

Plication darn for the repair of inguinal hernia

A University hospital experience

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ABSTRACT

Objective: Recurrence rate in inguinal hernia repair is the main concern of both the surgeon and patients. The aim of this study is to evaluate the outcome in patients undergoing open inguinal hernia repair by using muscle fascial plication and nylon darn.

Methods: This technique was performed in 2 University hospitals within the Kingdom of Saudi Arabia. King Abdul-Aziz University Hospital and King Khalid University Hospital, Riyadh, for a period of 23 years, October 1978 through to October 2001, on a total of 600 patients.

Results: The total number of patients was 654 these were all male. The same repair was performed in elective cases, in acute emergency and for both direct and indirect inguinal hernia. Patients suffering from chronic cough are

referred to a pulmonologist for treatment before surgery. Follow-up was for a period of 10 years thereafter by phone communication. Fifty-four patients were excluded from the study as they failed to attend for follow up after the 3rd year. Six hundred patients underwent 619 repairs. Post operative pain was controlled by pethidine in the first 24-hours, thereafter by paracetamol tablets. Patients were advised to return to normal activity after 3/52. No heavy weight lifting before 3-4 months. Recurrence occurred in one case.

Conclusion: Muscle fascial plication combined with nylon darn is a good operation for the repair of inguinal hernia.

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Since the dawn of surgical history, hernia has been a subject of interest and treatment has evolved through distinct stages.¹⁻³ The history of hernia is the history of surgery⁴ (Jose' Felix Patino). The trial for optimal operation is still going on regarding cost effectiveness, low recurrence rate and acceptable post operative pain. In our experience, plication darn has been tested over a period of 23 years and found to be a satisfactory operation for inguinal hernia.

Methods. This is a retrospective study on 654 male patients operated upon between October 1978 and October 2001, at King Abdul-Aziz University

Hospital and King Khalid University Hospital, Riyadh, Kingdom of Saudi Arabia. Fifty-four patients were excluded from the study due to short follow-up, only 3 years. The rest of the patients, 600, underwent 619 operations. The ages ranged from 18-94 years, mean age was 42.2 years (18-94). All operations were performed by the same consultant surgeon. The type of anesthesia: general, epidural or spinal was left to the discretion of the anesthetist. No local anesthesia was used. Hospital stay ranged from 2-5 days mean a mean of 4 days.

Prior to performing the repair. Herniotomy is carried out in case of indirect inguinal hernia.

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Tranfixation is made high at level of the neck of the sac. In case of direct inguinal hernia the bulge in transversalis fascia is dealt with either by purse-string stitches or a continuous stitches inverting the bulge in a horizontal fashion using 3/0 chromic catgut or vicryl.

The repair by plication-darn. Nylon number one using rounded bodied needle starting point is the inner part of pubic tubercle then plication of muscles forming the conjoint tendon was made, special care is given to spare the ileo hypogastric nerve which is lying on the internal oblique muscle. The nylon turned down making a U-shaped turn to come down to the ileo-pubic tract and the inner part of the inguinal ligament. When reaching the internal ring we turn back in the reverse way in an interwoven fashion. It is essential to observe that the repair involves the transversalis fascia and tension is minimal, in some cases where the internal ring was found to be too wide Lytle stitches were inserted lateral to the internal inguinal ring. Analgesia used for the first 24 hours was pethidine intramuscular injection 8 hourly when required as required the average patient needs 1-2 injections; after the first 24-hours paracetamol 500 mg tab was prescribed PRN 6 hourly.

Results. Patients were seen in the OPD for follow-up one week, 3 weeks, 6 weeks, 6 months, thereafter once yearly. Patients returning for follow-up was 91.7%. After 10 years patients were discharged and asked to come back if they felt a bulge or pain in the area of surgery. However 54 patients who did not turn for follow up after 3 years, were excluded from the study hence we are studying 600 patient while the total number of patients was 654.

Pain and analgesia requirement. As soon as the patient recover from anesthesia, they were encouraged to walk at least to the bathroom the same night of surgery. Intra muscular pethidine was prescribed for the first 24-hours; its average usage was 1-2 doses followed by paracetamol tab 500 mg 6-hourly as required.

Return to activity. Three weeks after surgery most patients resume normal work. For those doing desk work it was 2 weeks. However, heavy weight lifting was not advised before 3-4 months. Early complication is shown in **Table 2**.

Late complication. 1. There was no ileo-inguinal nerve entrapment symptoms. 2. Mild testicular enlargement, causing mild pain controlled well by paracetamol tablet, occurred in 12 patients (1.9%) all of whom recovered within one week. One recurrence occurred 3 weeks after surgery, (0.2%), the case was an acute presentation of irreducible hernia that on exploration was sliding hernia of sigmoid colon, the patient lifted a 70 kg object 10-days after surgery.

Discussion. Results of our 23 year study period indicate that nylon plication-darn in the way

Table 1 - Chronic presentation of inguinal hernia (n=595 patients).

Total n	Direct inguinal hernia	Indirect inguinal hernia	Recurrent inguinal hernia
Total n of patients = 565	262	292	11
n of operations = 584	281	292	11
n of sliding hernia	0	8	0
n - number			

Table 2 - Complication after hernia repair.

Timing of post operative complications	Types of complications	n of hernia operations	%
≤ 7 days	Hematoma	10	(1.7)
	Infection	0	(0)
	Wound oozing	3	(0.5)
	Urinary retention	12	(2)
> 7 days	Recurrence	1	(0.2)
	Neuralgia	0	(0)
n - number			

described, is a satisfactory way to treat inguinal hernia. It is less expensive than mesh repair and if infection occurs, it has a better chance to heal without the need for removal of the nylon darn.⁵ It has been advised that all centers, particularly the training institutions use mesh as the recurrence rates are low,⁶ but in our experience we found that plication-darn has achieved a lower recurrence rate. The recurrence rate reported by Kookourou et al⁵ was 4% by both darn and mesh. While recurrence rate reported by Drew et al⁷ at one year, 5 years and 10-years were 0.9%, 0.3% and 9%. Long term follow-up (12-15 years) of a randomized controlled trial comparing Bassini-Stetten, Shouldice, and high ligation with narrowing of the internal ring for primary inguinal hernia repair was reported by Beets et al.⁸ The life table method showed (12-15 years) recurrence rates as follow: Group I Bassini-Stetton versus ring narrowing 33%, Group II Bassini-Stetton versus Slouldice 15%. Early result of inguinal hernia repair by the mesh plug technique reported by Fasih et al⁹ have reported 0.5% recurrence rate but follow-up was only 9-15 months.

In conclusion, this retrospective study of 619 repairs for inguinal hernia over 23 years suggests that this is a good technique, recurrence occurred in one patient (0.2%). In our experience, this technique has proved to be simple and easy to perform, the pain is well controlled by strong analgesics only in the first 24-hours, with early mobilization and return to work in reasonable time. Therefore, we recommend it for treatment of all primary and recurrent inguinal hernias.

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