

RECURRENCE OF INGUINAL HERNIA MESH REPAIR

Muhammad Naeem, Sajjad Muhammad Khan, Abdul Qayyum,
Waqar Alam Jan, Muhammad Jehanzeb, Khalid Mehmood

Department of Surgery,
Postgraduate Medical Institute, Lady Reading Hospital, Peshawar - Pakistan

ABSTRACT

Objective: To determine the frequency of recurrence in mesh repair of inguinal hernia in Surgical "C" Unit, Lady Reading Hospital, Peshawar.

Material and Methods: In this study 50 consecutive cases of inguinal hernia (direct/ indirect) of either side were repaired by Lichtenstein's technique. The study was conducted from January 2007 to June 2007 with an initial follow up of one year. All cases above 20 years of age were included. Patients with acute complications of hernia were excluded from the study.

Results: All patients were male with mean age of 49 years. Out of a total number of 50 patients 37 had right sided inguinal hernia and 13 had left sided inguinal hernia. Forty seven patients had uneventful recovery. Minor wound infection was noted in two cases and seroma formation in one case. There were two cases of recurrence during initial follow up of one year.

Conclusion: Tension free mesh repair is the procedure of choice for inguinal hernia repair.

Key Words: Inguinal Hernia, Mesh Repair, Lichtenstein, Recurrence.

INTRODUCTION

Recent trend in inguinal hernia surgery has been towards using a mesh based tension free repair¹ and the Lichtenstein's repair of primary inguinal hernia is the most popular², a well-established and successful technique practiced by most surgeons³. It is now an established fact that classical Bassini repair of inguinal hernia produces unacceptably high recurrence rate⁴. This is also the case with plication darn repair irrespective of the experience of the operating surgeon⁵. Many series of studies have been published showing the benefits of tension free mesh repair as a treatment of choice for inguinal hernia. There has been a debate whether to perform an open or laparoscopic mesh repair. The latter is associated with less postoperative pain and early return to work; but it has the draw back of heavy cost, longer operative time and a longer learning curve. The open method of mesh repair of inguinal hernia is simple, easy to learn and has excellent results. The longer post operative period required to return to work as

compared to laparoscopic mesh repair of hernia can be acceptable when similar results are compared with the classical methods of inguinal hernia repair.

The present study aims at the surgical management of primary inguinal hernia by tension free mesh repair and its post operative outcomes, especially in terms of recurrence.

MATERIAL AND METHODS

In this study 50 consecutive cases of inguinal hernia (direct / indirect) of either side were operated in the surgical C unit, Lady Reading Hospital Peshawar, from January 2007 to June 2007, with an initial follow up of one year. Patients more than 20 years of age were included in the study. Patients younger than 20 years and those presenting with acute complications like obstructed or strangulated hernia were excluded.

All the patients were admitted through an out patient clinic. Detailed history, with special reference to occupation and detailed examination

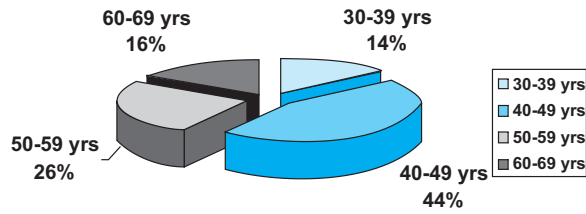


Figure No. 1 : Age distribution

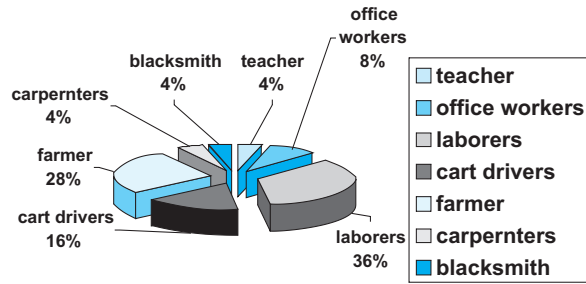


Figure No. 2 occupation distribution

findings were recorded. All the relevant investigations were performed and the fitness of the patients for general anesthesia was assessed. All the patients were counseled in detail and informed written consent was taken.

All the patients were operated on the elective morning list by senior consultants taking all the aseptic precautions. A third generation antibiotic (Ceftriaxone) was administered at the time of induction and the dose was repeated after 12 hours. The wound was examined for any induration or collection postoperatively.

RESULTS

In 50 consecutive cases all the patient were male. Age range was between 32 to 68 years with mean age of 49 years. Most of the patients n=22(44%) were between 40-49 years of age group which was followed by age group 50-59 years with n=13(26%), age group 60-69 years with n=8(16%) and age group 30-39 years with n=7(14%). (Figure No 1)

It was also analyzed that n=44(88%) patients belonged to an occupation associated directly or indirectly with physical exertion like laborers, farmers, cart-drivers, blacksmiths, carpenters while only n=6 (12%) belonged to occupation not associated with physical exertion like teachers and office workers(Figure No 2).

