

INGUINAL HERNIORRAPHY WITH VICRYL DARN: EXPERIENCE WITH 1150 CASES

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ABSTRACT

Objective: To know the outcome of posterior wall strengthening with Vicryl darn in patients with inguinal hernias.

Material and Methods: This study was conducted at Lady Reading Hospital Peshawar during the period of 14 years from March 1991 to February 2005. All patients underwent posterior wall repair with Vicryl darn. Data was retrieved from computer software, maintained in personal computer over the years. Patients were admitted from OPD, preoperative assessment was done in the ward. Postoperative morbidity and mortality was recorded. Follow up period was from one to ten years.

Results: A total number of 1150 inguinal hernias in 1090 patients (60 had bilateral hernias) were operated by the principle author during the time period. Common age was 30-59 years. Males predominated with a male to female ratio of 40:1. All patients were operated by a single surgeon. Indirect inguinal hernias were more common with indirect and direct ratio of 5:1. Post-operative wound infection occurred in 52 cases (4.5%). Scrotal haematoma in 9 cases (0.8%). Recurrence has been recorded at a rate of 1.5% in patients who had completed 10 years follow-up. Out of 1090 patients, so far 202 (18.5 %) have been lost to follow up. Three patient died post-operatively due to co-morbid factors not directly related to surgery.

Conclusion: In our set up posterior wall strengthening with Vicryl darn (repair) in patients with inguinal hernias still has excellent results. These results are comparable with mesh hernioplasty.

Key words: Inguinal Hernia, Posterior Wall Strengthening, Vicryl Darn Method

INTRODUCTION

Inguinal hernias are common through out the world. These account for 75% of all forms of hernias and more common in males than females in ratio of 20:1.¹ Hernias often appear or become symptomatic after physical exertion. Pain or discomfort in groin may be present before a lump is noted by the patient. Many hernias are painless. Patients with inguinal hernias must be examined both in standing and lying position. The sac of indirect inguinal hernias passes through the deep inguinal ring lateral to the inferior epigastric vessels while direct inguinal hernias passes through the defect in transversalis fascia medial to inferior epigastric vessels. Transversalis fascia forms U-shaped sling around the deep inguinal ring. This sling acts as a shutter when the transversus abdominis muscle contracts, preventing herniation in normal individuals.² Several different surgical techniques are practiced world wide to treat these hernias. Sir Astley Pastan Cooper said

in 1984 that “No disease of the human body belonging to the province of the surgeon, requires in its treatment a better combination of accurate anatomical knowledge with surgical skill than hernia in all its varieties”.² What ever method is used, meticulous technique is essential. The methods of repair of posterior inguinal wall have two important components; approximation and reinforcement. In Bassini's technique the conjoint muscle/ tendon is sutured (approximated) with the inguinal ligament using interrupted sutures. The posterior wall of inguinal canal may be reinforced without tension by a loose but closely applied darn. Other methods used for reinforcement are the Shouldice technique and by inserting a prosthetic mesh.³ Many variants of darn have evolved over the years. A variety of non-absorbable sutures materials have been used to apply darn between conjoint tendon and inguinal ligament. Initial strength is obtained by the darn itself and later on by fibrosis around the sutures material used. It is

important that darn must be without tension and the suture must be continuous. Darning with Vicryl (Polygalactin 910; an absorbable suture) is reported here in 1090 patient with 1150 hernias operated by the principle author. The aim of this study was to see the outcome of the procedure. If meticulous technique is used the recurrence rate could be as low as reported with prosthetic mesh repair or Shouldice technique.³

MATERIAL AND METHODS

All patients with inguinal hernias were admitted through OPD. Irrespective of their age, sex and whether the hernia was indirect or direct, all of them were included in study. Patients with recurrent hernias were excluded. Patients with some co morbid factor were not excluded. These patients were either done under spinal anesthesia or local anesthesia. Attempt was made to have their co morbid condition treated preoperatively. Hypertensive patients were put on antihypertensive drugs and diabetics on injection insulin. Chest physiotherapy was done in patients with COAD. Rest of the patients were operated under general anaesthesia. Pre operative (pre op) assessment was done in the wards. All the required data was put in a computer programme. Most of the patients were operated next day on OT list. The part was shaved on table and injection Ceftriaxone 1 gm IV was given 15 minutes before incision. In all patients standard inguinal incision was given. The nature of hernia was confirmed after delivering the sac. The sac was either incised or reduced and posterior wall was repaired with Vicryl darn. No drain was used. Intra venous antibiotics were continued for 24 hours post operatively. On second post operative (post op) day patients were discharged. First visit was arranged on 10th post op day in the OPD where detailed examination was undertaken. Any complication was noted, sutured removed and patients were asked to report after one week if complication had been recorded; otherwise to come after three months for check up. Subsequent visits were arranged at sixth month and one year interval till last visit at the completion of ten years follow up of surgery. Results were analyzed at the end of follow up.

