

# The Finest Surgical Solutions for Inguinal Hernia

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## ABSTRACT

One of the most frequent procedures in general surgery is the correction of inguinal hernias in male patients. Laparoscopic, open mesh, and open suture techniques are a few examples of surgical repair methods. A variety of minimums must be met for a hernia operation to be successful, including minimal risk of anaesthesia and surgery, minimal tissue trauma, confinement, complications, expense, and recurrence. It is unknown which surgical procedure is most successful. Materials and Procedures This evaluation was aided by a systematic review of pertinent articles on the surgical correction of inguinal hernias found in the Pubmed database of the National Library of Medicine as well as other available material. Conclusion: Open suture repair may have an unacceptable high recurrence rate, and postoperative pain and impairment are common. Although chronic groin discomfort was a concern after laparoscopic mesh installation, it was less common. This is despite the fact that the recurrence rate is significantly reduced with the use of synthetic mesh by both open and laparoscopic methods. Laparoscopic repair does have some disadvantages, including a lengthy learning curve (mostly because the pre-peritoneal anatomy is new), the need for general anaesthesia, longer operating times, higher costs, and some serious but uncommon problems. Open suture repair of inguinal hernias has essentially been abandoned in modern surgery since it offers so little benefit to adult patients. It is only suggested for paediatric hernia repairs. The outcomes of both open and laparoscopic mesh repair are positive.

**Key words:** Hernioplasty, Herniorrhaphy, Inguinal Hernia, Laparoscopic Repair.

## 1. INTRODUCTION

Inguinal hernias were first documented about 1500 BC. The results of attempted repairs were subpar in the mediaeval ages [1]. The techniques for hernia repair were improved in the final decades of the 19th century along with the quick development of anatomical knowledge, surgical asepsis, and anaesthesia. The hernial defect was repaired with sutures in the early approaches. [4] Conventional open herniorrhaphy is linked to a high rate of recurrence and a more gradual return to full physical activity. For many years, the fundamental principles of

inguinal hernia repair remained the same; in fact, 10 to 15% of inguinal hernia repairs still include suture repair. [5]

About 45 years ago, the monofilament knitted polyethylene mesh was first used to support a previous sutured repair, ushering in the contemporary era of hernia repair[6]. [7] Polypropylene mesh (PPM), a synthetic biomaterial used in hernia surgery, was introduced shortly after. [8] Synthetic biomaterial is typically implanted during today's hernia procedures. The invention of laparoscopic surgery and its subsequent use in the treatment of groyne hernias represent the most significant advances of the past 15 years. Improved minimally invasive hernial repair methods.

The most frequent elective operation in general surgery is hernia repair. [10] Every year, surgeries to repair inguinal hernias total over 700,000 in the US, 100,000 in France, and 80,000 in the UK. [13] In addition to negatively affecting the individual patients, a high failure rate, a delayed return to regular activities, and a high overall cost will also have a severe effect on society as a whole because of the re-operations, sick leave, and associated financial load. Therefore, even a small improvement in surgical results has a big impact on surgical practise.

We are getting closer to the ultimate objective of zero recurrence with a greater understanding of the anatomy and physiology of the inguinal area and knowledge of the most efficient methods and materials currently on the market. The choice of repair, however, is still debatable [14], and there is no agreement on the surgical strategy that produces good clinical outcomes at an affordable price. [15]

In order to assist us choose the optimal surgical technique for a particular patient, this review article will briefly examine a variety of surgical procedures, including sutured techniques, the use of various prosthetic materials, and the unique approach of laparoscopic repair.

### Open Suture Repair

The idea of hernia repair underwent significant alterations in 1887 as a result of the groundbreaking work of Eduardo Bassini, the inventor of modern hernia surgery.[16]

In Bassini's repair, the transversalis fascia was divided after high dissection and closure of the peritoneal sac. With interrupted sutures, the divided fascia, transversus aponeurosis, internal oblique (three layers), and inguinal ligament were all repaired. The external oblique aponeurosis was finally pulled away from the cord. Somehow, over the years, his triple layer repair became tainted, and he did not receive proper recognition for his attention to the posterior inguinal wall,[17] a concept that is now routinely used in today's operations. Hernial surgery had very poor outcomes prior to Bassini's aggressive strategy of "radical treatment of the inguinal hernia" (the title of his presentations at the Italian Surgical Society in 1887). Within 4 years, recurrence increased from 30 to 40% in the first postoperative year to 100%. Out of 206 repairs made during a three-year period, just eight recurrences were noted by Bassini. [16]

