

Original Research

Evaluation of the new technique of sutureless mesh repair in terms of post op complications, operative time and hospital stay

Bijay Kumar

Assistant Professor, Department of General Surgery, Netaji Subhas Medical College & Hospital, Bihta, Patna, India

ABSTRACT:

Background: Evaluating the new technique of sutureless mesh repair in terms of post op complications, operative time and hospital stay. **Materials & methods:** A total of 80 patients were enrolled in the present study. All the male patients between 20-50 years of age and having uncomplicated inguinal hernia and fit for spinal anaesthesia were included in the study. The patient was brought to the operating room where a surgical safety checklist was performed. The inguinal canal was approached from an open anterior approach after dividing the skin, scarpa fascia, and external oblique aponeurosis. Patient was put on i.v. fluids till post op 12 hr. Patients were allowed liquid sips after 12 hours, i.v fluids were given according to the requirement. Any additional drug requirement was recorded in the proforma. First dressing was done after 24 hours. All the patients were discharged normally after 24 hours of post op stay. Sutures were removed on 7th post op day and all the participants were examined for complications on follow-up. **Results:** Mean duration of operative procedure was 38.1 minutes, with maximum of 51 and minimum of 28 minutes. Mean postoperative pain score at 1 hour, 6 hour, 12 hour and 24 hour was 4.88, 3.81, 2.85 and 1.41 respectively on a scale of 0 to 10. Mean duration of hospital stay was 1.5 days. During the immediate postoperative period, no complication was seen. At 1 week postoperative follow-up, seroma was seen in 2 patients, while infection and scrotal swelling were seen in 1 patient each. **Conclusion:** Sutureless tension free mesh repair in the treatment of inguinal hernia cases is an effective technique.

Key words: Sutureless, Mesh, Repair,

Received: 22 January, 2021

Accepted: 26 February, 2021

Corresponding author: Bijay Kumar, Assistant Professor, Department of General Surgery, Netaji Subhas Medical College & Hospital, Bihta, Patna, India

This article may be cited as: Kumar B. Evaluation of the new technique of sutureless mesh repair in terms of post op complications, operative time and hospital stay. J Adv Med Dent Sci Res 2021;9(3):205-207.

INTRODUCTION

Hernia is generally defined as the protrusion of a viscus from the cavity in which it is normally contained or more precisely, as the protrusion of a loop or knuckle of an organ or tissue through an abnormal opening. Hernias are among the oldest known affliction of humankind. The history of hernia surgery for groin hernia has gone through many stages of development. The development of hernia surgery was contributed by many legends in the field of surgery. There have been a number of erudite reviews on the history of hernia and its treatment.^{1, 2} The final word on surgery for hernia is yet to be heard. Today new techniques are being explored and introduced frequently in inguinal hernia surgery. The future will tell how hernia repair will evolve in the next decades. The technique of sutureless repair of hernia has attracted attention to evaluate its morbidity

and recurrence rate.^{3, 4} Hence; the present study was undertaken for evaluating the new technique of sutureless mesh repair in terms of post op complications, operative time and hospital stay.

MATERIALS & METHODS

The present study was undertaken for evaluating the new technique of sutureless mesh repair in terms of post op complications, operative time and hospital stay. A total of 80 patients were enrolled in the present study. All the male patients between 20-50 years of age and having uncomplicated inguinal hernia and fit for spinal anaesthesia were included in the study. 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 anesthesia. The patient was brought to the operating room where a surgical safety checklist was

performed. The inguinal canal was approached from an open anterior approach after dividing the skin, scarpa fascia, and external oblique aponeurosis. Patient was put on i.v. fluids till post op 12 hr. Patients were allowed liquid sips after 12 hours, i.v fluids were given according to the requirement. Any additional drug requirement was recorded in the proforma. First dressing was done after 24 hours. All the patients were discharged normally after 24 hours of post op stay. Sutures were removed on 7th post op day and all the participants were examined for complications on follow-up. All the results were recorded and analysed using SPSS software.

RESULTS

Mean age of the patients was 41.6 years. Majority of the cases of the present study, i.e. 60 percent of the

patients, had right inguinal hernia, whereas the remaining 40 percent of the patients had left inguinal hernia. Direct hernia was found to be present in 10 percent of the cases while indirect hernia was found to be present in 90 percent of the cases. Mean duration of operative procedure was 38.1 minutes, with maximum of 51 and minimum of 28 minutes. Mean postoperative pain score at 1 hour, 6 hour, 12 hour and 24 hour was 4.88, 3.81, 2.85 and 1.41 respectively on a scale of 0 to 10. Mean duration of hospital stay was 1.5 days. During the immediate postoperative period, no complication was seen. At 1 week postoperative follow-up, seroma was seen in 2 patients, while infection and scrotal swelling were seen in 1 patient each.

