

Overlapping Double Breasting of External/Aponeurosis in Inguinal Hernia Repair

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A study of 100 patients of inguinal hernia is presented with this new technique. All the patients were male age 19-30 years and 50-70 years. 68% of hernias were direct and 59% were right sided and 8% were bilateral. All the hernia were primary, 86% were reducible, 58% rural and 48% were urban. 61% were smokers. Mean duration in stay was 2 days. Overlapping of external oblique was combined with Malony's nylon darn repair using prolene No.1 suture for posterior layer. Results were with no recurrence is upto 22 months. Other complications were haematomas in 3% and infection in 2%. Scrotal oedema 5%, neuralgia 20%. This method is easy, economical and does not need very experienced person to do it.

Key words: Overlapping, external aponeurosis inguinal hernia

Inguinal hernia is the commonest amongst external hernia. The incidence of inguinal hernias is 5% in total male adult population and 80% are inguinal hernia. Hernia are among common affections of mankind.

In 1987, Gilbert described anatomic and functional classification for diagnosis and treatment of hernia. Considerable dispute is there about the best method of repair. There is general tendency to treat small indirect hernia differently from large indirect and direct hernia. Basini in 1881 presented his legendary contribution. Later Halsted, Marcy and other surgical contributors also broadened the base of anatomical and surgical knowledge with surgical techniques. Next came the favourite shouldice repair. In spite of these repairs surgeons kept on modifying and developing new procedures.

While thinking of repairs surgeons have more concerned about the deficiency related to transversalis fascia and stretching of internal inguinal ring. But completely forgot about the anterior wall of the inguinal canal. The strength of the canal lies in its obliquity and for this a strong external oblique aponeurosis is indispensable. In all acquired inguinal hernia the external oblique aponeurosis is weak and is bulging over the greater part of the canal¹⁴. The weakness and laxity of external oblique aponeurosis is proportional to the size of protrusion. It is not enough to narrow the deep ring, the hernia will reoccur if deep inguinal ring lacks the support which it can drive from a strong anterior wall of the inguinal canal. Overlapping or double breasting of the external oblique aponeurosis in front of the spermatic cord can readily provide this. Since aponeurosis is invariably lacks the overlapping can be done with ease and without tension.

If we restore the anatomy of the inguinal canal properly then the chances of hernia recurrence should diminish to great extent. As from patient point of view the most important outcome is recurrence of hernia. It is logical that if you restore all the anatomy of the inguinal canal i.e., by repairing the posterior inguinal canal wall which has become weakened, narrowing the stretched

internal inguinal ring and storing the support of external oblique aponeurosis by double breasting then the chances of recurrence should be negligible. This is a new technique which is being studied in 100 cases.

Patients and Methods

This study include 100 patients between ages 19-75 years with follow up of 22 months carried out in Lahore General Hospital, Lahore. All patients with primary inguinal hernia indirect or indirect were selected for the study. All the patients were hospitalised and were admitted from OPD and emergency

After exploring the inguinal canal the spermatic cord was mobilised and the covering of cremaster muscle and fascia divided to expose the hernial sac. In indirect hernia, herniotomy was performed by transfixation and ligation of the neck of the sac after emptying its contents. Internal inguinal ring was narrowed by putting one or two chromic catgut No.1 sutures placed medial to spermatic cord. Posterior wall of inguinal canal was repaired using prolene No.1 sutures by making a darn on the posterior inguinal canal wall between conjoint tendon and inguinal ligament. Spermatic cord placed back on the repaired posterior inguinal canal wall and external oblique aponeurosis closed in double breasting fashion with chromic catgut No.1. The upper leaf of external aponeurosis was mobilised and drawn down in front of the cord to be stitched to the superior border of inguinal ligament with chromic catgut No.1. The lower leaf of the external aponeurosis was stitched against the upper leaf thus overlapping it so that a strong anterior wall to the inguinal canal was constructed.

In a case of direct inguinal hernia after mobilising the spermatic cord, hernial sac was dissected and reduced back if not very large. Posterior wall plication 'repair of transversalis fascia' with catgut performed. Posterior inguinal canal wall was repaired with prolene No.1 by darning method. External oblique aponeurosis closed in double breasting fashion as in indirect hernia. The wound

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was closed after securing haemostasis. Skin was sutured with 2/0 silk and dressing applied.

