Journal of Advanced Medical and Dental Sciences Research

@Society of Scientific Research and Studies

Journal home page: www.jamdsr.com doi: 10.21276/jamdsr ICV 2018= 82.06

(e) ISSN Online: 2321-9599; (p) ISSN Print: 2348-6805

Original Research

Assessment of outcome of sutureless mesh repair of inguinal hernia: An observational study

Vinod Kumar Saxena[1], Suvek Varshney[2]

[1]Assistant Professor, Department of General Surgery, Venkateshwara Institute of Medical Sciences, Gajraula, U.P., India;

[2]Assistant Professor, Department of General Surgery, Major SD Singh Medical College and Hospital, Farrukhabad, U.P., India

ABSTRACT:

Background: Inguinal hernias account for 75% of abdominal wall hernias, with a lifetime risk of 27% in men and 3% in women. Repair of inguinal hernia is one of the most common operations in general surgery. Hence; the present study was undertaken for assessing the outcome of sutureless mesh repair of inguinal hernia. **Materials & methods:** A total of 20 male patients were enrolled in the present study. Inguinal hernia repair was performed by placing mesh on posterior inguinal wall and without applying fixation suture or glue. All the patients were kept fasting for 8 hours, the operation area was shaved and cleaned one day before surgery. All the procedure of Sutureless mesh repair of inguinal hernia was performed under the hands of skilled and experienced surgeons. Postoperative pain scores were analysed at different time intervals on a scale of 0 to 10 with 0 indicating no pain and 10 indicating maximum pain. All the results were recorded in Microsoft excel sheet and were analysed by SPSS software. **Results:** Mean postoperative pain score at 1 hour, 6 hour, 12 hour and 24 hour postoperatively were found to be 4.66, 3.82, 3.10 and 2.13 respectively. Mena duration of hospital stay was found to be 1.19 days respectively. Postoperative seroma formation and postoperative infection were found to be present in 1 patient each. **Conclusion:** Sutureless mesh repair in the treatment of inguinal hernia cases is an effective technique in terms of occurrence of minimal postoperative complications and lesser time of procedure.

Key words: Inguinal hernia, Repair, Sutureless

Received: 13 August, 2019 Revised: 21 September, 2019 Accepted: 24 September, 2019

Corresponding author: Dr. Suvek Varshney, Assistant Professor, Department of General Surgery, Major SD Singh Medical College and Hospital, Farrukhabad, U.P., India

This article may be cited as: Saxena VK, Varshney S. Assessment of outcome of sutureless mesh repair of inguinal hernia: An observational study. J Adv Med Dent Scie Res 2019;7(10):188-191.

INTRODUCTION

Abdominal wall hernias are common, with a prevalence of 1.7% for all ages and 4% for those aged over 45 years. Inguinal hernias account for 75% of abdominal wall hernias, with a lifetime risk of 27% in men and 3% in women. Repair of inguinal hernia is one of the most common operations in general surgery. Ninety five per cent of patients presenting to primary care are male, and in men the incidence rises from 11 per 10 000 person years aged 16-24 years to 200 per 10 000 person years aged 75 years or above.[1-3] Inguinal hernias present with a lump in the groin that goes away with minimal pressure or when the patient is lying down. Most cause mild to moderate discomfort that increases with activity. A third of patients scheduled for surgery have no pain, and severe pain is uncommon (1.5% at rest and 10.2% on movement).[4]

Today, inguinal hernias can be treated with very low complication rates. Open repairs like Lichtenstein operation can be performed with local anesthesia in a safe and economic way. Laparoscopic repairs are also very attractive options for patients. Sutureless repair is successful for all but the largest of indirect inguinal hernias. After reduction of the peritoneal sac, the presenting indirect component of the hernia is immediately resolved by placement of a polypropylene mesh through the internal ring.[5, 6]

Hence; the present study was undertaken for assessing the outcome of sutureless mesh repair of inguinal hernia.

MATERIALS & METHODS

The present study was conducted in the department of general surgery and it aimed to assess outcome of sutureless mesh repair of inguinal hernia. Ethical approval was obtained from institutional ethical committee and written consent was obtained from all the patients after explaining in detail the entire research protocol. A total of 20 patients were enrolled in the present study. Inclusion criteria for the present study as follows:

- Male patients within the age group of 25 to 50 years
- Subjects having uncomplicated inguinal hernia and fit for spinal anaesthesia
- Patients having complicated inguinal hernia, recurrent inguinal hernia, and bilateral inguinal hernia were excluded from the study.

