Research Article

Outcome of Desarda repair in inguinal hernia: a study in northern part of Bangladesh

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Abstract

Background: Inguinal hernia repair by Desarda method provides a new concept of repair maintaining the physiology of inguinal canal. Repair without mesh gives another benefit of cost-effectiveness and freeing of foreign body–related complications.

Objective: To observe the outcome of inguinal hernia repair by Desarda method as an alternative to most popular Lichtenstein repair.

Materials and Methods: The longitudinal study was conducted from July 2012 to June 2015. A total of 184 patients with uncomplicated inguinal hernia were included in our study. After operation pain was assessed by visual analog score (VAS). In each follow-up, pain was scored and gait was assessed. Patients were seen during follow-up at 7 and 30 days, and 6, 12, and 24 months after surgery. The secondary outcomes were general and local complications, length of time to return to various levels of everyday activity, and abdominal wall stiffness in the groin area. SPSS, version 16.0, software programs were used for statistical calculation.

Result: Of 184 patients recruited, 81% were men and 19% were women. Mean age was 45.42 years, SD ±10.08. A total of 63% patients in this study belong to low socioeconomic class. In the first postoperative day (POD), 73 patients felt mild pain and on third POD majority (168) felt only mild pain. Only 6.5% patients developed postoperative complications, mainly surgical site infection. A significant number of (49%) patients showed attribution of normal gait in second POD and 42% patients in third POD. A total of 98.37% patients had no complaint of chronic pain. 99% patients had no recurrence, and only 1% again developed inguinal hernia.

Conclusion: As the outcome of this relatively new method is good. So, this physiologically sound technique can be widely practiced in our country as evident from our result.

KEY WORDS: Inguinal hernia, Desarda, Bangladesh

Introduction

The inguinal hernia is the most common hernia in men and women but much more common in men.[1] Estimated lifetime for inguinal hernia is 27% for men and 3% for women.[2] Elective surgery for inguinal hernia is a common and simple operation. Lichtenstein repair is the most commonly performed operation in the developed world. Lichtenstein mesh repair, however, has its own shortcomings that include its initial cost, nonavailability in many parts of the developing world, tendency to fold or wrinkle, and chronic groin sepsis that requires mesh removal. Because of the observed complications and postoperative dysfunctions, many investigators look for new hernia repair. An example of such effort is the Desarda method, which was presented in 2001 and became a new surgical option for tissue-based groin hernia repair.[3] A strip of external oblique aponeurosis was used for strengthening of the

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posterior wall alternative to a prosthetic mesh. It is simple, safe, tension free, permanent, does not use weakened muscle or transversalis fascia for repair, and does not require any prosthetic mesh. Cost-effectiveness is a factor in the management of the disease in this northern zone of our country because most of the people in this region are poor. So, this study was undertaken to observe the outcome of inguinal hernia repair by Desarda method as an alternative to most popular Lichtenstein repair.

Materials and Methods

This study was conducted from July 2012 to June 2015. A longitudinal study was done. The study was conducted in two settings, one in Rangpur Medical Hospital and another in a private setting where operations were performed by our team. All uncomplicated inguinal hernias were included in our study. Recurrent inguinal hernia and those who did not agree to participate in this study were excluded. A total of 184 patients were included in our study. All patients were properly counseled and an informed written consent was obtained from each patient. The patient characteristics recorded were age, sex, socioeconomic status. All operations were done under regional anesthesia (sub-arachnoid block). Each patient received intramuscular diclofenac at first postoperative day (POD) and oral diclofenac for the next 4–5 days. Pain was assessed by visual analog score (VAS). Also in addition, pain was recorded with the use of the Sheffield scale: 0, no pain; 1, no pain at rest but it appears during movement; 2, temporary pain at rest and moderate during movement; 3, constant pain at rest and severe during movements. Postoperative follow-up was given twice hourly just after the operation and on first, second, third POD, and then on seventh POD. In each follow-up, pain was scored and gait was assessed. Return to normal activity was described as the patient's ability to perform elementary activities (i.e., dressing, walking, bathing [basic activity]); usual activities at home (i.e., preparing food, cleaning house [home activity]); and returning to all previously performed activities (work activity). Patients were examined during follow-up at 7 days, 30 days and 6, 12, and 24 months after surgery. During follow-up, physical examinations and patient assessments were done. The primary outcomes were hernia recurrence and chronic pain, defined as, moderate (VAS 30–54) or strong (VAS >54) pain lasting more than 6 months after surgery. The secondary outcomes were general and local complications, length of time to return to various levels of everyday activity, and abdominal wall stiffness in the groin area.

Operative Procedure

Desarda has described the operation where a 1- to 2-cm strip of external oblique aponeurosis lying over the inguinal canal is isolated from the main muscle but left attached both medially and laterally. Medial incision is made in external oblique aponeurosis along the medial crus of superficial ring, another incision is made on external oblique aponeurosis leaving a 1.5–2 cm of strip. After that medial end of the strip is sutured with conjoint tendon by nonabsorbable 1/0 prolene and lateral end with inguinal ligament, reinforcing the posterior wall of the inguinal canal. As the abdominal muscles contract, this strip of aponeurosis tightens to add further physiological support to the posterior wall.

