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Comparative study of open mesh repair and Desarda's no mesh repair in a tertiary care hospital.

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Abstract

Aims: To assess and compare the efficacy of Desarda's no mesh repair over prosthetic mesh hernia repair (Lichtenstein) for the treatment of primary inguinal hernia. **Methods and Material:** This prospective study was carried out in the Department of Surgery at Shaheed Ziaur Rahman Medical College Hospital, Bogra from January 2014 to December 2016. A total of 100 male patients were randomly assigned. 50 patients were operated by Desarda's no mesh repair technique (D group) and 50 patients were operated by prosthetic mesh hernia repair (Lichtenstein) (L- group). The outcomes in terms of early and late complications were evaluated in each group and compared. **Results:** In L-group 07 patients were noticed by early and late complications. In D-group two (02) patient was affected by early complication. The outcomes in each group were statistically analysed using Chi-Square test. **Conclusions:** The efficacy of Desarda's no mesh repair looks very good. It has minimum postoperative complication and no recurrence. This reason Desarda's no mesh repair based on physiological principle has good potential to become a standard procedure in groin hernia repair.

Key-words: Inguinal hernia, Lichtenstein repair, Desarda's no mesh repair

Introduction

Inguinal hernias are one of the most common surgical problem in all over the world. The estimated lifetime risk for inguinal hernia is 27% for men and 3% for women.¹ Annual morbidity rates in various countries vary from 100 to 300 per 100,000 citizens.² Inguinal hernia repair is one of the most frequently performed surgical procedures worldwide. Better surgical techniques and good understanding of the anatomy and physiology of the inguinal canal have undoubtedly improved the outcomes patients after surgery.

The Desarda's no mesh repair technique presented in 2001, is an original hernia repair method using an undetached strip of External Oblique Aponeurosis (EOA). In the European Hernia Society (EHS) guidelines, prosthetic mesh hernia repair (Lichtenstein) is particular one and endoscopic

methods are recommended for treatment of symptomatic primary inguinal hernia in adult men. In a departure from this firm opinion presented by the EHS, the Shouldice method has been acknowledged to be acceptable as well.³

The synthetic prostheses most often used in the inguinal area can create new clinical problems, such as foreign body sensation in the groin, discomfort, and abdominal wall stiffness, which may affect the everyday functioning of the patient.⁴ Surgical-site infections, often with clinical symptoms delayed for many years, are more frequent after hernia treatment using mesh.^{5,6} Migration of the mesh from the primary site of implantation in the abdominal cavity is one of the most dangerous complications.⁷⁻⁹ Intense chronic inflammatory process typically associated with foreign body reactions around the mesh prosthesis

may produce meshoma or plugoma tumors, the treatment of which becomes a new surgical challenge.¹⁰⁻¹² Additionally, procreation and sexual function are reported seriously affected after surgical hernia treatment with mesh.⁸⁻¹³ Thus, we are still far from accomplishing everything in the hernia surgical field, and complications remain the major clinical issue.

The observed complication rates and postoperative dysfunction have influenced many investigators to look for new hernia repair techniques or to modify old ones. An example of such efforts is the Desarda method, which was presented in 2001 and became a new surgical option for tissue-based groin hernia repair.^{14, 15}

Materials and Methods

This is prospective study of 100 patients with unilateral, reducible inguinal hernia, randomly selected in the Department of Surgery, Shaheed Ziaur Rahman Medical College Hospital, Bogra from a period of 2014 to 2016. All are male patients who are of 18 to 72 years of age. Patients with recurrent or obstructed hernia were excluded from this study. 50 patients were operated by Desarda's no mesh repair technique and 50 patients were operated by prosthetic mesh hernia repair (Lichtenstein). All operations were done under SAB after taking fully informed consent.

Operative technique

In Desarda's no mesh repair technique, EOA was exposed through a regular oblique inguinal incision and an assessment was made about the strength of the EOA. The EOA was cut in line with upper crus of superficial inguinal ring. The sac was excised in indirect hernia and inverted in direct hernia. The upper leaf of EOA was sutured with inguinal ligament from pubic tubercle to deep ring using a No-1 monofilament polydioxanone (PDS) continuous suture.

