

Research Article**An Evaluation of Difference between Efficacy of Medium Size (6x5.5) Prolene Mesh and Full Size Mesh (6x11) in Surgery of inguinal Hernia**

¹Abdulrehman Khalid, ²Nauman Akhtar,
and ¹Junaid Bashir

¹MBBS, Hunan University of Chinese Medicine, China.

²M. D International School of Medicine Bishkek, Krygzstan.

ABSTRACT

Objective: Comparing the results of the Prolene mesh to the full size of half the size of 6x5.5cm 6x11 cm mesh in terms of cost and complications in inguinal hernia repair.

Study design: semi-experimental study.

Place and duration: The study was carried out at the Nishter Hospital, Multan in Surgical and Medical Faculty Hospital between March 2013 to April 2014.

Materials and Methods: Nishter Hospital following the approval of the Multan ethics committee, this randomized control trial included all patients who applied to the groin hernia and surgical OPD between March 2013 and April 2014. Informed consent of the patients was obtained. Patients were divided into two groups with appropriate probability sampling. In group A patients, a 6 x 11 cm Ethicon Prolene mesh on the market was placed and half of the prolene mesh was placed in Group B (6 x 5.5). Patients were followed for 6-18 months and the results of both groups were compared in terms of infection, pain, seroma formation, recurrence and profitability.

Results: A total of 300 patients were included. Each of groups A and B had 150 patients. They were men between 45 and 65 years old. In Group B, recurrence was observed in 1 patient, in 2 patients in Group A, in groin pain in Group B in 7 patients, and in $P = 0.01$ in 19 patients in Group A. Seven patients developed seroma in their group.

One patient in Group B and one in each group had wound infections. The cost of a full knitting group is twice as much as the cost of a medium knitting group.

Conclusion: Inguinal mesh repair has recurrence and similar infections.

postoperative pain and seroma formation are less than in the repair of complex mesh hernia. It is Safe and profitable.

Keywords: Inguinal hernia, Prolene surgical mesh, Complication, Wound infection, Chronic pain, Seroma.

INTRODUCTION:

Mesh repair is a standard fix for inguinal hernia. The weave should be a permanent material large enough to produce a large overlap beyond the flawed edges. Usually a polypropylene or polyester mesh (5 x 10 cm to 7 x 15 cm) is used. Lately, the producers have passed through lighter and porous structures which preserve the repairing power and possibly reduce the inflammatory response.¹ Foreign body sensation with the use of knit and post-operative chronic pain caused

conflict. Standard polypropylene mesh Lighter mesh were produced to overcome these problems. However, all light cages are more expensive than a standard polypropylene mesh.³ Different mesh configurations can be chosen, depending on the preference and training of the surgeon. The trend is to reduce the foreign body size to reduce complications without an increase in risk of recurrence. The aim of our study is to evaluate the relationship between knitting size and

complications (infection, seroma formation, chronic pain and recurrence) and cost.

MATERIALS AND METHODS:

The study was conducted at Nishter Hospital Multan between march 2013 to april 2014, following the approval of the ethics committee. 300 patients with inguinal hernia were included in the study. All patients are 45-65 years old. Patients with chronic cough, constipation, symptomatic BPH, and recurrent inguinal hernia were excluded from the study. Patient were informed about the procedure and proper consent was taken on the consent form. Patients were divided into two groups using simple random sampling technique. In 150 patients, a complete 6x11 cm knit was placed and half of a 6x11 cm cage was placed in the other group of 150 patients. In the half-cage group, 2 patients were operated on each of the lists, the 6 × 11 cm prolene nets were cut in half, and each half was placed in these two patients placed on the list for this day. Every patient received preoperative antibiotic dose and two doses of 3rd generation cephalosporin in the postoperative period. A standard Lichtenstein mesh repair was performed (the mesh was placed and cut so that the medial rounded edges coincided comfortably with the pubic tubercle. The rounded lower edge of the plaque was spotted with prolene 3-0 stitches and the inner ring continued inferolateral along the lacunar ligament. In the upper part of the knit, an inverted T-shaped cut is made so that it can be covered under and under two tails to narrow the inner ring. The superomedial feature of the plaque was fixed with cut stitches in the rectus sheath and with the joint tendon in the upper part). He stated that the nerves were protected during the procedure. All patients underwent surgical spinal anesthesia. The patients were mobilized the next day. Postoperative analgesia consists of Paracetamol or NSAID or a combination of these. The normal length of stay is 2 days. Patients were followed for 1 week, 6 weeks, 6 months, 1 year and 1½ years in OPD due to complications. The Southhampton scoring system was used for physical examination for

wound infections, history and recurrence, seroma formation and pain. Data entered in the SPSS 16 version. Descriptive statistics were used to calculate the standard deviation for the body average ± age. Chi-square test was used to compare the two groups in terms of outcome. P value <0.05 was considered significant.

