

REAPPRAISAL OF DARNING METHOD OF INGUINAL HERNIA REPAIR

Pawan Tiwari¹, Madhu Tiwari², Raminder Talukdar³, Ranbir Singh Hooda⁴, Hari Gopal Vyas⁵,
Ranendra Chaudhary⁶

HOW TO CITE THIS ARTICLE:

Pawan Tiwari, Madhu Tiwari, Raminder Talukdar, Ranbir Singh Hooda, Hari Gopal Vyas, Ranendra Chaudhary. "Reappraisal of Darning Method of Inguinal Hernia Repair". Journal of Evolution of Medical and Dental Sciences 2014; Vol. 3, Issue 20, May 19; Page: 5404-5407, DOI: 10.14260/jemds/2014/2605

ABSTRACT: OBJECTIVE: To evaluate the darning method of inguinal hernia repair with polypropylene. **MATERIAL AND METHODS:** 125 Patient of unilateral or bilaterally inguinal hernia were admitted. After thorough investigations, all patients were operated for hernia repair by standard procedure using no-1 polypropylene. Patients were operated under spinal, general anesthesia or local anesthesia. Patients were followed up at one week, four weeks and six months after operation for wound healing and complications. **RESULTS:** Out of 125 patients, ranging in age from 18 to 85 Years, 90 patients (72%) were given spinal anesthesia, 28 Patients, (22.4%) were operated under general anesthesia, 7 patients under local anesthesia. Patients were discharged from the hospital after 4 days. 20 Patients were above 50 yr. who were operated under spinal anesthesia were catheterized to prevent urinary retentions. Recurrence rate was 1.6% **CONCLUSION:** Darning methods of inguinal hernia repair with polypropylene is a safe and cheaper method of hernia repair. **KEYWORDS:** Darn, Inguinal hernia, Polypropylene.

INTRODUCTION: Hernia by definition is the protruding of an organ or part of an organ through the wall that normally contains it. Hernia occupies 10-15% of all surgical procedures, 80% are inguinal and 92% are in men. 18% of this occurs below 15 yrs. Of age, 26% between 15 and 44yrs. 30% between 45 and 64 yrs. and 26% above 65 yrs. Indirect inguinal hernia occurs in 55% and direct in 30% while pantaloon hernia in 15% cases.¹

There is a growing body of evidence that adult male inguinal hernias are associated with impaired collagen metabolism and weakening of the fibro connective tissues of the groin, current physical activity is only considered a secondary or triggering factor in the development of inguinal hernia.^{2,3}

There are many ways of repairing hernias, with over 80 operative techniques described since 1887 when Bassini reported his method. Extensive clinical research has been undertaken to assess outcomes following inguinal hernia repair.⁴

High recurrence rates using fascia for inguinal hernia repair or suturing under tension prompted the development of minimal tension nylon darn, and then polypropylene mesh, to reinforce the posterior wall of the inguinal canal during inguinal hernia repair. A nylon darn, originally described by Maloney et al, is a cheap and effective way of repairing a hernia.⁵

The recurrence rate reported from the original series was 0.8%.⁶

More recently the use of polypropylene mesh has increased because of excellent results reported by Lichtenstein et al.⁷

There are laparoscopic approaches of hernia repair which so far has not gained much popularity as only 5% of hernia repair are done this way.

ORIGINAL ARTICLE

The aim of the study was to evaluate the polypropylene darning method in the treatment of primary inguinal hernia in men, assessing complication, postoperative pain, return to normal activities and early recurrence.

MATERIAL AND METHODS: A total of 125 cases of hernia were included in the study done from April 2010 until December 2013. Age range was between 18 and 85 years. All patients were evaluated by taking careful history, physical examination, hemoglobin, blood urea blood sugar testing and where appropriate ECG and chest radiograph. 65% of patients were secondary referrals. Bilateral, irreducible, obstructed, strangulated and recurrent hernia were included. 90 cases underwent spinal anesthesia while the 28 cases on general anesthesia. Patients above the age of fifty who were operated under spinal anesthesia were catheterized for 48 hours to prevent post-operative retention of urine.

They were all submitted to the same standard procedure using no. 1 polypropylene which is monofilament, non-absorbable, relatively biologically inert and do not adhere to tissues. The first stitch was taken from the pubic tubercle and a darn was made locking each stitch between tendinous conjoint tendon and inguinal ligament, without tension in an interwoven fashion. The procedure was tension free. In patients on spinal and local anesthesia the efficacy of the repair was tested by asking the patient to cough at the end of the procedure.

There was no restriction on the type of anesthesia; spinal, general or local anesthesia was employed depending on the surgeon, patient and anesthetic factors. Nursing staff recorded pain scores in first 24 hours postoperatively. Analgesic use was also recorded. Patients were then seen as outpatient at 1 week, 4 weeks and 6 months after operation to check wound healing and any early complications.

RESULTS: Majority of the patients (n=82-65.6%) were having indirect inguinal hernia, next was direct (n=30-24%) and pantaloon hernia was seen in n=13(10.4%) All were hospitalized postoperatively. There was no difference in the various anesthesia groups, the only difference was cost. Postoperative pain was less and some form of analgesia was needed in 80% patients. There was early return to normal life routine, mean time was 10 days. The patients were discharged after 4 day. Four patients had a scrotal hematoma which required exploration. Two patients had transient testicular swelling, two had seroma and one had stitch sinus. Chronic pain in groin was noticed in one patient. Mean operating time was 25 minutes.

