

January 2007 [Table of Contents](#) / [Previous Topic](#) / [Next Topic](#) / [Index](#)

Practitioner's Series

Title

Repair of Inguinal Hernia by a Simple Technique — A Preliminary Observation

Parthasarathi Giri*, Mrinalkanti Das**, Amita Giri***

There are many techniques of repair of inguinal hernia but no single procedure has proved to be a complete one. Our primary aim is to find a simple, steady, durable, safe and low cost procedure that has least chance of recurrence as well as disability. The procedure followed in the technique of hernia repair is like that of Desarde with some modifications. The procedure was started with the poor patients (rickshaw pullers, day labours, laundry men) as they are reluctant to undergo operations until there is pain or obstruction. They work in discomfort even with the large hernia. One hundred and six patients were operated for repair of inguinal hernia by this technique in between 1996 and December 2002. Eighty-six patients came for follow-up for more than one occasions. No recurrence has been detected in these patients as yet, but 20 out of 106 never reported. [J Indian Med Assoc 2007; 105: 46-8]

Key words : Inguinal hernia, simple technique, patch by sac.

Inguinal hernia is classically a challenge in terms of posterior wall repair to prevent recurrence. There are many techniques for repair of inguinal hernia with the advantages and disadvantages of their own. Repair of inguinal hernia is an art of restoration of the anatomy and normal physical functions with a definite object of lowering the rate of recurrence in the long term.

Hypothesis

Hernia is the protrusion of a loop of bowel, organ or omentum through weak anatomical opening. Since intraperitoneal fat, connective tissue and loop of bowel abut against the lower abdominal wall, the protrusion of tissue through superficial ring or through deep and superficial ring constitute the direct and indirect inguinal hernia. Anterior abdominal wall muscles namely external oblique (EO), internal oblique (IO), rectus abdominis (RA) and transversus abdominis (TA) take part in the shutter mechanism of the inguinal canal. The interactions between the intra-abdominal pressure and the integrity of the four muscles are extremely important in maintaining the position of the viscera within the abdominal cavity. Three arches formed by the muscles, TA, IO and the EO help in prevention of hernia formation by the clamp down mechanism. It is evident that a patient with inguinal hernia might have any combination of preformed sac and weak posterior abdominal wall. In the genesis of inguinal hernia, the preformed sac, the intra-abdominal pressure and clamp down mechanism come into play with varying combinations. Intra-abdominal contents are always under a constant waving pressure which is normally accepted and opposed by the semicircular shape of the lower abdominal wall. When the force of intra-abdominal viscera is exerted upon the semicircular arc of the lower abdomen it falls perpendicularly to the curved anterior abdominal wall uniformly. But when the semicircular abdominal wall is weak there is uneven pressure on port like inguinal ring and canal. The direction of the propagated force tends to pass through this opening making the sac conical and dragging it through the opening to form a hernia. So, one force is intra-abdominal, second is dragging force by weight and the third one is weak anterior abdominal wall work in combinations to generate hernia.

Procedure

In this procedure the sac was twisted at the neck after reduction of the content. The twisted neck was fixed at the deep ring. The redundant part of the sac was not excised but was fixed over the posterior wall around the deep ring area. The twisted part plugged the deep ring while the intra-abdominal part spreads to absorb intra-abdominal pressure towards the deep ring. The extra-abdominal part of the unexcised hernial sac was patched around the cord over the deep ring area. Conical intra-abdominal sac was expected to align again on the curved line of the abdominal wall. The procedure of twisting the neck causes multiple radiating folds of the sac. The radiating folds might offer the advantages of distribution of the pressure evenly on the lower abdominal wall as well as acts as a buffer to absorb pressure to maintain the semicircular form in addition to the obliteration of the ring.

Method

Most of the operations were undertaken by local anaesthesia and intramuscular sedation alike a day case procedure with advice to attend the OPD on the 3rd day.

A transverse incision was made over the deep ring about 7.5 cm in length. The spermatic cord was hooked gently by the finger

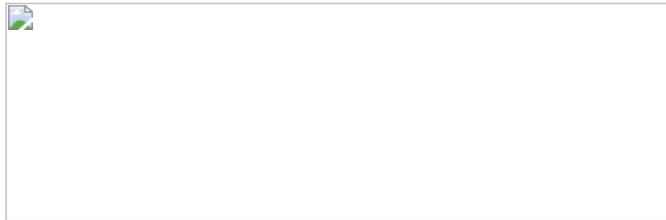
dissection without damaging the pampiniform plexus and vas differens. The sac was carefully separated taking care for injury to the plexus. The neck of the sac was tied by the vicryl after the reduction of the content. The twisted unexcised neck was fixed at the deep ring by the vicryl. The twisted neck partially occupied the deep ring as a pack. The rest of the gap in the internal ring, was narrowed by the interrupted vicryl to admit the tip of little finger. The extra-abdominal unexcised sac (fundic part) was carefully patched around the cord over the deep ring area by interrupted vicryl suture. So one part of the twisted neck is within the deep ring and a part along with the unexcised sac was patched over the deep ring and the posterior abdominal wall. The conjoint tendon and the inguinal ligament was apposed without tension with the 1/0 prolene by the interrupted stitches. The sac was used in the way as polypropylene mesh repair is done in the 'prolene hernia system'. The sac was patched as an additional procedure along with the tension-free apposition of inguinal ligament and conjoint tendon by interrupted prolene (1/0) suture.