Later, surgeons like Halsted, Tanner (relaxing incision to lessen suture line tension), and later, McVay (Cooper ligament repair), described other modifications of primary pure tissue repair by anterior approach, and they remained the cornerstone of hernia surgery for decades. The nylon darn technique was first proposed by Moloney in 1948, and it quickly gained popularity. Pure tissue restoration has several significant drawbacks, including a high failure rate and a slow return to daily activities caused by the stress on the repair. In the "North American" or "modified" Repairing bassini The inguinal ligament and transversus arch were

approximated by sutures, and the posterior wall was not opened. Recurrences were brought on by the excessive strain caused. In the latter half of the 20th century, E. E. Shouldice revived Bassini's original herniorrhaphy technique. [18] Using non-absorbable sutures, he approximated the conjoined tendon, iliopubic tract, and inguinal ligament as third and fourth layers after performing a double layer fascia transversalis repair (originally stainless steel wire).

The latter is finally covered by repaired external oblique aponeurosis flaps. The Shouldice Clinic, which eventually changed its name to a hospital dedicated solely to the treatment of abdominal wall hernias, provided exceptional care with a recurrence incidence of just 1%. Here, surgery on obese patients is postponed until a target weight is reached and surgeons only practise autonomously after aiding in at least 100 instances. For the past 40 years, shouldice repair has been the gold standard for hernia repair and has delivered the finest and longest-lasting outcomes of any other pure tissue surgery. A recent prospective study on Shouldice repair involving 775 patients was carried out by Porrero et al[19]. 93% of the patients were male, with an average age of 52. 83% of the time, local anaesthesia was employed, and 13% of the time, regional anaesthesia. The local anaesthesia was well tolerated by 93% of the participants. The length of the procedure ranged from 40 to 75 minutes on average. Urinary retention (8%), headache (7%) and ecchymosis (6%), which were the most important postoperative consequences. While 20% of the interventions were performed outside, 76% of the patients were released from the hospital the same day. 20 days were spent away from work on average. At 7 years, the recurrence rate was 2%. Another recent randomised trial with Shouldice repair by Fleming et al[20] suggested that the median operation time was 56 minutes, only 48% of patients were discharged from the hospital within 24 hours, the rate of complications was 36%, the median time it took to get back to normal activities was 5 weeks, and the recurrence at one year was 4.3%. The effectiveness of primary tissue restoration has been improved by numerous other creative surgeons. First reported by Annandale[3], the posterior technique to groyne hernia repair.

The subject of posterior preperitoneal approach was revived by Cheatle[21]. Recently, US surgeons Nyhus, Condon, and Harkins successfully modified the posterior preperitoneal method for the surgery of all types of groyne hernias. Henry[22] first used it for femoral hernia repair. [23] Type I, II, and IIC hernias were repaired using just sutures. Not fewer than 81 surgical methods for treating inguinal hernias have been described since Bassini's study. A lacklustre outcome is frequently the cause of such a profusion of tactics. Non-mesh suture inguinal hernia repair recurrence rates range from 0.2 to 33 percent. [15] The best reports come from the Shouldice Clinic, and recurrence is generally less after Shouldice repair.

### Open Mesh Repair

In hernia surgery, a variety of materials were explored, including native tissues like external oblique aponeurosis strips, fascia lata grafts from the thigh, even skin from the incision's borders, as well as metal and silk. With the invention of monofilament woven polyethylene plastic mesh (Marlex®) in 1958[6] and later knitted, malleable PPM[8] (Prolene® mesh, Ethicon, Somerville, NJ, USA) in 1962[8], the idea of hernia repair underwent a radical transformation. Francis Usher, an American physician, created and produced both materials. His inventions opened the groundwork for modern advancements that we take for granted today. Both open and laparoscopic surgery still favour PPM. But Dacron (Mersilene®),