Results

This study comprised of 100 cases of inguinal hernia which were operated between March 1986 to October 1996 in Surgical Unit-I of Lahore General Hospital, Lahore. The ages were from 19 years to 75 years, 39 cases were from 19 years to 30 years of age, 18 cases 30-50 years of age and 43 cases were above 50.

Table 1 Incidence of hernia

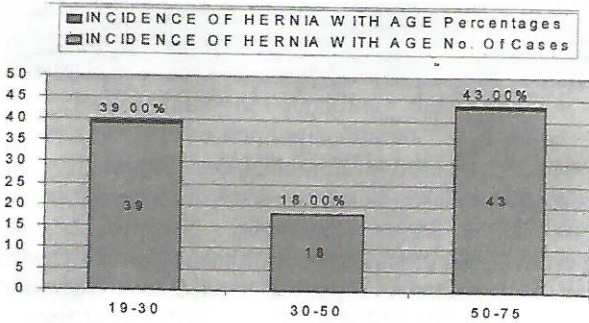


Table 2 All cases were of male sex, no female came with inguinal hernia in this period of the study.

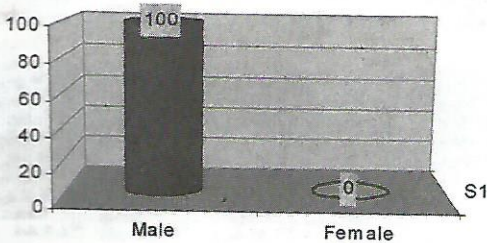


Table 3 Regarding the type of hernia 68 cases were of indirect hernia while 30 cases were of direct inguinal hernia and 2 cases of pantaloon hernia (both direct and indirect)

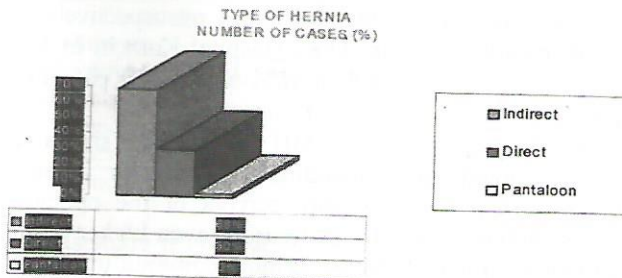


Table 4. 59 patients had right sided hernia and 33 had left sided hernia, 8 patients had bilateral inguinal hernia.

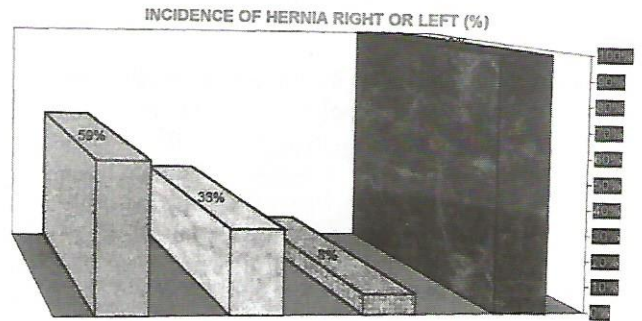


Table 5 All cases were of primary inguinal hernia. None of these was recurrent.

INCIDENCE OF HERNIA PRIMARY versus RECURRENT No. OF CASES (%)

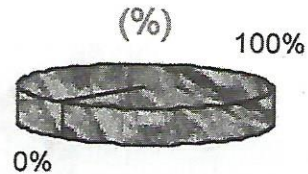


Table 6 86 were uncomplicated reducible, 11 were irreducible and 3 patients had obstructed inguinal hernia. There was no case of strangulated hernia.

COMPLICATED OR UNCOMPLICATED HERNIA PERCENTAGE

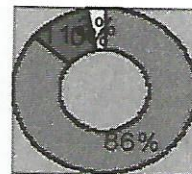


Table 7 15 patients had constipation, 12 had chronic cough and 3 patients had urinary obstruction (straining at micturition). No patient had any systemic disease like cirrhosis, uraemia, pulmonary tuberculosis.

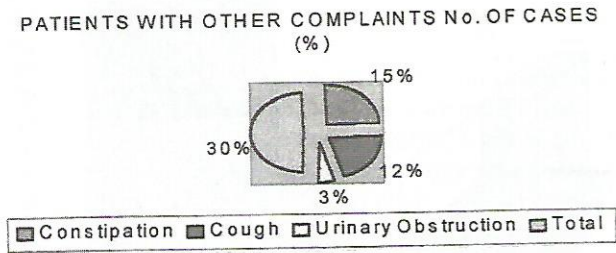


Table 8 58 patients belong to rural area, 42 patients were of urban area, 61 were smokers and 39 were non smokers.