Inguinal hernia repair was performed by placing mesh on posterior inguinal wall and without applying fixation suture or glue. All the patients were kept fasting for 8 hours, the operation area was shaved and cleaned one day before surgery. All patients were operated under spinal anaesthesia. The patient was brought to the operating room where a surgical safety checklist was performed. All the procedure of Sutureless mesh repair of inguinal hernia was performed under the hands of skilled and experienced surgeons. Postoperative pain scores were analysed at different time intervals on a scale of 0 to 10 with 0 indicating no pain and 10 indicating maximum pain. All the results were recorded in Microsoft excel sheet and were analysed by SPSS software. Chi- square test was used for assessment of level of significance. P-value of less than 0.05 was taken as significant.

RESULTS

In the present study, a total of 20 patients were enrolled. Mean age of the patients was found to be 47.2 years. 40 percent and 35 percent of the patients belonged to the age group of 46 to 50 years and 25 to 35 years respectively. Right side involvement occurred in 60 percent of the patients while left side involvement occurred in 40 percent of the patients. Indirect type of hernia was found to be present in 92 percent of the patients while direct type of hernia was found to be present in 8 percent of the patients. Mean duration of operative procedure was found to be 42.12 minutes. Minimum and maximum duration of surgery were found to be 30 minutes and 48 minutes respectively. In the present study, mean postoperative pain score at 1 hour, 6 hour, 12 hour and 24 hour postoperatively were found to be 4.66, 3.82, 3.10 and 2.13 respectively. Mena duration of hospital stay was found to be 1.19 days respectively. Postoperative seroma formation and postoperative infection were found to be present in 1 patient each.

Graph 1: Age-wise distribution

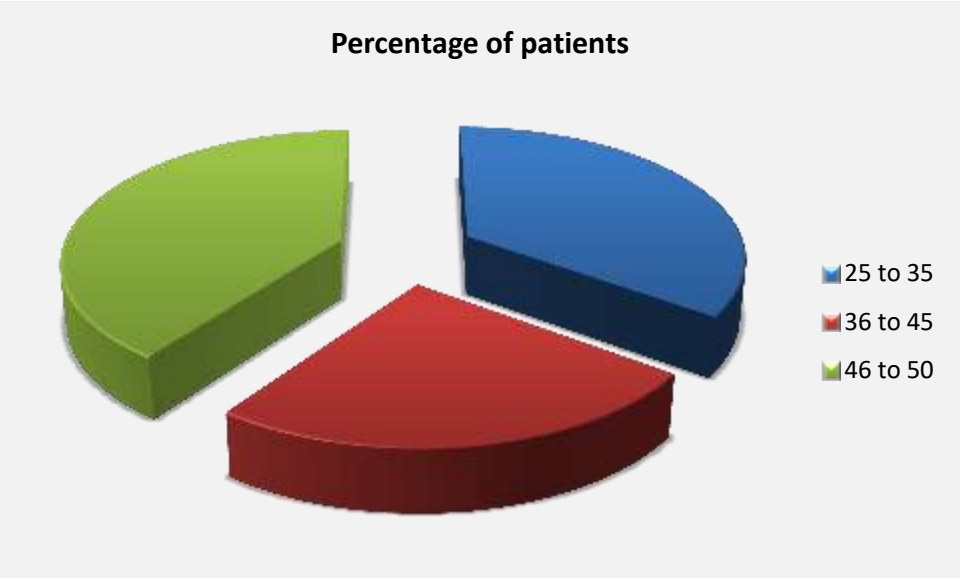

Table 1: Distribution of patients according to the site of inguinal hernia

Site of hernia	Number of patients	Percentage
Right	12	60
Left	8	40

Table 2: Distribution of patients according to the type of inguinal hernia

Type of hernia	Number of patients	Percentage
Direct	2	8
Indirect	18	92

Table 3: Duration of operative procedure

Duration of operative procedure (minutes)	Value
Mean	42.12
SD	3.19
Minimum	30
Maximum	48

Table 4: Postoperative pain score at different time intervals

Time interval	Mean Postoperative pain score	SD
1 hour	4.66	0.85
6 hour	3.82	0.76
12 hour	3.10	0.61
24 hour	2.13	0.58

DISCUSSION

Inguinal hernia most probably has been a disease ever since mankind existed. In view of its existence in different kinds of animals, and in particular of primates, one can assume that already prehistoric human beings were affected with the disease. Inguinal hernia repair has made enormous progress throughout the ages.[6, 7] Hence; the present study was undertaken for assessing the outcome of sutureless mesh repair of inguinal hernia.