Ethicon, Somerville, NJ, USA), a machine-knit polyester polymer, was the first widely used non-metallic mesh. Expanded PTFE, often known as e-PTFE, was created as a sheet in 1976 by Gore by improving the method of expanding polytetrafluoroethylene (Gore-Tex®, WL Gore and Associates, Flagstaff, AZ, USA). In 1983, it was initially applied to hernia repair. In an effort to reduce the unfavourable side effects, some prosthetic biomaterials have recently been mixed to create diverse composite meshes. Composix® (CR Bard, Somerville, NJ, USA) mesh is primarily used to repair incisional hernias and is made of polypropylene with a thin coat of e-PTFE on one side. Another development in a similar vein is the floppy, conformable Vypro® mesh from Ethicon, Somerville, NJ, USA. It is a thin, multifilamentous mesh with big pores that is made up of 50% polyglactin 910 (absorbable) and 50% polypropylene. Collagen and fibrous tissue ingrowths give the repair strength. In a recent randomised trial, lightweight composite mesh was compared to standard polypropylene after being placed subaponeurotically to see if the patient could tell a difference. Regarding early and late complications, there was no distinction. After 6 months of exercise, using composite mesh was linked to noticeably less pain, and fewer patients experienced the sensation of a foreign body following repair. [24] It is still not possible to create the perfect prosthetic material, which would solve all issues and satisfy the needs of both the patient and the surgeon. Compromise is necessary while selecting the material. [25] According to Cumberland [26] and Scales [27], the ideal prosthetic mesh should be chemically inert, non-carcinogenic, able to withstand mechanical strain, and able to withstand the highest forces generated by the intra-abdominal pressure. It should be simple to handle and manufacture to specifications. It ought should permit tissue ingrowth, leading to a typical pattern of tissue healing and restoration. If administered intra-abdominally, it will not promote adhesion formation. The bodily fluids in the tissues shouldn't It should not be altered or caused to react in an allergic, inflammatory, or foreign body way. It has to comply. For precise placement over the defect, the patch should adhere easily to the abdominal/inguinal wall and be see-through. Finally, It shouldn't be overly expensive. In addition to meeting Cumberland and Scales criteria, a perfect prosthesis should be impregnated with antibiotic material to resist infection, allow for fibrous tissue ingrowths on one side for proper fixation, and have anti-adhesive properties on the other side to prevent adhesions to the abdominal viscera. Finally, it should behave in vivo like autologous tissue.

### **Different Tension-Free (Mesh) Repairs**

Mesh is necessary for all tension-free repairs. Placement can be done laparoscopically, open anteriorly, or open posteriorly.

### **Giant prosthetic reinforcement of the visceral sac (GPRVS)**

Mesh prosthesis initially strengthened a prior sutured repair. In 1975, René Stoppa repaired groyne hernias using a large Dacron prosthesis and the posterior preperitoneal technique through a small midline incision. [28] Without using sutures, the mesh was used to encircle the entire peritoneal bag with minimal stress. Similar to how the pressure of water in a bathtub keeps the drain stopper in place (an application of Pascal's hydrostatic principle), expanding intraabdominal pressure kept the graft in place. The "ultimate weapon" to treat recurrent hernias is GPRVS. [29] Stoppa was the first to show that, in the presence of substantial fascia transversalis reinforcement, lasting repair of groyne hernias does not necessitate closure of the abdominal wall defect per se. Wantz [25] used Dacron mesh for

unilateral hernia repair in 1989, advancing the research on GPRVS. The myopectineal orifice and the peritoneum were separated by a mesh. This tension-free repair idea was eventually used by limited access surgeons.

### **Lichtenstein onlay patch repair**

The most common hernia repair in the world is this one. A 12 × 7 cm piece of polypropylene mesh (suited to the procedure's needs) buttresses the weak inguinal floor in this tension-free mesh hernioplasty. By using interrupted sutures, the onlay graft is secured to the pubic tubercle medially, the inferior inguinal ligament, and the superior transversus arch. The mesh is divided into two tails at the cord level. These tails are intertwined and stacked to resemble a neo-ring ring. The procedure is easy, quick, less unpleasant, and efficient for treating primary hernias. Suturing structures that aren't ordinarily in apposition together under strain is the main cause of most herniorrhaphy failures. Hernioplasty with Lichtenstein mesh is possible without causing anatomical distortion or suture line stress. Recurrence rates were less than 0.5%, and wound infection rates were less than 0.6%, according to a survey with 72 non-expert surgeons who conducted more than 16,000 Lichtenstein repairs[31]. In contrast to Shouldice repair, Lichtenstein repair does not require a challenging learning curve to produce respectable results when performed by general surgeons.

### **Patch and plug repair**

The internal cavity is filled with a prefabricated plug of polypropylene mesh (Atrium self-forming plug, Pre Fix plug).ring of the fascial aperture and sutured to it (for an indirect hernia) or into the direct hernial defect. a similar-material onlay patch that is applied over the inguinal floor and wrapped loosely or surgically around the spermatic cord lateral to the internal ring. Small tight defects are the perfect candidates for this type of treatment. It is important to note that the original attempt at this procedure involved inserting a mesh plug or cigarette into the hernial defect before applying the patch. Because of the difficulties involved, the use of cigarette plugs was discontinued. Later, Rutkow changed the plug-and-patch repair method. An attempt in the same direction was Gilbert's sutureless repair[32] of an inguinal hernia using an umbrella plug and an onlay patch.