Follow up was made at one week, four weeks and six months interval. Only two patients had recurrence, which is 1.6% comparable to any study worldwide. The cause of one recurrence was postoperative cough and straining while other was due to inadequate tightening of the deep ring at the time of repair.

DISCUSSION: Results of this trial to date indicate that polypropylene mesh has no added advantage over polypropylene darn with respect to early post-operative pain, complications or return to normal activities. Furthermore early recurrence was less than mesh repair.⁸

This trial does not support the previous studies of mesh repair that suggest open mesh repair has less post-operative pain, and results in a quicker return to normal activity.⁹

ORIGINAL ARTICLE

That mesh repairs are associated with fewer post-operative complication and a lower recurrence rate has not been supported by this study. As mesh is more expensive and, if it becomes infected, may require removal. The result of this study questions its widespread application. The length of time to full recovery in this trial was on average 10 days and was comparable to hernia, repaired with mesh.

In a randomized trial of Shouldice repair compared with darn, recurrence rates were similar; 4% for the Shouldice method and 1.8% for the darn.¹⁰

Moreover the recurrence rate for the Shouldice method was higher in the general surgical practice than the 1.1% reported from the Shouldice clinic.¹¹ Long term follow up is required for full determination of recurrence rate. It has been suggested that a minimum of 10 years is needed as 20% recurrence will not be apparent for 15 years.¹²

It is difficult to organize a trial over that length of time. Every recurrence is likely to represent technical failure i.e. repair and posterior wall and narrowing of deep ring. Other causes include obesity, persistent straining for chronic constipation, urinary retention, coughing, premature resumption of heavy physical work. The recurrence rate in present study is low 1.6 % at six months but could be higher at one year.

We found out that the method of primary inguinal hernia repair with propylene darn is good as this is cheap with less post-operative pain, can be easily done under any anesthesia, has fewer complications and has acceptable recurrence rate.

REFERENCES:

1. George H Sakorafas et al. Open tension free repair of inguinal hernias; Lichtenstein technique. BMC surgery 2001; 1:3.
2. Perviz K Amid. Small Bowel Enterotomy and Hernia Repair. Medscape Surgery, 2001; 3(2).
3. Raphael Rosch et all. A role for the collagen I/III and MMP-1/-13 genes in primary inguinal hernia? BMC Medical Genetics 2002; 3:2.
4. Bendavid R. New techniques in hernia repair. World J Surgery 1989; 13: 522.
5. Maloney GE, Gill WG, Barclay RC. Operation for hernia; technique of nylon darn. Lancet 1948; 2: 45.
6. Maloney GE. Results of nylon darn repair of hernia. Lancet 1958; 1: 273.
7. Lichtenstein IL, Shulman AG, Amid PK, Montllor M. The tension free hernioplasty. Am J Surg 1989; 157: 188.
8. Koukourou A, Lyon W, Rice J, Wattchow DA. Prospective randomized trial of polypropylene mesh compared with nylon darn in inguinal hernia repair. Br J Surg 2001; 88: 931.
9. Amid PK, Shulman AG, Lichtenstein IL. Critical scrutiny of the open tension free hernioplasty. Am J Surg 1993; 165: 369.
10. Kings worth AN, Gray MR, Nott DM. Prospective randomized trial comparing the Should ice technique and plication darn for inguinal hernia. Br J Surg 1992; 79: 1068.
11. Glassow F. The Shouldice hospital technique. Int J Surg 1986; 71: 148.
12. Ravitch MM. Repair of hernia Chicago, Illinois; Year Book Medical, 1969.

AUTHORS:

1. Pawan Tiwari
2. Madhu Tiwari
3. Raminder Talukdar
4. Ranbir Singh Hooda
5. Hari Gopal Vyas
6. Ranendra Chaudhary

PARTICULARS OF CONTRIBUTORS:

1. Associate Professor, Department of Surgery, Faculty of Medical and Health Sciences, SGT University, Budhera, Gurgaon, Haryana, India.
2. Associate Professor, Department of Anaesthesia, Faculty of Medical and Health Sciences, SGT University, Budhera, Gurgaon, Haryana, India.
3. Assistant Professor, Department of Surgery, Faculty of Medical and Health Sciences, SGT University, Budhera, Gurgaon, Haryana, India.
4. Professor, Department of Surgery, Faculty of Medical and Health Sciences, SGT University, Budhera, Gurgaon, Haryana, India.

5. Professor, Department of Surgery, Faculty of Medical and Health Sciences, SGT University, Budhera, Gurgaon, Haryana, India.
6. Professor, Department of Surgery, Faculty of Medical and Health Sciences, SGT University, Budhera, Gurgaon, Haryana, India.

NAME ADDRESS EMAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Pawan Tiwari,
#A-104, Medical Campus,
SGT University,
Budhera, Gurgaon, India.
Email: tiwaripawan58@gmail.com

Date of Submission: 27/04/2014.

Date of Peer Review: 28/04/2014.

Date of Acceptance: 07/05/2014.

Date of Publishing: 13/05/2014.