RESULTS:

A total of 300 patients were selected for this study. They were men between 45 and 65 years old. In group A, the average age of th patients was 45 to 65 years(mean 56 years), and the standard deviation was between 6 and group B, ranging from 45 to 65 years (mean age 55) and standard deviation was 6. , 81 patients had left inguinal hernia in group A. In group B, 87 patients had right inguinal hernia and 63 patients had left inguinal hernia. Group A consisted of 150 patients with complex meshes. Group B also had 150 patients who were placed half-mesh. a statistically significant difference was found in the recurrence, a P value of 0.5 was obtained in group B, 2 patients in group A (1.3%) and 1 patient in patient (0.66%) recurrence in both groups. In group A, 19 (12.6%) patients had a statistically significant difference, 0.01 p values were in 7 (4.6%) patients, B group was chronic pain in the groin pain area and 7 (4.6%) patients had a P value of 0.03 group B, which showed a statistical difference, developed seroma and 1 (0.66%) in the group. 01 patients in each group received wound infection with a P value of 1, so that there was no difference in wound infection between the two groups. The full-eyed group cost twice as much as the half-braided group. When 6 * 5.5 mesh was used, the price of the cage was clearly half the size. A 6x11 cm weave cost of Ethicon Company is 1000 rupees (2005). In the half-cage group, the weave is 75,000 rupees and the full-braid group costs 150,000 rupees.

DISCUSSION:

Repairing of inguinal hernia is made tension-free by Lichtenstein description, about 16 years ago. Repair of post-operative pain is minimal, as a result of a new groundbreaking tension-free

technique. The method has very excellent results, it is so easy to do or also has very good outcome of results of mesh networks and on the other side it also very cheap in related to rates and can be performed under local anesthesia, or the surgeon has a variety of dentures available in regional.^{5,6} The ideal pore properties are inertia, low infection rate, molecular permeability, flexibility, transparency, mechanical integrity and biocompatibility. The absorbent mesh does not stay in place for long enough to collapse the appropriate collagen; stranded mesh bacteria. The monofilament mesh is currently the most popular with a herniated mesh used with various types of polypropylene having different properties of characteristics.⁶ These materials have certain properties such as strength, flexibility, density, pore size. Standard polypropylene mesh is the most used material and cheap also it is available in the majority of institutions, can not be absorbed and is strong enough to prevent repetition. However, some real problems with network use as foreign body sensation and chronic post-operative pain created a conflict over polypropylene mesh.¹ However, all cages are more expensive than lightweight, standard polypropylene cages that are lighter mesh to overcome this problem.³ Lightweight cages in various recent controlled clinical trials have achieved laboratorio.⁸ to reduce the likelihood of recurrence, which can increase some of the objective findings in favor of light tightts obtained from experiments in patient.⁷ The lattice should extend from 2 to 4 cm beyond the limit of the triangle Hesselbach.⁹ This weak area of half- it can easily cover. The average distance between the superficial ring and the deep ring was 3.75 cm. The aim of the above discussion is to reduce the foreign body burden. This can be done by reducing the size of the proline network. Since there is no other study to predict mesh size with complications, we will compare our results with other studies that use complex mesh in terms of complications. postoperatively infection rrate is minimum. Cutaneous flora is the most pronounced aetiological organism. Significantly, many surgeons have been

performing antibiotics prior to surgery, although this reduction in infection risk is not statistically significant, as antibiotic prophylaxis for inguinal hernia repair has been systematically observed in groups of randomized trials of systemic eye infections, infection prophylaxis and placebo 3.1 groups and 4.7%. However, this is not universally recommended because of the increasing antibiotic resistance problem and low incidence of infection. An additional argument for the prevention of prophylactic antibiotics is that inguinal hernia infections can be treated easily with oral cefalosporin for a short time (five to seven days). In our study, 0.66% of wound infections were seen in both groups. Later, when compared with our study, there was a low infection rate in both groups. There is no effect on the rate of infection of the knitted fabric. After anterior hernia repair, seromes and bruises are not common complications. the dead space may become widespread due to bleeding or fluid buildup in the subcutaneous area with the knee inflammatory response or after the left or instead of the large herniotomy, In a randomized trial of surgery, they developed a hematoma wound, developed a scrotal hematoma of 6.1 percent, 4.5 percent of patients who underwent surgery with a repair open network, and developed 1.6 percent seroma.¹¹ In our study, 4.6%, respectively in semi-network and full network. The size of the embryo was less affected by the formation of seromes, minus the foreign cismic inflammatory response, than the formation of seromas. The prevalence of pain is reported to be between 0 and 37 percent after the device is repaired.