Follow up

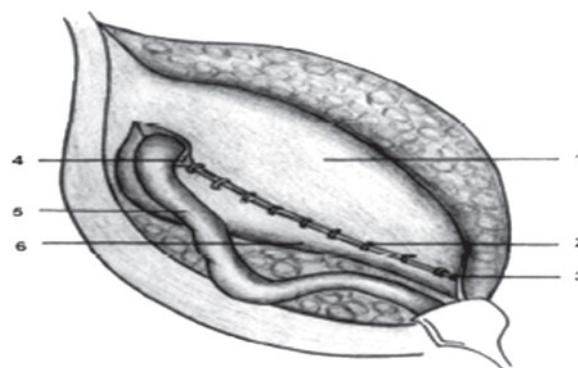


Figure 1. The medial leaf of the external oblique aponeurosis is sutured to the inguinal ligament. 1=Medial leaf; 2= Interrupted sutures taken to suture the medial leaf to the inguinal ligament; 3= Pubic tubercle; 4= Abdominal ring; 5=Spermatic cord; and 6= Lateral leaf.

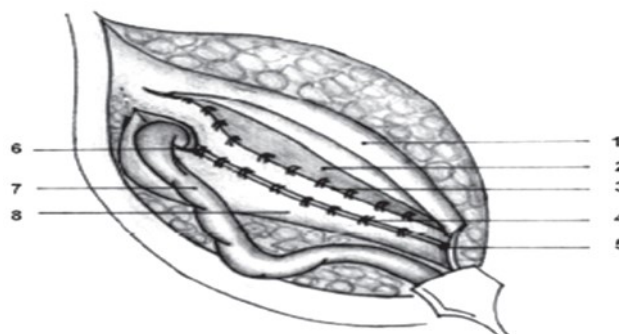


Figure 2. Undetached strip of external oblique aponeurosis forming the posterior wall of inguinal canal. 1=Reflected medial leaf after a strip has been separated; 2= Internal oblique muscle seen through the splitting incision made in the medial leaf; 3= Interrupted sutures between the upper border of the strip and conjoint muscle and internal oblique muscle; 4=Interrupted sutures between the lower border of the strip and the inguinal ligament; 5=Pubic tubercle; 6= Abdominal ring; 7=Spermatic cord; and 8= Lateral leaf.

In the post-operative period patients were closely monitored until discharge at 7 to 10 days. Follow up appointment were made at 30 days and at 3, 6, 12 months up to 2 years to search for any negative outcomes (late complications).

Results

There were 50 patients in both group (D & L). There were 2 complications in D-group, 1 is seroma formation and another 1 was hematoma.

In L-group, there were 7 complications aroused. 2 were wound site infection, 1 was hematoma, and 1 was srotal hematoma. 2 patients developed chronic groin pain (pain persisting for 3 months and recurrence of hernia was noticed in 1 patient.

Table: Outcomes and postoperative complications, by operative method

Parameter	Desarda (n=50)	Lichtenstein (n=50)	<i>p</i> [*]
Srotal hematoma	0	1	
Hematoma	1	1	
Seroma	1	0	
Surgical site infection	0	2	
Chronic groin pain	0	2	
Recurrence	0	1	

The Chi-square Statistics 5.3333 ,P value is 0.8254773.

The result is highly significant as p value is > 0.5

Discussion

The difference in complications is highly significant (p value= 0.8254773). There was no chronic groin pain and no recurrence in D-group. The appearance of bulge accompanying a cough was taken as recurrence of hernia. Total 3 patients in L-group had re-operation. All the re-surgeries should extensive fibrosis in the inguinal canal due to foreign body reaction of mesh. In 1 patient who was exposed for chronic groin pain, the spermatic cord was seen enmeshed in strong fibrous tissue. This foreign body reaction in mesh repair is responsible for spermatic cord and nerve entrapment leading to chronic pain. The Desarda's technique being a pure tissue repair will not cause extensive fibrosis as seen in mesh repair.

Possible damage to the spermatic cord and nerve entrapment following mesh repair due to extensive fibrosis are important concerns raised by Lichtenstein technique.

Chronic pain in the groin affect the quality of everyday function of patient which is an important consideration of every surgeon. Use of synthetic mesh in young patient is still controversial. The effect of mesh in human body for lifetime is still not known. And data are appearing about sexual function impairment following mesh implant; as a result many surgeon tries to avoid mesh for inguinal hernia in younger age group.

Conclusion

Inguinal hernia is a very common surgical disease affecting mankind. Newer techniques are developed as complication rates of older ones are unacceptable. The prosthetic mesh hernia repair (Lichtenstein) and its modifications are widely practiced all over the world but their failures are more. Desarda's no mesh repair technique does not need any costly mesh or laparoscopic instruments and it takes less operating time.

The output of Desarda's no mesh repair technique appears promising. This technique has minimal complication rate with no recurrence or chronic groin pain. So it can confidently conclude that Desarda's no mesh repair technique is safe, surgically viable, economic and a standard procedure in primary inguinal hernia surgery.

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