The sac was adherent to the omentum in 2 patients. The sacs in those patients were separated by excising omentum tied by silk suture. In these 2 patients the sacs were not excised but opened sacs were patched over the deep ring areas in the same procedure.

Skin closure was made by the silk in most of the cases but application of cyanoacrylate glue in few patients also done successfully for skin apposition.

Analysis

One hundred and six patients were operated, the ages being in between 12 and 58 years (Table 1). There were 103 males and 3 females. Two patients developed wound infection but ultimately controlled with the ugly skin scar and one with hypertrophied scar but did not develop any sign of recurrence. One patient developed bulging over the incision resembling recurrence but there was no impulse on coughing and subsequent follow-up showed no recurrence.



Comments

The aim of repair of hernia is to prevent strangulation and recurrence so that normal physical activity remains unaltered. Conventional method of repair of inguinal hernia is associated with a recurrence rate of 10 to 12% as described in most series².

Combination of Shouldice technique with insertion of polypropylene mesh in the preperitoneal layer can reduce the recurrence rate 0.4% as described by the National Ambulatory Hernia Institute (NAHI) technique². Desarda³ described a new technique of repair of posterior abdominal wall by the undetached strip of external oblique aponeurosis. In his series of 400 patients there was only one recurrence after 2 years and had no such after 10 years follow-up of 80 patients. In the present series the total number of patients was only 106 in between the ages of 12 and 58 years. Only 86 patients were followed while the status of 20 patients was not assessed as they did not turn up in the clinic during the period of study.

It is believed that the hernial sac is very thin and it is very weak membrane to support the posterior abdominal wall. So, repair with the sac of hernia is not unconditionally recommended, but the anatomical configuration of curvature of peritoneum along with the technique of repair, supported the strength.

Minimally invasive hernia repair is now a standard well accepted procedure with many advantages and a few disadvantages mostly in terms of cost, visceral injury and anaesthesia. In this technique the new part is simple patch of the sac over the deep ring area without excising the neck of the hernial sac. This sac without content helped to prevent the hernial recurrence by patching, buffering the intra-abdominal pressure and plugging the internal ring. We routinely apposed the inguinal ligament with the conjoint tendon by the interrupted prolene suture to reduce the gap of fascia transversalis, conjoint tendon with the inguinal ligament. So, posterior wall was reinforced. This technique is easy and can be performed in place of laparoscopic repair in a set-up like rural hospital. It is also a suitable technique for direct inguinal hernia repair.

'An extensive reinforcement of transversalis fascia without repair of the hernial defect was sufficient'⁴, but the technique was modified by Lichtenstein⁵, who popularised the concept of tension-free hernia repair.

In this technique, the procedure was applied which was similar to the procedure undertaken by Desarda³. He placed a strip of external oblique aponeurosis to strengthen the posterior abdominal wall. Here the sac was used. We also apposed the inguinal ligament with the conjoint tendon by interrupted prolene suture. So, it is clear that patch and posterior wall apposition acted simultaneously along with shuttering the deep ring.

In this preliminary study it is very difficult to comment on the applied technique in terms of recurrence. Conclusive results are yet to come after long follow-up. No recurrence however has been recorded as yet after 6 years of follow-up to 86 patients only. Critical evaluation is still necessary to optimise the procedure.

Reference

- 1 Basmajian J, Slonecker C, editors — Grant JCB: A Method of Anatomy, Descriptive and Deductive. 11th ed. Baltimore: Williams & Wilkins, 1989: 131.
- 2 National Ambulatory Hernia Institute — Technique of Repair of Hernia. <<http://www.hernia.com/techdetails.html>>, 1995.
- 3 Desarda MP — New method of inguinal hernia repair – a new solution. Aust NZ J Surg 2001; 71: 241-4.
- 4 Cheatele GL — An operation for the radical cure of inguinal and femoral hernia. BMJ 1920; 2: 68-9.
- 5 Lichtenstein IL, Shulman AG, Amid PK, Montllor MM — The tension-free hernioplasty. Am J Surg 1989; 157: 188-93.

North Bengal Medical College, Darjeeling 734432

*MBBS, Medical Officer, Department of Surgery

**MBBS, MS, Associate Professor, Department of Surgery, Medical College, Kolkata 700073

***DCP, MD (Pathol), Professor of Pathology

[Home](#)

[Copyright : JIMA](#)