Technique of darning

Suture used was coated Vicryl (Polygalactin 910) of 1 zero strength mounted on

round body atraumatic needle. After opening inguinal canal, cord was isolated, and continuous suture was applied first approximating conjoined tendon/ muscle to inguinal ligament and later reinforcing this with a continuous suture making a darn with out tension. No orchiectomy was performed. Cord was not exteriorized. In female patients round ligament was not incised.

RESULTS

Total patients operated for inguinal hernias in 14 years were 1090. Total hernias were 1150 because in 60 male patients hernias were bilateral. Age ranged from 15-80 year (average 47.5 years) {Table-1}. Indirect were more common (950) than direct hernias (200); a ratio of 4.75:1. Males were pre dominantly affected by inguinal hernia i.e 1122 in contrast to 28 female. Male to female ratio was 40:1. (Table-2). For the type of hernia in relation to gender see table-3.

AGE WISE DISTRIBUTION OF PATIENTS (n = 1090)

Age in years	No. of patients	Percentage
15-29	250	23%
30-59	672	77%
60-80	168	100%

Table 1

SEX WISE DISTRIBUTION OF PATIENTS

Sex	Number	Percentage
Hernias in Males	1122	97.6%
Hernias in Females	28	2.4%
Total	1150	100%

Table 2

Darning of posterior wall was done in all patients. Post operative third generation cephalosporin (inj ceftriaxone I gm twice a day) was continued for 24 hrs. Superficial wound infection occurred in 52 cases (4.5%). Few stitches were removed. All these patients were treated conservatively with appropriate antibiotics after culture sensitivity reports. In all cases staph. aureus was grown which was sensitive to third generation cephalosporin. Chest infection in 18 patients (1.6%) and loss of sensation occurred over

TYPE OF HERNIA IN RELATION TO GENDER (n = 1150)

Sex	Direct (n = 200)	Indirect (n = 950)	Total (n = 1150)
Male	200 (17.4%)	922 (80.2%)	1122 (97.43%)
Female	Nil	28(2.56%)	28(2.57%)

Table 3

MORBIDITY AND MORTALITY IN PATIENTS (n = 1090)

Complication	Frequency	Percentage
Wound infection	52	4.5%
Anaesthesia scrotal skin	27	2.4%
Recurrence*	19	2.17%
Chest infection	18	1.6%
Scrotal haematoma	09	0.8%
Mortality	03	0.277%

* Recurrence rate was estimated in 888 patients available for follow up

Table 4

the medial half of scrotal skin in 27 patients (2.4%). Scrotal haematoma occurred in 9 hernias (0.8%). Out of total of 1090 patients, 202 (18.5%) were lost to follow-up. Out of 888 patients available for follow-up, 19 had recurrence of the hernias; a rate of 2.17% after 10 years. Over all 3 patients had died of unrelated causes; a mortality of 0.27% (Table-4)

DISCUSSION

Inguinal hernia is a common condition. In this study, 1150 hernias were operated in 14 years. This is the largest series so far from Peshawar. Study of such a large number of hernia cases has not been published in Pakistan. It is reported that 73% of the work load in a general surgical unit is utilized for hernias surgery.⁴ Four hundred cases of external hernias have been collected in a three years period and reported in the literature. Out of these 77.5% were inguinal hernias.⁵ In 1953 Earle Shouldice reported a series of 8317 hernia repair.⁹ This seems to be the largest series reported in the English literature and done out side Pakistan. Eighty thousand groin hernias operation are carried out in the UK each year.⁹ A local study has reported 180 patients operated for hernias in five years period.⁶ Yet another local study has reported 500 patients operated for inguinal hernias in a period of 28 months.⁷ It seems that the condition has variable frequency in various geographical locations. A prospective study from Ireland has reported 111 patients in five years period. It seems that inguinal hernias are probably less common in that part of the world as compared to Pakistan. In this study of 1150 hernias in 1090 patients, 1122 were male (97.6%). In a local study of 654 patients 638(97.5%) were reported to be male patients. There seems to be great similarity over here. In a study from Beirut (Lebanon) has reported male to female ratio of 19:1. In this article total number of patients was 517; out of which 95% (n=494) were male.⁸

In our study, inguinal hernias were found

to be more common in the age group 30-59 years. In 60 patients, these were bilateral. All these patients (n=1090) underwent darning of the posterior wall of the inguinal canal with absorbable suture i.e. Vicryl. A study where 111 operations were done for inguinal hernia has been reported from Ireland. The repair was done with absorbable suture (polydioxanone). The author reported recurrence rate of 2.2% after 36 months of follow up.¹⁰ Good results have been reported in two German studies where absorbable suture was used for the repair for posterior wall of the inguinal canal.^{11,12} In our study infection rate was 4.5%. In a study from N. Ireland where absorbable suture was used, the infection rate was reported as 1.1%.¹⁰ Haematoma occurred in 0.8% of our patients. In the same study haematoma was noted in 3.3%.¹⁰ Pain in the wound did not occur in our patients. It was, however, reported in 7.7% of patients in that study.¹⁰ Good results have been claimed in a study with preperitoneal mesh placement after recurrent inguinal hernia¹⁶. Darn with non-absorbable suture (prolene) has also shown promising results with low recurrence rate¹⁷.