INCIDENCE OF HERNIA AREA and HABIT DISTRIBUTION No. OF CASES

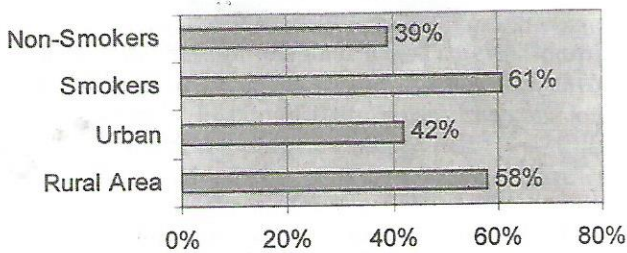


Table 9 52 cases were operated under general anaesthesia, 37 were operated under spinal anaesthesia, 16 under local anaesthesia and 5 patients were operated under epidural anaesthesia.

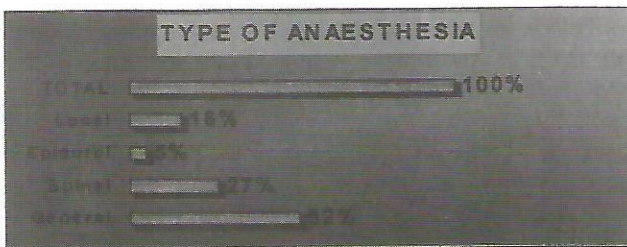


Table 10 These patients remained in the ward for 1-5 days. Most of the patients were discharged on next day of the operation

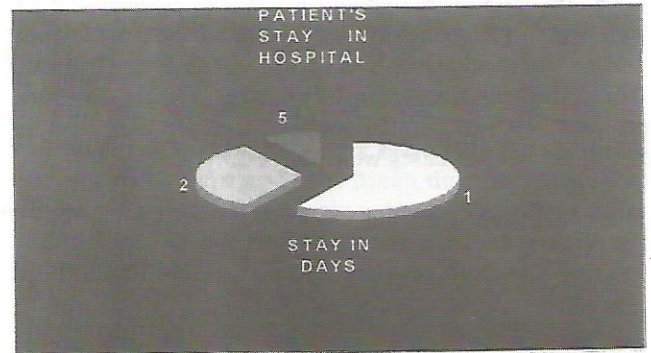
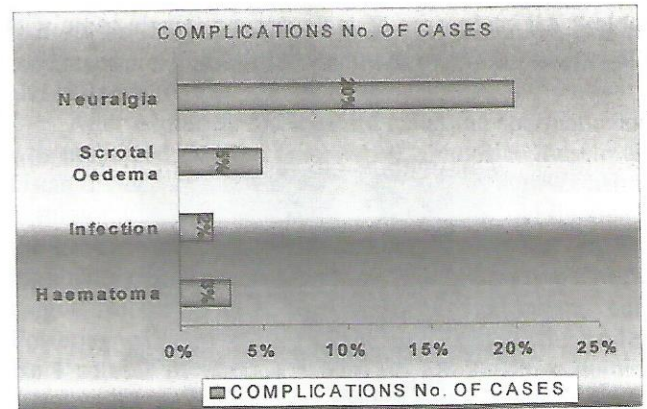


Table 11 Postoperative complications detected were; haematoma in 3 cases, scrotal oedema in 5 cases, wound infection in 2 cases. However, 20 patients had postoperative pain at the inguinoscrotal region which was relieved by analgesics, 1 patient needed local Kanacort injection in the scar.



All cases were followed up for a period of 22 months. No patient presented with recurrence in this period.

Discussion

Inguinal hernia is the commonest surgical problem and occur in about 5-10% of male population. This figure is higher in our country. In Pakistan, a retrospective study carried in surgical unit of Civil Hospital Karachi in 1983, inguinal hernia was found in 18% of the 560 patients of routine admissions in the ward¹⁷.