After a primary surgery for the groin hernia in two to three years, a survey conducted on 2,500 Swedish patients reported that some residual groin pain was 30 percent, and 11 to 14 percent reported sitting on pain (intervention of activities). In our study, it is 4.6% and 12.6% in half net and respectively full net respectively. Other studies comparing a full mesh group in our study had a similar percentage of pain, but post-operative pain increased to a low frequency of post-operative pain. Relapse cases occur in 0.5 to 15 percent of

patients, depending on the procedure. The frequency of recurrent hernias after surgery depends on hernia repair at baseline, patients and other diseases of the original repairing hernia.15, recurrence half-cage and full cervix from 0.66% and 1.3% respectively. For this reason, there is no difference in repetition in other studies and in ours.

CONCLUSION:

Half weave repair is snowy; the incidence of chronic pain with similar recurrence and infection rates and seroma formation decreased. In third world countries such as Pakistan, the reduction of the cost of knitting is an important advantage, especially when compared to the full network, an equal or better result. On the same day, two patients can be adjusted to operate, so that each half of the cage as well as bilateral hernia can be used.

REFERENCES:

1. Earle DB, Mark LA. Prosthetic material in the repair of inguinal hernia: how can I choose? *SurgClin North Am.* 2008; vol. 88: 179-201.
2. Kulakoğlu H. Current options in inguinal hernia repair in adult patients *Hippokratia.* , 2011; Vol. 15: 223-231.
3. Shah BC, Goede MR, Bayer R, Buettner SL, Putney SJ, McBride CL and others. Does the type of mesh used affect the results of laparoscopic inguinal hernia? *Am J Surg.* December 2009; 198: 759-764.
4. Lichtenstein IL, Shulman AG, Amid PK et al. Non-tense hernioplasty. *Am J Surg.* 1989; vol. 157: 188-193.
5. Kurzer M, Belsham PA, Kark AE. Repair of Lichtenstein. *SurgClin North Am* 1998: vol 78: 1025-1046
6. Goldstein HS. Choosing the right network Hernia. 1999; Volume 3: 23-26.
7. Klosterhalfen B, Junge K Klinge U. light concept and hernia repair porous mesh is very strong. *Expert Rev Med Devices.*2005; Vol. 2: 103-117.
8. Weyhe D, Schmitz I Belyaev O, Clamps R, Müller KM Uhl W, et al. Experimental comparison of lightweight and heavy polypropylene monofilament cages: less weight does not mean biological response. *World J Surg.* 2006; 30: 1586-1591
9. In the middle of PK, Shulman AG, Lichtenstein IL. Inguinal hernia "tension-free" repair; Lichtenstein technique. *Eur J Surg.* 1996; Vol. 162: 447-453.
10. Sánchez-Manuel, FJ, Seco-Gil, JL. Antibiotic prophylaxis for the repair of herpes. *Cochrane Database Syst Rev* 2003; : CD003769
11. Fitzgibbons, RJ Giobbie-Hurdera Gibbs, JO, et al. Careful waiting for restoration of inguinal foot in minimally symptomatic men. A random clinical trial. *JAMA* 2006; Volume 295: 285.
12. Mr. Nielsen, M, Perkins, FM, Kehlet H. pain and functional impairment one year after inguinal hernia repair: a nationwide survey work. *Ann Surg* 2001.vol 233: 1-7.
13. Condon, RE. Groin pain after an amputee repair. *Ann Surg* 2001; 233: 8.
14. Franneby, U, Sandblom, G, Nordin, P, et al. Long-term pain risk factors after surgery. *Ann Surg* 2006; Vol. 244: 212-219.
15. Scott, NW, McCormack, K, Graham, P, et al. The network for inguinal and femoral hernia repair is meshless. *Cochrane Database Syst Rev* 2002: CD002197.