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Original Research

Assessment of efficacy of Sutureless mesh repair in patients with inguinal hernia

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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. 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. Hence; the present study was undertaken for assessing the new technique of sutureless mesh repair. **Materials & methods:** A total of 25 patients scheduled to undergo elective surgery for inguinal hernia were enrolled. Only male subjects within the age range of 25 to 55 years having uncomplicated inguinal hernia and fit for spinal anaesthesia were included in the study. Inguinal hernia repair was performed by placing mesh on posterior inguinal wall and without applying fixation suture or glue. Sutures were removed on 7th post op day and all the participants were examined for complications. **Results:** Mean postoperative pain among patients at 1 hour postoperatively, 6 hours postoperatively, 12 hours postoperatively, and 24 hours postoperatively was found to be 4.75, 3.66, 2.15 and 1.36 respectively. A significant reduction in postoperative pain was observed. Scrotal swelling and seroma was 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

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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.[1] Hernias have been a subject of interest since the dawn of surgical history. The history of hernia repair is the history of surgery. The development of hernia surgery was contributed by many legends in the field of surgery.[1-3]

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. 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. The technique of sutureless repair of hernia has attracted attention to evaluate its morbidity and recurrence rate.[4, 5] Hence; the present study was undertaken for assessing the new technique of sutureless mesh repair.

MATERIALS & METHODS

A total of 25 patients scheduled to undergo elective surgery for inguinal hernia were enrolled. Only male subjects within the age range of 25 to 55 years having uncomplicated inguinal hernia and fit for spinal anaesthesia were included in the study. Inguinal hernia repair was performed by placing mesh on posterior inguinal wall and without applying fixation suture or glue. Complete demographic details of all the patients were obtained. 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. Postoperative care was done and all the patients were out on i.v. fluids till postoperative twelve hours. Sutures were removed on 7th post op day and all the participants were examined for complications. All the results were recorded and analysed by SPSS software.

RESULTS

In the present study, mean age of the patients was 32.5 years. Right hernia involvement occurred in 60 percent of the patients. Indirect hernia involvement occurred in 92 percent of the patients. Mean duration of procedure was 40.12 minutes. Mean postoperative pain among patients at 1 hour postoperatively, 6 hours postoperatively, 12 hours postoperatively, and 24 hours postoperatively was found to be 4.75, 3.66, 2.15 and 1.36 respectively. A significant reduction in postoperative pain was observed. Scrotal swelling and seroma was seen in 1 patient each.

Table 1: Distribution of subjects according to age group

Age-group (years)	Frequency	Percentage
20- 30	10	40
31- 40	5	20
41- 50	10	40
Total	25	100
Mean age (years) = 32.5		

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

Type of hernia	Frequency	Percentage
Right	15	60
Left	10	40

Table 3: Distribution of patients according to type of hernia

Type of hernia	Frequency	Percentage
Direct	2	8
Indirect	23	92

Table 4: Duration of operative procedure

Duration of operative procedure (minutes)	Value
Mean	40.12
SD	3.56

Table 5: Postoperative pain score at different time intervals

Time interval	Mean Postoperative pain score	SD
1 hour	4.78	0.74
6 hour	3.66	0.45
12 hour	2.15	0.58
24 hour	1.36	0.76

Table 6: Complications

Complications	Number of patients	Percentage of patients
Scrotal swelling	1	4
Seroma	1	4

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. The main reasons for intervention however remained the same: continuous growth of the inguinal and/or scrotal swelling, the risk of incarceration of the hernia content and the bad results of conservative methods like truss placement.[6- 8] Hence; the present study was undertaken for assessing the new technique of sutureless mesh repair.

In the present study, mean age of the patients was 32.5 years. Right hernia involvement occurred in 60 percent of the patients. Indirect hernia involvement occurred in 92 percent of the patients. Mean duration of procedure was 40.12 minutes. Cunha-e-Silva JA 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. They divided patients into two groups of 40 patients each, SF group (conventional technique using self-fixating mesh) and LP group (laparoscopic technique with polypropylene mesh). They followed patients up until the 45th postoperative day. Of the 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.[9] Amra MA et al evaluated short-

term outcomes of Lichtenstein technique of hernia repair using Parietex ProGrip monofilament polyester mesh in Egyptian patients with inguinal hernias. Fifty cases (all males) were studied. Mean ± standard deviation (SD) patient age was 39.2 ± 10.4 (range 18–60) years. Most hernias were Gilbert's type II [12 (24%)] or III [16 (32%)]. During 12 months postoperatively, none of the patients developed systemic postoperative complications or recurrent hernia. The mean ± 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; mean ± SD visual analog scale EuroQoL score increased from 72.1 ± 5 to 93.2 ± 4 and mean ± SD HR EuroQoL score from 0.60 ± 0.3 to 0.92 ± 0.2. At 6 months, mean scores of the eight dimensions of the short form SF-36 questionnaires had raised from baseline. The use of self-gripping Parietex ProGrip 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.[10]

In the present study, mean postoperative pain among patients at 1 hour postoperatively, 6 hours postoperatively, 12 hours postoperatively, and 24 hours postoperatively was found to be 4.75, 3.66, 2.15 and 1.36 respectively. A significant reduction in postoperative pain was observed. Scrotal swelling and seroma was seen in 1 patient each. Lin H et al conducted a study to clarify which mesh fixation method was more suitable in Lichtenstein inguinal hernia repair. Articles published up to July 2017 were searched using MEDLINE, the Cochrane Library, Embase, and the Web of Science. Randomized controlled trials (RCTs) comparing glue versus suture mesh fixation in Lichtenstein inguinal hernia repair were included in the review. There was no evidence of an increase in chronic pain or recurrence rates with glue fixation method in the long-term follow-up. Mesh fixation with glue compared with sutures in Lichtenstein repair inguinal hernia is faster and less painful, without an increasing in terms of recurrence rates in the long term.[11]

CONCLUSION

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

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