Editorial

Inguinal hernia-yesterday, today and tomorrow

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"There is no doubt that the first appearance of the mammal, with his unexplained need to push his testicles out of their proper home into the air, made a mess of the three layered abdominal wall that had done the reptiles well for 200 million years."

-H. Ogilvie

In the early years (BC) hernia repair has dated as far back as the days of the Egyptian pharaohs. The mummy of Ramses the 5th (1151 BC), had a huge hernia sac in the groin, the mummy of the pharaoh Merneptah had an incision over his inguinal region with one testicle removed. (1224BC). Physicians in Alexandria and ancient Greeks used bandages over the groin area as treatment for groin hernias. Hippocrates referred to this pathology as "etru rhexis", which means rupture of the abdominal wall. In the renaissance era Ambroise Parre described the hernia repair in detail. He advised the use of a "Golden Ligature" in case of a rupture of the sac. In 1559, Stromayer made the first distinction between direct and indirect hernias. In the anatomical era in 1790, John Hunter described "Processus Vaginalis". In 1804, Cooper defined the Fascia transversalis, and the Cooper's ligament. In the middle ages there was little progress and there were lot of wrong notions in the treatment of inguinal hernia. It was only after more than a 1000 yrs, in 1870 that antiseptic techniques were introduced by Lister, there was rapid progress in inguinal hernia surgery.¹

Classification

One of the useful classification is the one proposed by Nyhus which is outlined below:²

Type I: indirect inguinal hernia-congenital due to the persistence of the processus vaginalis. More commonly seen in young boys.

Type II: indirect inguinal hernia. Internal inguinal ring is dilated but the posterior wall is normal. It is seen in young adults.

Type III: posterior wall defects, which are divided into

three subgroups A, B, and C. Seen in older adults.

- A: Direct inguinal hernia that occurs thro" The Hasselbachs triangle"
- B: indirect hernia with dilated internal ring and defective posterior wall of the inguinal canal-inguinoscrotal and pantaloon hernias.
- C: Femoral hernias

Type IV: recurrent henias, which includes four subgroups

- A: recurrent direct
- B: recurrent indirect
- C: recurrent femoral
- D: any combination of the above

TREATMENT

The use of a truss is obsolete. Appropriate surgery either done as elective or emergency (for strangulated or incarcerated hernias) is the cure for all groin hernias. Basically they are divided in three groups:^{3,4,5}

TENSION REPAIRS

Marcy was the first surgeon to try and use animal sinew like kangaroo tendon in 1887 with little success. He used high ligation of the sac, and tightening of the internal ring. Bassini (1884), was the surgeon who changed the ways hernias were managed. Both Bassini and Halstead created an important element of hernia repair, "reconstruction of the posterior inguinal floor" (approximation of the conjoined tendon to the inguinal ligament) (Figure 1). The recurrence rate after 25 yrs of follow up is around 5%.⁶

Shouldice repair (1952): created a modification to the Bassini's repair, relying on a 4 layer closure through a special continous suturing technique thereby doubling the fascia transversalis. It has a low long term recurrence rate of around 0.5% to 1.0%. (Figure 2).⁷

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Figure 1: Bassini repair. A, External oblique aponeurosis. B, Internal oblique muscle. C, Transversus abdominis muscle and aponeurosis. D, Transversalis fascia. E, Peritoneum.



Figure 3: Lichtenstein repair.

Posterior Iliopubic tract technique: This technique championed by Nyhus, sutures the arch of the transversus abdominis aponeurosis to the liopubic tract. The recurrence rate is around 2%.^{8,9}

TENSION FREE REPAIRS

A polyster polymer was developed in 1939 (Dacron), and knitted into a fabric mesh (Mersilene). It was the first non metallic mesh that stood the test of time. Usher introduced a polypropylene mesh in 1950, marketed as Marlex. Irving Lichenstein was the one who popularised tension free techniniques as an everyday, outpatient procedure under local anaesthesia. He opened his institute in 1984. He pioneered the idea that hernia surgery is a speciality and should be performed by experienced surgeons. (Figure 3). It requires the use of mesh to cover the entire inguinal



Figure 2: Shouldice operation.

floor (Lichenstein),¹⁰ a plug and mesh (Gilbert-Rutkow) (Figure 4),¹¹ or a bilayer, polypropylene device (PHS) (Figure 5)¹² popularised by Gilbert, for the same purpose. The last two operations are the latest of the open ,tension free repairs and the recurrence rate is around 1.5% with a follow up of more than 10 to 15 yrs.¹³ During my visit to Hernia institute, Miami, for training in PHS under the guidance of Gilbert, I observed that all groin hernias are done as day care surgery under local anaesthesia. Patients are advised to resume their activity from day 1 and follow up is advised only if the patients have problem. In his personal communication to me, he claims that the recurrence rate is less than 0.2%.

Stoppa (1975), introduced his technique to repair huge groin hernias by using a giant mesh posteriorly through a midline incision.⁹

MINIMALLY INVASIVE ERA

Laparoscopic surgery dates way back to 1585, when Aranzi used sunlight through a glass vial directed into the nasal cavity, creating the first light source. Bozinni in 1806 used a scary device which he used to visualise the internal organs using candle light. In 1990 special techniques to repair groin hernias such as TAPP, trans abdominal preperitoneal approach¹⁴ and TEP, total extraperitoneal approach appeared. The basis of the Repair,¹⁵ independent of the type of approach, is use of a large piece of mesh to cover the three potential hernia defects: indirect, direct and femoral.

Evidence base studies indicate that laparoscopic hernia repairs are less painful than open repairs and allow an early return to work; however they are associated with



Figure 4: Gilbert-Rutkow mesh-plug repair.

more serious complications and considerably higher hospital costs,¹⁶ Their durability must await the test of time as the long term follow up data for the laparoscopic procedures are not yet available.

CONCLUSIONS

There is no universal repair for groin hernia and no two surgeons will disagree to agree on that point. The availability of such an array of surgical techniques in the treatment of groin hernias, is bound to confuse the younger surgeons. All the techniques will have hard proponents as well as opponents. This is where the practice of evidence based medicine is very crucial and one should have close watch on the long term follow up results of any particular newer procedures. Till then one may practice a time honoured and a good surgical technique, which has the least recurrence rate, that is handed over to them by their seniors, taking into account the cost factor which is still important in a developing country like ours and with the noble thought that the patient is not a guinea pig!

"No idea is wholly new; what is new is getting people to adopt and act upon it."

Harvey Cushing

"Although all surgeons must be prepared to admit that recurrences will occur, the only proper attitude to take is that any recurrence is the fault of the surgeon."

M. M. Ravitch



Figure 5: PHS procedure

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