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

Type of hernia	Frequency	Percentage
Right	48	60
Left	32	40

Table 2: Duration of operative procedure

Duration of operative procedure (minutes)	Value
Mean	38.1
SD	3.6
Minimum	28
Maximum	51

DISCUSSION

Two types of inguinal hernias may occur. These are classified as a direct and indirect hernia. An indirect hernia passes through the deep (internal) inguinal ring and is located lateral to the inferior epigastric vessels. A direct hernia passes through a weakened area of transversalis fascia in Hesselbach's triangle. A Pantaloon hernia is a combination of a direct and indirect hernia. The advent of synthetic mesh has made possible the bridging of large gaps in the tissues without tension, making it possible to cure every hernia, regardless of its size or shape. Originally used for the repair of incisional hernias, mesh was subsequently applied with great success to the repair of recurrent inguinal hernias. With the realization that tension is the major cause of recurrence and that, with the use of prosthetic mesh, tension can be absolutely eliminated, Lichtenstien introduced his pioneer concept of tension free repair of primary inguinal hernias using synthetic mesh.⁷⁻¹⁰ Hence; the present study was undertaken for evaluating the new technique of sutureless mesh repair in terms of post op complications, operative time and hospital stay.

In the present study, mean age of the patients was 41.6 years. Majority of the cases of the present study, i.e. 60 percent of the patients, had right inguinal hernia, whereas the remaining 40 percent of the patients had left inguinal hernia. Direct hernia was found to be present in 10 percent of the cases while

indirect hernia was found to be present in 90 percent of the cases. Mean duration of operative procedure was 38.1 minutes, with maximum of 51 and minimum of 28 minutes. Lionetti R et al assessed the incidence and degree of chronic pain, as well as the impairment in daily life, in two procedures: (1) the "Lichtenstein technique" with polypropylene mesh fixed with non-absorbable suture, and (2) the "sutureless" technique carried out by using a partially absorbable mesh (light-weight mesh) fastened with fibrin glue. A total of 148 consecutive male patients suffering from groin hernia were divided randomly into two groups: (1) Group A: patients operated with "sutureless" technique with partially absorbable mesh and plug fastened with 1 ml haemostatic sealant; (2) Group B: patients operated with Lichtenstein technique using non-absorbable mesh and plug anchored with polypropylene suture. Follow-up took place after 7 days, and 1, 6 and 12 months and consisted of examining and questioning patients about chronic pain as well as the amount of time required to return to their normal daily activities. No major complications or mortality were observed in either group. In group A there was a faster return to work and daily life activities. Six patients (7.8%) in group B suffered from chronic pain, whereas no patient in group A demonstrated this feature. Their experience showed that the combined use of light-weight mesh and fibrin glue gives significantly better

results in terms of postoperative pain and return to daily life.¹⁰

In the present study, mean postoperative pain score at 1 hour, 6 hour, 12 hour and 24 hour was 4.88, 3.81, 2.85 and 1.41 respectively on a scale of 0 to 10. Mean duration of hospital stay was 1.5 days. During the immediate postoperative period, no complication was seen. At 1 week postoperative follow-up, seroma was seen in 2 patients, while infection and scrotal swelling were seen in 1 patient each. Campanelli G et al tested the hypothesis that fibrin sealant mesh fixation can reduce the incidence of postoperative pain/numbness/groin discomfort by up to 50% compared with sutures for repair of inguinal hernias using the Lichtenstein technique. A randomized, controlled, patient- and evaluator-blinded study (Tissucol/Tisseel for MESH fixation in Lichtenstein hernia repair [TIMELI]) was conducted among patients eligible for Lichtenstein repair of uncomplicated unilateral primary inguinal small-medium sized hernia. Patients were subject to mesh fixation with either fibrin sealant or sutures. Main outcome measures were visual analogue scale (VAS) assessments for "pain," "numbness," and "groin discomfort" on a scale of 0 = best and 100 = worst outcome. The primary endpoint was a composite that evaluated the prevalence of chronic disabling complications (VAS score >30 for pain/numbness/groin discomfort) at 12 months after surgery. In total, 319 patients were randomized (159 fibrin sealant, 160 sutures). At 12 months, the prevalence of 1 or more disabling complication was significantly lower in the fibrin sealant group than in the sutures group. Less pain was reported in the fibrin sealant group than in the sutures group at 1 and 6 months, as reflected by a lower proportion of patients using analgesics in the fibrin group over the study duration. Only 3 of 316 patients (0.9%) experienced recurrence. The incidences of wound-healing complications and other adverse events were comparable between groups. Fibrin sealant for mesh fixation in Lichtenstein repair of small-medium sized inguinal hernias is well tolerated and reduces the rate of pain/numbness/groin discomfort by 45% relative to sutures without increasing hernia recurrence.¹¹ Canonico S et al investigated the frequency and severity of postoperative pain and other complications when lightweight, large-pore meshes, compared with heavyweight, small-pore meshes, are fixed with human fibrin glue (HFG) during open inguinal hernia repair. A cohort of 80 patients undergoing open inguinal repair were enrolled. Forty patients received a lightweight and large porous mesh and 40 a standard heavyweight mesh with small pores. In all patients, HFG was used for mesh fixation. Patients who received lightweight, large-pore mesh reported less pain than those in the control group both postoperatively and at 1-month follow-up,

