1 patient (3.125%) were seen. **Conclusion:** Non mesh Desarda repair of inguinal hernia repair is associated with less operating time, early ambulation, less post operative pain and complication. As it doesn't use mesh so it is cost effective also and should definitely be encouraged.

KEYWORDS

Desarda inguinal hernia repair, Lichtenstein's repair, external oblique aponeurosis (EOA).

INTRODUCTION

Inguinal hernia is a very common surgical problem worldwide. In United States nearly 6,00,000 to 8,00,000 hernia repairs are performed each year making the hernia repair one of the most common operation performed by general surgeons.¹

Better understanding of the anatomy and physiology of inguinal hernia formation and improved surgical techniques have significantly improved the outcomes of inguinal hernia treatment. Different surgical methods have been developed to treat inguinal hernia in the past. Bassini repair technique published in 1880 has been in use for decades and served millions of people. Since then many modifications has been done leading to development of newer modern techniques like Shouldice repair, Lichtenstein mesh repair and laparoscopic mesh repair. So far Lichtenstein hernioplasty has been the standard treatment for open inguinal hernia repair, but as external mesh is used in this method so it has some limitations too. Chronic inguinal pain, mesh infection, seroma formation, foreign body sensation are common complications associated with Lichtenstein hernioplasty. Extra cost of the mesh is also involved.² The new technique as described by Mohan P. Desarda (2001) uses undetached strip of external oblique aponeurosis to strengthen posterior wall of inguinal canal. Mohan P. Desarda in his studies have found lesser complications and zero recurrence which is promising.^{3,4} The aim of this study is to observe, evaluate and compare the outcomes with different studies in terms of different complications like postoperative pain, chronic groin pain, seroma, hematoma, SSI, etc.

MATERIAL AND METHODS

This study was undertaken at Patna Medical College and Hospital. 32 patients of inguinal hernia randomly selected from the patients of inguinal hernia admitted through surgical outdoor from October 2020 to October 2022. All of these were operated by Desarda's technique of inguinal hernia repair. Patients were selected on the basis of inclusion and exclusion criteria.

Inclusion Criteria

1. Either sex
2. Age between 16- 65 years
3. ASA(American society of anaesthesiologist) physical status 1 and 2

Exclusion Criteria

1. Patients unwilling to participate in the study

2. Complicated hernia (including recurrent hernia)
3. Immunocompromised patients
4. Very thin EOA encountered at the time of operation

Study was conducted in accordance with the ethical principles of Helsinki and approval of relevant of the relevant committee of the institute were taken. Written informed consent was taken from each patient after explaining in detail about the objective of the study, risks and benefits, confidential handling of personal information and the voluntary nature of participation and the rights to withdraw anywhere from the study, etc.

Data Collection

The data of each patients were collected as per specified pro forma.

Statistical Analysis

Descriptive statistics was done for all data. Statistical significance was taken as $p < 0.05$. The data was analyzed by SPSS for windows version 26. Microsoft excel 2013 was used to generate charts.

RESULTS

The study sample comprised of 32 males only. The overall mean age of patients included in the study was 42.7 ± 12.14 years (range: 16- 65 years). The most common type of hernia was found to be indirect (26 patients; 81 %). During operation the incidence of combined (both direct and indirect) and sliding hernia was found to be 12.5 % 25 % (4 patients and 8 patients) respectively. The perception of pain in our study was noted as visual analogue score (VAS).

Table 1- Pain Score (VAS) Comparison

Intensity of pain	No pain	Mild pain	Moderate pain	Severe pain
1st day	0	4	28	0
7th day	0	30	2	0
30th day	18	14	0	0

Majority (75%) of patients in our study had short duration (up to 5 days) of hospital stay with a mean hospital stay of 6 ± 1.64 days. Other patients (25%) wanted to be discharged only after total stitch removal, so they had a longer stay in hospital. This is comparable to results by Sagar et al.¹²

In our study we did not face any intraoperative difficulty or

complication. The postoperative complications which we encountered were seroma, scrotal swelling, cord swelling and hematoma. No recurrence was observed during follow up.