### **Kugel patch**

(Surgical Sense, Inc., Arlington, Texas) is an oval, flat piece of PPM that has a "memory recoil ring" at the edge that enables it to flatten out in the preperitoneal area and cover the entire inguinal floor. It is fixed with a single suture and is held in place by the pressure inside the abdomen.

### **The PROLENE® polypropylene hernia system**

A bilayer, three-in-one patch device is available from (Ethicon, Somerville, NJ, USA). It consists of an oblong-shaped onlay component that must be placed over the inguinal floor and a round disc (underlay patch) that is positioned in the preperitoneal space of Bogros. The cylindrical connector connecting these two parts is accommodated by the inside ring, creating the plug effect. Both direct and indirect inguinal hernias can be fixed using it. The bilayered repair with PHS provides the advantages of both the laparoscopic technique (the round inlay component is placed in the preperitoneal area) and the Lichtenstein repair (the oblong onlay patch is placed on the inguinal floor).

The outcomes of a recent Indian study using PHS,[33] which involved 47 patients (mainly men) with primary inguinal hernias (58% direct) and a mean age of 55.8 years, were positive. The study's average follow-up time was 6.24 months. The average surgery lasted 35 minutes. The typical length of recovery was 3.5 days. Except for the temporary neuralgia that four patients reported, there were no postoperative problems. This problem went away in a week. Despite having good findings, the PHS is still not widely used because of its costly cost as compared to the traditional PPM.

The most recent randomised trial [34] on 334 patients found no clinically significant differences in postoperative pain or quality of life between PHS, mesh plug repair, and Lichtenstein method of open inguinal hernia repair.

### **Open Suture Versus Open Mesh Repair**

Individual trials typically don't give accurate enough estimations. Randomized control trials produce the least-biased judgments. Systematic analyses[14,15,35] of data from some of these recent randomised studies on open mesh groyne hernia procedures (Lichtenstein, with open non-mesh (Shouldice and other suture repairs), with customised mesh (plug and mesh and preperitoneal mesh), The length of the procedure, the amount of time needed to resume regular activities, hernia recurrence, and chronic groyne pain. Including Shouldice against flat mesh 7, flat mesh versus other non-mesh 6, flat mesh versus any non-mesh 1, plug and mesh versus other non-mesh 2, and preperitoneal mesh versus other non-mesh 1, there were seventeen comparative studies. The most frequent mesh and non-mesh repairs were Lichtenstein repair and Shouldice repair. All research was limited to surgical groyne hernia repair. Eleven studies solely covered primary hernias, three included primary and recurrent hernias, and three studies did not mention any specifics.

The number of participants in each study varied from 64 to 672. The mean or median follow-up time was between 6 days and 3 years. In six trials, the mesh group's mean or median operating time was shorter, but the opposite was true in three. In one, it was equal, and in seven, it was ambiguous or not mentioned. Postoperative problems were rare, and those that were reported had little risk of becoming serious. Infections and hematomas are equally common after mesh and non-mesh repairs. In two investigations, seroma rates were greater in the mesh group. Chances of groyne hernia recurrence decreased by around 50% after mesh treatment, and the reduction seems to get bigger over time. [35] Following mesh repair, both the length of hospital stays and the occurrence of persistent groyne pain decreased.[35] Concerns about mesh infection, the potential for groyne pain, and the additional cost of the mesh are some of the typical justifications for not employing mesh. The latter is particularly important for a nation like ours. These worries, however, seem to be unjustified. In elective cases, the risk of mesh infection is very low, the mesh actually decreases persistent pain rather than making it worse, and the additional costs of mesh repair are more than made up for by the savings from the decreased risk of recurrence over a period of 1 to 4 years (the length of time varies) on the local prices or fees for a second operation). [35] Surgical practise surveys conducted around the country show that open mesh approach has emerged as the preferred method for treating primary inguinal hernias.[36]

### **Laparoscopic Hernia Repair**

By using Michel clips to close the entrance of an indirect inguinal hernial sac, Ger was the first to undertake limited access groyne hernia surgery in 1982[9]. In 1989, Bogojavlensky

changed the procedure[53] by intracorporeal suturing the deep ring following the insertion of a PPM into the sac. Toy & Smoot in 1991[54] devised a method of inserting intra-peritoneal onlay mesh (IPOM), in which a piece of polypropylene or e-PTFE was stapled inside the abdomen.