Out of all the cases n=37(74%) patients had inguinal hernia on right side, in which n=27 patients had indirect while n=10 patients had direct inguinal hernia. Similarly n=13 patients had inguinal hernia on left side, in which n=8 patients had indirect while n=5 patients had direct inguinal

hernia. (Table No 3).

Forty seven patients had uneventful early post-operative recovery, two patients had minor wound infection which responded to antibiotic and local wound dressing and only 1 patient had scrotal edema which resolved with rest and elevation and (Figure No 4).

Furthermore recurrence of inguinal hernia was found in only n=2(4%) patients at one year follow-up. (Figure No 5).

DISCUSSION

Inguinal hernia is a common problem. Use of a mesh in inguinal hernia repair has rapidly increased world wide since 1989 and is associated with low recurrence rates⁶. The Lichtenstein's repair of inguinal hernia was shown to have recurrence rates tenfold lower than those of the Shouldice repair, which was then the standard technique⁷. Synthetic mesh not only reduces tension over the tissues avoiding postoperative pain and risk of recurrence, the polypropylene mesh induces synthesis of collagen by inducing an inflammatory response and setting up a scaffolding effect⁸.

We operated 50 consecutive patients who were subjected to mesh repair of the inguinal hernia. All were male patients belonging to various age groups ranging from 20 to 70 years. Like the present study some other studies have also shown that only males had suffered and it appeared that it was virtually a disease of male patients^{9,10,11}. Majority of them belonged to professions associated with heavy physical work, weight lifting or exertion.

SIDE AND TYPE DISTRIBUTION

Type	Right	Left	Total
Direct	10	05	15
Indirect	27	08	35
Total	37	13	50

Figure No.3

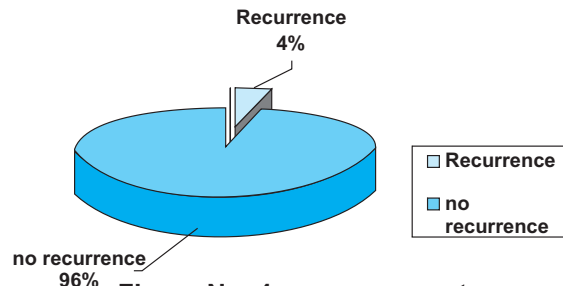


Figure No. 4: recurrence rate

Many surgeons prefer local anesthesia for Inguinal Hernia Repair^{12,13,14}. We routinely use general anesthesia for inguinal hernia repair, taking into account the comfort of the patients and also to avoid the risk of conversion to general anesthesia¹⁵.

We did not routinely put a drain intra-operatively except in cases where relatively more dissection was carried out. This was a prophylactic measure to prevent the seroma / hematoma formation and hence subsequent infection in selected cases^{16,17}. Seroma formation was reported to be 1.6% by¹⁸ Holzheimer RG in his study and was noted to be 12.6% by Awad SS et al¹⁹. One case of seroma formation was detected in the present study constituting 2% of the total. Spermatic cord injury, hematoma formation, post operative neuralgia, urinary retention, wound infection and orchitis are the known intra-and post operative complications^{20,21,14,19}.

Minor wound infection was noted in 2 cases. These patients responded to systemic antibiotic & local dressing. Tseng CC et al¹³ in their large study 1411 patients observed 9 cases of wound infection. In a study on role of antibiotic prophylaxis for hernia repair, the rate of wound infection was observed to be 2.9% in prophylaxis group (control group=3.9%)²².

Recurrence remains the most frequent complication of hernia repair. In our study only n=2(4%) patients had recurrence of inguinal hernia in initial one year follow up. Jacobs has reported that recurrence rate in open repair is less (4%) as compared to Laparoscopic repair which is 10%.²³ Balen MF has reported a 3.4% incidence of hernia recurrence (all recurrences were reported after inguinal hernia repair by the Lichtenstein's technique) over 5 years (1998).²⁴

CONCLUSION

Tension free mesh repair for inguinal hernia is the procedure of choice for both primary and recurrent inguinal hernias with early and relatively pain free recovery and having minimum recurrence rate.