In the present study, a total of 20 patients were enrolled. Mean age of the patients was found to be 47.2 years. 40 percent and 35 percent of the patients belonged to the age group of 46 to 50 years and 25 to 35 years respectively. Right side involvement occurred in 60 percent of the patients while left side involvement occurred in 40 percent of the patients. Indirect type of hernia was found to be present in 92 percent of the patients while direct type of hernia was found to be present in 8 percent of the patients. Mean duration of operative procedure was found to be 42.12 minutes. Minimum and maximum duration of surgery were found to be 30 minutes and 48 minutes respectively. Chawla I et al studied the postoperative complications and recurrence rates associated with the open preperitoneal sutureless mesh repair. Materials and Methods: Total 100 patients of inguinal hernia were recruited in this clinical trial. Those with bilateral inguinal hernia or recurrent hernias were excluded from the study. The average time taken to complete the surgery was 42.2 minutes and the average hospital stay was 2.5 days. Post-surgery, at a median follow-up period of 2 years, only 2 patients had seroma formation. Visual analog scale pain scores of 4 and 6 were seen in 60% and 40% cases, respectively. No recurrences were encountered post-surgery in any of the case till the last follow-up. This procedure was found to have fewer complications and was less time-consuming as compared to the other conventional open hernia repairs.[8]

In the present study, mean postoperative pain score at 1 hour, 6 hour, 12 hour and 24 hour postoperatively were found to be 4.66, 3.82, 3.10 and 2.13 respectively. Mena duration of hospital stay was found to be 1.19 days respectively. Postoperative seroma formation and postoperative infection were found to be present in 1 patient each. Campanelli G et al assessed the post-operative benefits of Tisseel(®)/Tissucol (®) for mesh fixation in patients undergoing Lichtenstein inguinal hernia repair. The Tisseel/Tissucol for mesh fixation in Lichtenstein hernia repair (TIMELI) study showed that mesh fixation with human fibrin sealant during inguinal hernia repair significantly reduced moderate-severe complications of pain 12 months post-operatively compared with sutures. Further analyses may assist surgeons by investigating predictors of post-surgical complications and identifying patients that may benefit from Tisseel/Tissucol intervention. Univariate and multivariate analyses identified risk factors for combined pain, numbness and groin discomfort (PND) visual analogue scale (VAS) score 12 months post-operatively. Analyses included the intention-to-treat (ITT) population and a subpopulation with pre-operative PND VAS > 30 mm. 316 patients were included in the ITT, with 130 patients in the subpopulation with pre-operative PND VAS > 30. Multivariate analysis identified mesh fixation with sutures, worsening pre-operative PND and worsening PND 1 week post-surgery as significant predictors of 12-month PND in the ITT population; mesh fixation with sutures was a significant predictor of 12-month PND in the pre-operative PND VAS > 30 subpopulation. Mesh fixation with Tisseel/Tissucol resulted in significantly less numbness and a lower intensity of groin discomfort compared with sutures at 12 months; there was no difference in pain between

the treatment groups. Pre-operative discomfort may be an important predictor of post-operative pain, numbness and discomfort. Tisseel/Tissucol may improve long-term morbidity over conventional sutures in patients.[9]

CONCLUSION

From the above results, the authors conclude that sutureless mesh repair in the treatment of inguinal hernia cases is an effective technique in terms of occurrence of minimal postoperative complications and lesser time of procedure.

REFERENCES

1. Jenkins JT, O'Dwyer PJ. Inguinal hernias. BMJ : British Medical Journal. 2008;336(7638):269-272.
2. Page B, Paterson C, Young D, O'Dwyer PJ. Pain from primary inguinal hernia and the effect of repair on pain. Br J Surg 2002;89:1315-8.
3. Gallegos NC, Dawson J, Jarvis M, Hobsley M. Risk of strangulation in groin hernias. Br J Surg 1991;78:1171-3.
4. Fitzgibbons Jr RJ, Jonasson O, Gibbs J, Dunlop DD, Henderson W, Reda D, et al. The development of a clinical trial to determine if watchful waiting is an acceptable alternative to routine herniorraphy for patients with minimal or no hernia symptoms. J Am Coll Surg 2003;196:737-42.
5. Kulacoglu H. Current options in inguinal hernia repair in adult patients. Hippokratia. 2011;15(3):223-231.
6. Shah BC, Goede MR, Bayer R, Buettner SL, Putney SJ, McBride CL, et al. Does type of mesh used have an impact on outcomes in laparoscopic inguinal hernia? Am J Surg. 2009;198:759–764.
7. Klinge U, Klosterhalfen B, Muller M, Anurov M, Öttinger A, Schumpelick V. Influence of polyglactin-coating on functional and morphologic parameters of polypropylene-mesh modifications for abdominal wall repair. Biomaterials. 1999;20:613–623.
8. Chawla I, Singla B, Gupta S, Singh V, Singh M. Preperitoneal sutureless mesh repair of inguinal hernia by open inguinal approach using inferior epigastric vessel complex as landmark: A tertiary care centre experience. Int J Health Allied Sci 2014;3:177-9.
9. Campanelli G1, Pascual MH, Hoeferlin A, Rosenberg J, Champault G, Kingsnorth A, Bagot d'Arc M, Miserez M. Post-operative benefits of Tisseel(®)/Tissucol (®) for mesh fixation in patients undergoing Lichtenstein inguinal hernia repair: secondary results from the TIMELI trial. Hernia. 2014 Oct;18(5):751-60.