Table 2- Postoperative Complications

Complications	No. of patients	Percentage	p- value
Hematoma	1	3.125%	0.112
Seroma	2	6.25%	0.240
SSI	1	3.125%	0.112
Scrotal swelling	2	6.25%	0.240
Cord swelling	1	3.125%	0.112

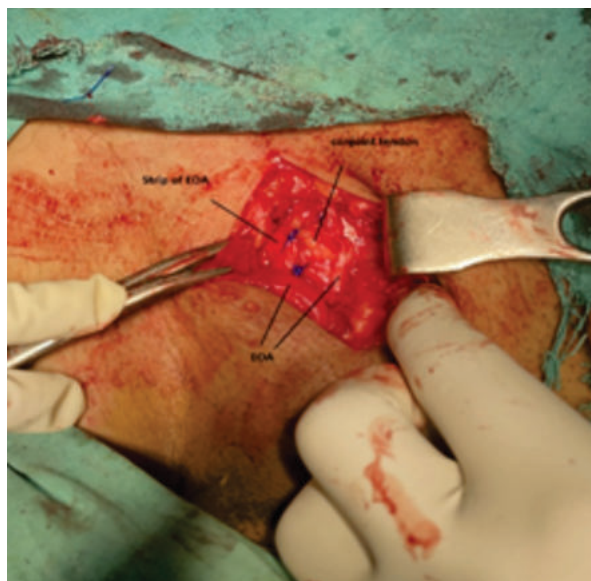


Figure 1- Suturing Of Strip Of EOA With Conjoint Tendon



Figure 2- Final Outcome

DISCUSSION

In this study a total of 32 patients had been operated by open no mesh Desarda technique. Mean operating time in this study was found to be 60.81±11 minutes (range being 45-90 minutes). However in majority of patients (78%) the operating time was found to range from 45-65 minutes. Tamer et al.⁵ (2015) found the mean operating time of 59.4±6.3 minutes in Desarda group which is almost identical with the observed in our study. On the other hand Tamer et al.⁵ also observed that the mean time for Lichtenstein repair was 72.3±12.2 minutes which is higher than those observed to Desarda repair. Chirag Pereira et al.⁶ (2022) in his meta-analysis of 536 patients found significant difference in operative time between Desarda and Lichtenstein group with mean deviation - 19.55, p=0.02 (shorter in Desarda group).

Probal et al.⁷ (2017) also found significantly shorter operating time in Desarda group than in Lichtenstein group (p<0.05). These findings are in favour of our study.

Though the difference in operating time may also be attributed to surgeon's expertise and experience with more number of surgeries still from different studies we can conclude that operating time in Desarda group is slightly lower as compared to Lichtenstein's group.

The perception of pain in our study was noted as visual analogue score (VAS). On 1st post-operative day 28(87.5%) patients experienced moderate pain (VAS= 4-6). Other 4 (12.5%) patients experienced a VAS= 3 (mild pain). On 7th post-operative day only 2(6.25%) patients experienced a VAS of 5 (moderate pain), while majority of patients (93.75%) experienced only mild pain (VAS < 5). On 30th post-operative day 18(56.25%) patients had no sensation of pain while other 14(43.75%) had mild pain (VAS < 5). So it was clear that pain severity gradually declined with time. Similar pattern has been seen in studies performed by other authors also. M.P. Desarda⁸(2006) in his study obtained only mild pain. For 2 days in 72% patients, for 4 days in 24% and for 7-15 days in only 4 % patients. Tamer Youseff et al.⁵ in his study found lower pain score in Desarda group. B.S.Gedam et al.⁹ (2017) and Probal Neogi et al.¹⁰ (2017) in their study found significantly lower postoperative pain in Desarda group. From our study as well as from different studies conducted so far it is evident that Desarda technique is indeed a tension free repair and better than Lichtenstein in terms of pain especially in early postoperative days (1st week) but at the end of month pain becomes almost negligible in both the technique of inguinal hernia repair.

