

Original Research

Assessment of effectiveness of sutureless mesh repair in terms of post operative complications, operative time and hospital stay: An observational study

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ABSTRACT:

Background: 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. Our study was planned to evaluate the new technique of sutureless mesh repair in terms of post op complications, operative time and hospital stay. **Materials & methods:** 100 consecutive patients of inguinal hernia admitted for elective surgery were enrolled. Patients who will fulfill the inclusion criteria were included into the study after taking detailed consent for the procedure. Inguinal hernia repair were performed by placing mesh on posterior inguinal wall and without applying fixation suture or glue. All patients were operated under spinal anesthesia. The operative field was cleaned and dried. Anti-septic dressing done and patient shifted to ward. Visual analog scale (VAS) was used to evaluate the pain severity of the patients on the 1st postoperative day at 1 hour, 5 hours, 10 hours and 24 hours. Sutures were removed on 7th post op day and all the participants were examined. **Results:** Mean age of the patients of the present study was 33.8 years. Mean duration of procedure of the patients of the present study was 45.6 minutes. Mean postoperative pain score at 1 hour, 5 hours, 10 hours and 24 hours was 4.66, 3.12, 2.28 and 1.13 respectively. Mean duration of hospital stay was 1.19 days. Seroma formation and infection were seen in 5 percent and 3 percent of the patients respectively. **Conclusion:** Sutureless tension free mesh repair in the treatment of inguinal hernia cases is an effective technique in terms decreased time of operative procedure and hospital stay, and decreased postoperative complications.

Key words: Sutureless, Mesh Repair, Complications

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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.¹Inguinal hernia is a common problem that affects a large number of people around the globe. This leads to a surgical disease of significant scope, with 20 million inguinal hernia repairs completed annually worldwide, and in United States more than 8,00,000 are completed by 18,000 surgeons across the country.²Hernias have been a subject of interest since the dawn of surgical history. The history of hernia repair is the history of surgery. The earliest recorded reference for hernia was in 'Egyptia Papyrus of Ebers' 1522 BC. Hippocrates had differentiated between hernia

and hydrocele around 400 BC. The ancient Indian literature 'Sushruta Samhita' wrote by Sushruta around 400 BC, also includes surgeries like hernia repair.^{3,4} There have been a number of erudite reviews on the history of hernia and its treatment. 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.⁵ Improvement in surgical techniques, together with the development of new prosthetic materials and a better understanding of how to use them, have significantly improved the outcome for many patients.⁵ The technique of sutureless repair of hernia has attracted attention to evaluate its morbidity and recurrence rate. So, our study was planned to evaluate the new technique of sutureless mesh repair

in terms of post op complications, operative time and hospital stay.

MATERIALS & METHODS

The present study was conducted for evaluating the sutureless mesh repair in terms of post op complications, operative time and hospital stay. 100 consecutive patients of inguinal hernia admitted for elective surgery were enrolled. Patients who will fulfill the inclusion criteria were included into the study after taking detailed consent for the procedure. Inguinal hernia repair were performed by placing mesh on posterior inguinal wall and without applying fixation suture or glue. All patients were operated under spinal anesthesia. The operative field was cleaned and dried. Anti-septic dressing done and patient shifted to ward. Visual analog scale (VAS) was used to evaluate the pain severity of the patients on the 1st postoperative day at 1 hour, 5 hours, 10 hours and 24 hours. Sutures were removed on 7th

post op day and all the participants were examined. All the results were recorded and analysed by SPSS software.

RESULTS

Majority of the patient's .i.e. 48 percent of the patients belonged to the age group of 20 to 30 years, followed by 34 percent of the patients who belonged to the age group of 41 to 50 years. Mean age of the patients of the present study was 33.8 years. Majority of the cases of the present study .i.e. 66 percent of the patients, had right inguinal hernia, whereas the remaining 34 percent of the patients had left inguinal hernia. Mean duration of procedure of the patients of the present study was 45.6 minutes. Mean postoperative pain score at 1 hour, 5 hours, 10 hours and 24 hours was 4.66, 3.12, 2.28 and 1.13 respectively. Mean duration of hospital stay was 1.19 days. Seroma formation and infection were seen in 5 percent and 3 percent of the patients respectively.