Statistics

SPSS (Statistical Program for Social Science) version 16.0 software programs were used for statistical calculation.

Result

The mean age was 45.42 (21–65 years), standard deviation (SD) ± 10.08. Majority of patients were seen in 41–50 years of age group. Inguinal hernia is more prevalent in males. A total of 116 (63%) patients in this study belonged to low socioeconomic class. A total of 126 (68%) number of the patients in this study were diagnosed as right-sided inguinal hernia and a very few number (6) patients were diagnosed as bilateral. In the first POD, 73 patients felt only mild pain and on third POD majority (168) patients felt only mild pain [Table 1].

Only 12 patients (6.5%) developed postoperative complications, among them seven patients had infection, three had seroma, and two had hematoma [Table 2].

A significant number of patients (91, 49%) showed attribution of normal gait in the second POD and 78 number of patients (42%) in the third POD. A total of 146 patients (79%) were discharged from the hospital within the second to third POD and only 10 patients (5%) stayed in the hospital for more than 5 days.

Mean time of return to basic activity was 2 (1–9) days, return to home activity was 8 (2–18) days, and return to work activity was 19 (14–90).

A total of 181 patients (98.37%) had no complaint of chronic pain, 182 patients (99%) had no recurrence, and only 1% again developed inguinal hernia [Table 3].

Discussion

The Desarda technique for inguinal hernia repair is a new tissue-based method. In our opinion, this newly proposed repair method satisfies the principles of "no tension" presented by Lichtenstein. The aponeurotic strip is displaced from the anterior to the posterior wall of the inguinal canal without additional tension at the posterior wall.[4,5]

In the first POD 73 patients felt mild pain and on the third POD majority, that is, 168 patients felt mild pain. This pattern of pain was similar to a study done in Africa.[6] Chronic pain has been defined as lasting >3 months by the International Association for the Study of Pain.[7] We found that 98.37% of patients had no complaint of chronic pain. Only 1.63% of patients had chronic pain. Other reported complications were

Table 1: Postoperative pain (*n* = 184)

POD	Number of patient with pain	
	Mild	Moderate
First POD	73 (39.67%)	111 (60.33%)
Second POD	124 (67.39%)	60 (32.61%)
Third POD	168 (91.30%)	16 (8.70%)

POD, postoperative day.

Table 2: Postoperative complications (*n* = 184)

Parameter	Patients (*n* = 184)
Scrotal edema	
7 days	7 (3.80%)
30 days	4 (2.17%)
6 months	0
Testicular atrophy	0
Inguinal hematoma	2 (1.08%)
Ecchymosis	6 (3.26%)
Seroma	3 (1.63%)
Surgical site infection	7 (3.80%)
Return to basic activity (days)	2 (1–9)
Return to home activity (days)	8 (2–18)
Return to work activity (days)	19 (14–90)

Table 3: Recurrence within 2 years

Recurrence	Number	Percentage
Present	2	1.08
Absent	182	98.92

surgical site infection, hematoma, seroma, and recurrence. Similar types of complications were found in another study.[8] Other less frequent complications were scrotal edema, ecchymosis, and so on.

A significant number of patients, that is, 91 (49%) patients showed attribution of normal gait in second POD and 78 patients (42%) in third POD. A total of 146 patients (79%) were discharged from hospital within the second to third POD and only 10 patients (5%) stayed in hospital for more than 5 days, who developed early complications. Other short time study of Desarda shows the same type of attribution of normal gait.[8] Mean time of return to basic activity was 2 (1–9) days, return to home activity was 8 (2–18) days, and return to work activity was 19 (14–90) days. This type of mean time was also found in another study.[3]

A total of 182 patients (99%) had no recurrence, only 1% again developed inguinal hernia. In a study of 6 months follow-up of the Desarda approaches, they observed no recurrence.[9]

In the modern world, the cost of the medical treatment becomes a real issue. The cost of inguinal hernia treatment, a tiny fraction of all health expenses, is not insignificant, however, especially in the developing countries in Asia or Africa. One indisputable advantage of Desarda technique is its low cost. That is why many published articles recently demonstrated an interest in this technique.[6,10,11] The cost of the Desarda operation is low because a synthetic prosthesis is not needed. The price of composite meshes or even heavy polypropylene meshes, as well as their accessibility, could be an important issue in the developing countries. We confirmed that even the inguinoscrotal hernias, which are frequently seen in the African and Asian countries, can be successfully treated with the Desarda technique. Economic issues are not the only considerations. The use of synthetic material is still controversial in young patients. The effect of polyproplylene placement or other synthetic mesh inside human organism for a lifetime is still unknown. Also, data are appearing about sexual impairment after mesh implantation; and as a result, many surgeons try to avoid mesh prostheses for hernia treatment in young patients.[3]

Conclusion

We have started this physiological repair with a very good outcome. On the basis of these results, the technique has the potential to enlarge the number of tissue-based methods available to treat groin hernias. The most evident indications for use of the Desarda technique include use in young patients, in the presence of financial constraints, or if a patient disagrees with the use of mesh. So, it is recommended that Desarda inguinal hernia repair can be introduced widely in training programs in our country.

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