Chronic groin sepsis has been reported in mesh hernioplasty. The reported septic complications are sinuses in groin and abscesses in groin. In all of these patients with sepsis mesh had to be removed.¹³ Mesh plug migration has been reported in a study.¹⁴ This complication shall not be the problem with Vicryl darn as we have done it. More recently, hernias are repaired by laparoscopic technique. This technique is specially good for recurrent hernias.^{15,18} Another question is when to allow these patients to go back to normal day to day activities. Routinely most of the surgeons advise their patients to be off the work for 4-6 weeks. However, it has been shown in several studies that hernias recurrence rate is independent of the time off work and the type of work done.¹⁹⁻²⁴ In our study we allowed our patient to go back to work after two weeks after surgery. The cost of Vicryl darn is also affordable.

CONCLUSION

In our set up it is recommended that darning with Vicryl of posterior wall in patients with inguinal hernias has excellent results and may be practiced without hesitancy.

REFERENCES

1. Cuschieri A. Disorder of the abdominal wall and peritoneal cavity. In: Cuschieri A, Steele RJC, Moosa AR(ed) 4th edition, London, Arnold 2002; 167-79.
2. David HB, Andrew NK. Hernias, umbilicus and abdominal wall. In: Russell RCG,

- Williams NS, Bulstrode CJK (ed) Bailey and Love's short practice of surgery. 24th edition, London Arnold 2004; 1271-87.
3. Cobb R. Hernias of the abdominal wall. In: Morris PJ, Malt RA (ed) Oxford textbook of surgery Volume-1, 1st edition UK Oxford. 1399-1402.
 4. Safirullah. Repair of inguinal hernias under local anaesthesia. *J Postgrad Med Inst* 1999; 13: 89-95.
 5. Afridi V. Experience with external hernias. *J Postgrad Med Inst* 1998; 12: 71-4.
 6. Lichtenstein IL, Shore JM. Exploding the myths of hernia repair. *Am J Surg* 1976; 132: 307-11.
 7. Ali M, Habiba U, Hussain A, Hadi G. The outcome of darning method of inguinal hernia repair using polypropylene in a district general hospital. *J Postgrad Med Inst* 2003; 17: 42-5.
 8. Hussain MK, Khoury GS, Taha AM. Laparoscopic inguinal hernia repair. *Int Surg* 1998; 83: 253-6.
 9. Nicholson S. Inguinal hernia repair. *Br J Surg*. 1999; 86: 577-8.
 10. Dick Ac, Deans GT, Irwin T. A prospective study of adult inguinal hernia repairs using absorbable sutures. *J R Coll Surg Edinb* 1996; 41: 319-20.
 11. Kuttle JC, Reterli R, Schupher R. Early results of transversalisplasty. A prospective randomized comparison of non-absorbable and resorbable sutures. *Helvetica Chirurgica Acta* 1991; 57: 931-4.
 12. Niebuhr H, Nahrsted U, Ruckrt K. Shouldice hernia repair with a PTFE suture *Zentralblat für Chirurgie* 1992; 117: 552-5.
 13. Taylor SG, O'Dwyer PJ. Chronic groin sepsis flowing tensions free inguinal hernioplasty. *Br J Surg* 1999; 86: 562-5.
 14. Raymond A, Dieter Jr. Mesh plug migration into scrotum: a new complication of hernia repair. *Int Surg* 1999; 84: 57-9.
 15. Mok K, Wang B, Chang H, Liu S, Jou N, Tai C, Chen I. Laparoscopic versus open preperitoneal prosthetic herniorrhaphy for recurrent inguinal hernia. *Inst Surg* 1998; 83:174-6.
 16. Farooq O, Ur-Rehman B. Recurrent inguinal hernia repair by open preperitoneal approach. *J Coll Physician Surg Pak* 2005;15:261-5.
 17. Farooq O, Ur-rehman B, Batool Z. Prolene Darn: A safe and effective method for primary inguinal hernia repair. *J Coll Physician Surg Pak* 2005;15: 358-61.
 18. Juul P, Christensen K. Randomized clinical trial of laparoscopic versus open inguinal hernia repair. *Br J Surg* 1999; 86: 316-9.
 19. Baker DM, Rider MA, Faweett AN. When to return to work following a routine inguinal hernia repair: are doctors giving the correct advise? *J R Coll Edinb* 1994; 39: 31-3.
 20. Iles JDH. Convalescence after heniorrhaphy. *J Am Med Assoc* 1972; 219: 285-8.
 21. Bourke JB, Taylor M. The clinical and economic effects of early return to work after elective inguinal hernia repair. *Br J Surg*. 1978; 65: 728-31.
 22. Bourke JB, Lear PA, Taylor M. The effect of early return to work after elective repair of inguinal hernia: clinical and financial consequences at one year and three years. *Lancet* 1981; II: 623-5.
 23. Barwell NJ. Recurrence and early activity after groin hernia repair. *Lancet* 1981; II: 985.
 24. Taylor EW, Dewar EP. Early return to work after repair of unilateral inguinal hernia. *Br J Surg* 1983; 70: 599-600.

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