In our study time for ambulation, gaining free mobility and time taken to return to non- strenuous activities were calculated in hours and days. It was seen that majority of patients (93.75%) were ambulatory within 24 hours. 62.5 % were ambulatory as early as within 8-10 hours. 93.75 % of the patients were moving freely in 2 days while rest within 3 days. 22 patients (68.75%) returned to non- strenuous activities within 10 days and others were able to do so within 15 days. In our study mean time for ambulation was 9.97±4.8 hours while mean time for non-strenuous activities was 8.47± 2.92 days. This is comparable to results by M.P. Desarda⁸(2006). Different comparative studies claim that return to normal gait, basic work is earlier in Desarda compared to Lichtenstein method. B.S. Gedam et al.⁹, Ankith Yarlagadda et al.¹¹(2022) found significantly lower time to return to basic activities in Desarda group. So we conclude that time taken to mobilise and achieve normal gait is definitely lesser with Desarda technique of hernia repair. Results about time taken to return to basic normal work/ house work varies in different studies in significance but is consistently lower in Desarda group. . This may be attributed to less tissue handling, lesser dissection and less postoperative pain.

In our study only 2 patients developed different complications; one patient developed hematoma, seroma, SSI and scrotal swelling while another patient developed seroma, scrotal swelling and cord swelling. Hematoma was dealt with drainage, intravenous injection of tranexamic acid and tight bandage. Seroma and surgical site infection were dealt with antiseptic dressing and iv antibiotics. For Cord and scrotal oedema oral anti-oedematous drugs and scrotal support were given leading to resolution.

None of the postoperative complications were found to be statistically significant in our study (table 2). Our result is comparable to Sagar et al.¹² (2019). Results of different comparative studies has been consistent about lower postoperative complications in Desarda group than Lichtenstein group (Probal et al.⁷, Dhanshree et al.¹³, B.S.Gedam et al.⁹, Ankith Yarlagadda et al.¹¹). Chirag Pereira et al.⁶ found that risk of developing postoperative complication was significantly higher in Lichtenstein repair than with Desarda repair (p=0.0005).

As of now Lichtenstein technique is still gold standard for treatment of inguinal hernia repair, however mesh has it's own drawbacks. Based on different studies so far it is evident that more postoperative complications in Lichtenstein are due to mesh along with more dissection of tissue. SSI and foreign body sensation are major mesh related complication. Chronic groin pain is also a known complication of mesh due to entrapment of inguinal nerve in mesh⁴. In addition inflammatory response to implanted foreign material, pain may last longer. External oblique muscle gives additional strength to weakened internal oblique and transversus abdominis muscle thus preventing hernia recurrence³. Tension created in this strip is graded. Stronger

intra-abdominal blows result in stronger abdominal muscle contractions leading to increased tension in this strip to give graded protection. At rest the strip is without any tension. Thus, a strong and physiologically dynamic posterior wall is created. The aging process is minimum in the tendons and aponeurosis, so a strip of the external oblique, which is tendo-aponeurotic, is the best alternative to the mesh³.

In our study there was no recurrence but our study has some limitations including small sample size and short study period, so long term results like late recurrence rate could not be assessed.

CONCLUSION

Results of this study concludes that Desarda's repair is reliable for inguinal hernia repair with no or less recurrence and safe from mesh related complications. It is low cost as no mesh is used. So we can conclude that, Desarda repair has excellent results and relatively less complications and is of low cost, and as such Desarda repair may be a good alternative to Lichtenstein's repair and should be encouraged especially in developing countries as it entails low cost and can be performed with minimum of infrastructure.

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