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

Type of hernia	Frequency	Percentage
Right	66	66
Left	34	34

Table 2: Duration of operative procedure

Duration of operative procedure (minutes)	Value
Mean	45.6
SD	4.5
Minimum	31
Maximum	59

Table 3: Postoperative pain score at different time intervals

Time interval	Mean Postoperative pain score	SD
1 hour	4.66	0.98
5 hours	3.12	0.89
10 hours	2.28	0.85
24 hours	1.13	0.53

DISCUSSION

Hernia and its treatment has fascinated surgeons of all latitudes throughout the years of recorded medical history. The operations for hernia have been a paramount indicator of the progress of surgical technique itself. Conventional hernia surgery was based on tissue repairs with the inevitable element of tension in suture line and unacceptable recurrence rates. The advent of prosthetic mesh, the concept of "tension free" repairs and laparoscopic surgery has changed all that. Moreover, long held ideas regarding causes of recurrence, the need for meticulous and tedious dissection and post-operative rest have been dispelled. Hernia surgery has now been demystified and simplified. The learning curve for hernia operations has been shortened dramatically.⁶⁻⁸ So, our study was planned to evaluate the new technique of sutureless mesh repair in terms of post op complications, operative time and hospital stay.

In the present study, majority of the patient's .i.e. 48 percent of the patients belonged to the age group of 20 to 30 years, followed by 34 percent of the patients who belonged to the age group of 41 to 50 years. Mean age of the patients of the present study was 33.8 years. Majority of the cases of the present study .i.e. 66 percent of the patients, had right inguinal hernia, whereas the remaining 34 percent of the patients had left inguinal hernia. Tabbara M et al reviewed their experience and outcomes after inguinal hernia repair using the lightweight self-adhering sutureless mesh "Adhesix™" and demonstrate the safety and efficacy of this mesh. Only one patient had a hematoma lasting for more than one month and only four patients (2.8%) had a recurrence of their hernia within three years of their initial surgery. Ninety per cent of the patient expressed their satisfaction when surveyed three years after their surgery. In conclusion, the use of the

self-adhering sutureless mesh for inguinal hernia repair proved itself as effective as the traditional mesh. Adhesix™ was associated with low chronic pain rate, recurrence rate, and postoperative complications rate, and could be safely adopted as the sole technique for inguinal hernia repair.⁹ In a previous study, Cunha-e-Silva JA et al evaluated the early postoperative results of inguinal hernia repair by the conventional technique with self-fixating mesh versus laparoscopic totally extraperitoneal repair with polypropylene mesh. Out of 80 patients, 98.7% were male and the majority had indirect right inguinal hernias (Nyhus II). There was no difference between the groups studied in respect to pain and operative time. However, more complications occurred (seroma and hematoma) in the open surgery group. Both operations have proved feasible, safe and with minimal postoperative pain and a low operating time.¹⁰

In the present study, mean duration of procedure of the patients of the present study was 45.6 minutes. Mean postoperative pain score at 1 hour, 5 hours, 10 hours and 24 hours was 4.66, 3.12, 2.28 and 1.13 respectively. Mean duration of hospital stay was 1.19 days. Seroma formation and infection were seen in 5 percent and 3 percent of the patients respectively. Amra MA et al evaluated short-term outcomes of Lichtenstein technique of hernia repair using ParietexProGrip monofilament polyester mesh in Egyptian patients with inguinal hernias. Prospective analysis of 50 patients underwent Lichtenstein technique for hernia repair was done. The mean \pm SD pain visual analog scale score decreased from 12.8 ± 8.4 after 3 weeks to 0.72 ± 2.2 after 6 months. From postoperative 3 weeks to 6 months, there were notable improvements in health and also in health-related quality of life. They concluded that the use of self-gripping ParietexProGrip composite monofilament polyester mesh in Lichtenstein inguinal hernia repair is rapid, effective, simple, and safe. It is correlating with low postoperative groin pain and improved quality of life activities patients.¹¹

CONCLUSION

Sutureless tension free mesh repair in the treatment of inguinal hernia cases is an effective technique in terms decreased time of operative procedure and hospital stay, and decreased postoperative complications.

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