and took fewer analgesics. There was no difference in days off work/activity. No differences were observed concerning postoperative complications. After 6 months there was no difference in groin pain between groups. Patients who underwent open inguinal hernia repair with lightweight, large-pore mesh fixed with HFG experienced less pain throughout the first month after operation compared with those receiving standard mesh.¹²

CONCLUSION

Sutureless tension free mesh repair in the treatment of inguinal hernia cases is an effective technique.

REFERENCES

1. Stoppa R. In: Chevrel JP (ed) *Hernias and surgery of the abdominal wall*. Springer, Berlin Heidelberg New York. 1998; pp 175–178.
2. Vincent PJ, Singh Y. *Modern Management Of Inguinal Hernia*. MJAF12000; 56 : 323-327
3. George EW. *Abdominal wall hernias*. In : Schwartz SI, Shires GT, Spencer FC, Daly JM. Editors. *Principles of Surgery*. Vol 2. 11th ed. McGraw-Hill, New York, 1999;1585-1611
4. Lichtenstein H, Shulman AG, Amid PK. The tension free hernioplasty. *Am J Surg* 1989;157:188-93.
5. Rutkow IM, Robbins AW. Open mesh plug hernioplasty. *Prob Gen Surg* 1995;12:121-7.
6. Gilbert AI, Graham MF. Improved sutureless technique: Advice to experts. *Prob Gen Surg* 1995;12:117-9.
7. Amid PK, Shulman AG, Lichtenstein IL. Open "tension-free" repair of inguinal hernias: the Lichtenstein technique. *Eur J Surg*. 1996;162:447-53.
8. Rose K, Wright D, Ward T, McCollum C. Tension-free mesh hernia repair: recovery and recurrence after one year. *Ann R Coll Surg Engl*. 1999;81(5):329-32.
9. Conte L, Angarano A, Cinque A, D'Aiotti V, Durastante V, Travaglini M. Trabucco's 'suture-less tension-free' hernia repair: technique, local anesthesia and results. *Ambulatory Surgery*. 1999; 7: 151–153.
10. Lionetti R1, Neola B, Dilillo S, Bruzzese D, Ferulano GP. Sutureless hernioplasty with light-weight mesh and fibrin glue versus Lichtenstein procedure: a comparison of outcomes focusing on chronic postoperative pain. *Hernia*. 2012 Apr;16(2):127-31. doi: 10.1007/s10029-011-0869-y. Epub 2011 Aug 11.
11. Campanelli G1, Pascual MH, Hoferlin A, Rosenberg J, Champault G, Kingsnorth A, Miserez M. Randomized, controlled, blinded trial of Tisseel/Tissucol for mesh fixation in patients undergoing Lichtenstein technique for primary inguinal hernia repair: results of the TIMELI trial. *Ann Surg*. 2012 Apr;255(4):650-7. doi: 10.1097/SLA.0b013e31824b32bf.
12. Canonico S, Benevento R, Perna G, Guerniero R, Sciaudone G, Pellino G et al. Sutureless fixation with fibrin glue of lightweight mesh in open inguinal hernia repair: Effect on postoperative pain: A double-blind, randomized trial versus standard heavyweight mesh. *Surgery*. 2013; 153(1): 126- 130.