Five years record of CMH Rawalpindi, shows that 200-250 patients were admitted per year for operation (Major Naseer, 1991). Eighty percent of the operations were of inguinal hernia. This figure is even higher in male population¹⁵. Inguinal hernia is more common in males as compared to female ratio is 10:1 but in Pakistan females have very low incidence of inguinal hernia. There was no

female case in this study. The reason may be females do not like to be examined for inguinal region so ignore small hernias.

Inguinal hernia is more common at extreme ages. In this study 39% cases were between 19-30 years and 43% were above 50 years. In this study 59% right sided, 33% were left sided and 8% were bilateral.

Inguinal hernia repair is the most frequently performed operation in general surgery. Recurrence rate is at 10-15% in large surveys and improvement of results would have great medical and economic impact¹⁶.

Inguinal hernia repair is old but modern methods started about 100 years ago Bassini in 1887 offered his legendary contribution. Halsted, Marcy and other surgical names of that era contributed on the matters of surgical technique.

The details of repairing the canal developed gradually. All the emphasis was on the posterior wall of inguinal canal and internal ring. As a result failure of repaired hernia to recur in one year was considered major surgical triumph. Glassow modified the procedure of Bassini, Halsted and Marcy repaired the posterior wall of inguinal canal in three layers (Shouldice repair). This repair gave better results but Kingsnorth 1992 randomized trial comparing the Shouldice technique and plication darn of inguinal hernia. The former does not show any superiority over plication darn.

In spite of modifications in the inguinal hernia repair reports about recurrence rate are different in different repairs, different recurrence rate using same techniques at different centers in different years (Table 12, 13).

Table 12.

Authors	Technique	No. Of Hernias Operated upon	Follow up duration (Years)	Recurrence rate (%)
Baumber	Lytle	234	6-11	12.2-16
Callum	Basini	186	5-12	7.5
Walaumont	Bassini	91	1-10	15.8
Gear	Halsted	1048	-	11
Obner	Shouldice	114	1-20	1

Cited in Stoppa and Walaumont, 1989

Table 13.

	Shouldice	Plicationdarn
No. of hernias	84	92
Follow up	2 Yrs	2 Yrs
Recurrence (%)	5	1.8
Haematoma	11	8
Wound infection	7	6
Paraesthesia	1	1

Kingsnorth AN et al. Br J Surg 1992; 79: 1069

This study is comparable to the other studies, results with infections 2% haematomas 3% and scrotal oedema only 5%. No recurrence seen within 22 months.

Only three patients had haematoma formation while in randomized trial comparing modified Bassini and Shouldice technique in 265 hernia repairs shows the haematoma formation with Bassini's repair was 19.2%. While it was 16.8% with Shouldice repair. (Paul et al, 1994).

Evaluating the result of herniorrhaphies of Bassini, Shouldice and Darn techniques versus hernioplasty with synthetic mesh shows that there was no haematoma formation in hernioplasty group. While in herniorrhaphy group the hematoma formation was 4%¹⁸. This study had only 2% wound infection while wound infection in inguinal herniorrhaphy is reported to be 1%. Primary hernia repair (Condition and Nyhus, 1989). There was upto 16% wound infection in another study¹⁸.

Recurrence rate for inguinal hernia repair in our country is also within acceptable range. In a study from Jamshoro Hyderabad evaluating 334 patients of inguinal hernia shows recurrence rate of 2-3-9% at two years follow up. In another study from PIMS, Islamabad evaluated 100 patients of inguinal hernia repaired with mesh implants Shouldice, Bassini and Darn shows no recurrence. The follow up was 6 months to 2 years (Adil et al, 1993).

Conclusion

Although this series of 100 cases of inguinal hernia is not as large as others but is comparable to other studies. No one develop recurrence in 22 months of follow up

This time period is short but this is a new technique of repair and no other study is available of this technique. Therefore other studies are required for making a judgement. By this technique anatomy is restored and weakness of external oblique aponeurosis is also taken care of. It is logical and likely that recurrence rate to this type of repair will be very low. This is easy to perform, cost effective and reliable with less complications. It can be performed under any kind of anaesthesia with short hospital stay.

Results can be compared with latest techniques of Shouldice or prosthetic mesh replacement or endoscopic repair which needs more experienced surgeons. We recommend this technique in primary inguinal hernia.

Besides various other factors it seems that operative technique mostly influences the results of operations¹⁹. In 1998 Marsden said the best solution for the problem of recurrence is "prevention of recurrence" more care in operation and improved technique for the repair of primary hernia.

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