REFERENCES

1. Weber G, Csontos Z, Horvath OP, Magy Seb. Hernia Surgery in Hungary today; effect of the Lichtenstein-study 2006;59:405-10.
2. Aufenacker TJ, Koelemay MJ, Gouma DJ, Simons MP. Systematic review and meta-analysis of the effectiveness of antibiotic prophylaxis in prevention of wound infection after mesh repair of abdominal wall hernia. Br J Surg 2006;93:5-10.
3. Richards SK, Earnshaw JJ. Management of

- primary and recurrent inguinal hernia by surgeons from the South West of England. Ann R Coll Surg Engl 2003; 85:402-4.
4. Liem MSL, van Duyn EB, Graaf YVD, van Vroonhoven TJM. Recurrences After Conventional Anterior and Laparoscopic Inguinal Hernia Repair, A Randomized Comparison. Ann Surg 2003; 237: 136-141.
5. Drew P J, Hartley J E, Qureshi A, Lee P W R. Primary inguinal hernia repair: how audit changed a surgeon's practice. J R Soc Med 1998;91:583-4.
6. Atkinson H D E, Nicol S G , Purkayastha S, Paterson-Brown S. Surgical Management of inguinal hernia : retrospective cohort study in southeastern Scotland, 1985-2001. BMJ 2004;329:1315-6
7. Darzi A, Mackay S. Recent advances in minimal access surgery. BMJ 2002;324-32.
8. Liakakos T, Karanikas I, Panagiotidis H, Dendrinou S. Use of marlex mesh in the repair of recurrent incisional hernia. Br j Surg 1994;81:248-9.
9. Palanivelu C, Rangarjan M, John SJ . Modified technique of laparoscopic intraperitoneal Hernioplasty for irreducible scrotal hernias (omentoceles): how to remove the hernial contents. World J Surg 2007;31: 1889-91
10. Shrestha SK, Sharma VK. Outcome of Lichtenstein operation: a prospective evaluation of sixty-four patients. Nepal med Coll J 2006; 8:230-3
11. Farooq O, Bashir-ur-Rehman . Recurrent inguinal hernia repair by open preperitoneal approach. J Coll Physicians Surg Pak 2005;15:261-5
12. Pelisser E, Fingerhut A ,Ngo P. Inguinal hernia, What techniques are available for the surgeon? Theoretical and practical advantages and disadvantages. J Chir (Paris) 2007;144:S35-40.
13. Tseng CC, Lin AD. Triple combined herniorrhaphy for inguinal hernia repair: experience of 1411 cases. Hepatogastroenterology 2007;54:1433-7.
14. Truculet C, Feodor T, Dinescu G, Petrica R, Radulescu S, Beuran M. Bi-Layer Hernioplasty in day surgery. Chirurgia (Bucur) 2007;102:433-8.
15. Farrakha M, Shyam V, Bebars GA, Yacoub M, Bindu K, Kolli S. Ambulatory inguinal hernia repair with prolene hernia system (PHS).

- Hernia 2006;10:2-6.
16. Rodrigues AJ Jr, Jin HY, Utiyama EM, Rodrigues CJ. The stoppa procedures in inguinal hernia repair : to drain or not to drain. *Rev Hosp Clin Fac Med Sao Paulo* 2003; 58:97-102.
 17. Subwongcharoen S. Outcome of inguinal hernia repair, total extraperitoneal Laparoscopic hernia repair versus open tension free repair (Lichtenstein technique). *J Med Assoc Thai* 2002; 85: 1100-4.
 18. Holzheimer RG. Low recurrence rate in hernia repair, results in 300 patients with open mesh repair of primary inguinal hernia. *Eur J med Res* 2007 31:1-5.
 19. Awad SS, yallampalli S, Srour AM, Bellows CF, Albo D, Berger DH. Improved outcomes with the prolene hernia system mesh compared with the time-honored Lichtenstein onlay mesh repair for inguinal hernia repair. *Am J Surg* 2007;193:697-701.
 20. Gourgiotis S, Germanos S, Stratopoulos C, Moustafellos P, Panteli A, Hadhiyannakis E. Lichtenstein tension-free repair of inguinal hernia. *Chirurgia (Bucur)* 2006; 101 :509-12.
 21. Vanclooster P, Smet B, de Gheldere C, Segers K. Laparoscopic inguinal hernia repair: review of 6 years experience. *Acta Chir Belg* 2001;101:135-8.
 22. Sanchez-Manuel FJ, Lozano-Garcia J, Seco-Gil JL. Antibiotic prophylaxis for hernia repair. *Cochrane Database Syst Rev* 2007; CD003769.
 23. Jacobs DO. Mesh repair of inguinal hernia-Redux. *N Engl J Med* 2004; 1895-6
 24. Balen EM, Ferrer JV, Vicente F, Blazquez L. Recurrences after prosthetic repair of inguinal hernias by the lichtenstein technique. *Pamplona Spain* 2000; 4:13-6.

Address for Correspondence:

Dr. Mohammad Naeem
 Department of Surgery,
 Lady Reading Hospital,
 Peshawar – Pakistan.