With no peritoneal incision, over the myopectineal orifice. The IPOM has a number of significant flaws, including the potential for bowel adhesions and mesh migration. These early attempts at laparoscopic repair did not yield promising outcomes. [54,55] Despite having a steeper learning curve and being more difficult than laparoscopic cholecystectomy or open herniorrhaphy, hernia surgery has undergone significant advancements ever since Ger's initial attempts. [56, 57] Despite the numerous disagreements, it became a more and more common procedure. [58]

Stoppa's idea of pre-peritoneal strengthening of fascia transversalis over the myopectineal orifice with its many openings by a prosthetic mesh gave rise to the current methods of laparoscopic hernia repair. [29] Early in the 1990s, Arregui and Doin[59,60] described the trans-abdominal pre-peritoneal repair (TAPP), in which the abdominal cavity is first entered and peritoneum over the posterior wall of the inguinal canal is incised to enter into the avascular preperitoneal plane that is sufficiently dissected to place a substantial (15 x 10 cm) mesh over the hernial orifices. Following mesh fixation, the peritoneum is meticulously stitched or stapled. Missed additional direct or femoral hernia had been implicated in 14% of recurrences following surgical repair[61]. The benefit of the TAPP technique is that they can be found during the initial procedure.

In the same period, Phillips and McKernan[62,63] described the totally extra-peritoneal (TEP) technique of endoscopic hernioplasty, in which the peritoneal cavity is not breached and the entire dissection is carried out bluntly in the extra-peritoneal space with a balloon device or the tip of the laparoscope. It is essential to have in-depth understanding of the inguinal region's posterior anatomy. A 15 × 10 cm mesh is stapled over the myopectineal opening when the dissection is finished. The TEP technique prevents the colon from coming into contact with the prosthetic biomaterial while reducing the risk of harm to the intra-abdominal organs. Expert laparoscopists have come to embrace it more and more[56], and it now seems to be the most popular endoscopic repair.[62]

As opposed to being in contact with the peritoneum as in IPOM repair, where it is prone to migrate, the mesh in both of these repairs is in direct contact with the fascia of the transversalis muscle in the pre-peritoneal area, allowing tissue ingrowths that contribute to the mesh's fixation. Fleming et al. [20] compared TEP repair (n=116) with Shouldice procedure (n=115) on 200 patients in a randomised study. Following are the comparative findings: median operating time of 70 minutes (56 minutes); first-day discharge rate of 68% (48%); return to normal life style within one month (77% (49%)); rate of complications 16% (36%); and recurrence within one year of follow-up (2 cases) (5). Shouldice repair is 40% more expensive than TEP repair.

There was no discernible difference between the two groups in terms of postoperative discomfort, hospital stay, return to normal activities, and complications, according to a recent randomised study[64] on 123 patients comparing Lichtenstein repair (n=62) with TEP repair (n=61). The TEP repair cost more and took 16 minutes longer. According to the authors, TEP repair for recurring and bilateral hernias and the Lichtenstein procedure are both better for treating primary inguinal hernias. Laparoscopic repair is projected to become more cost-

effective with the gradual reduction in operating time, use of reusable instruments, and reduction in the hospital stay (many are conducting it as an outpatient surgery). On the other hand, Heikkinen et al[65] believed that if the cost of lost workdays were taken into account, laparoscopic repair would result in reduced overall expenses for working patients were included in the total costs. Recent randomised trials meta-analysis contrasting open with Less complications were recorded with laparoscopic repair.

Despite the fact that all severe visceral and vascular problems that occurred after laparoscopic repair were from this group. The EU Hernia Trialists Collaboration discovered that there were 4.7 significant injuries for every 1000 surgeries, mostly to the bladder and arteries.[14] For bilateral and recurring hernias, laparoscopic treatment is a particularly alluring procedure. [67] In a randomised prospective trial, TAPP and TEP repairs were compared and found to have results that were comparable. TEP repair performed with balloon dissectors and their ports is more expensive and more difficult to master than TAPP; the opposite is true if TEP repair is performed without balloon dissectors and staples.

Since intra-abdominal damage, postoperative adhesions, and postoperative pain were more frequent in the TAPP group, Kald[69] et al came to the conclusion that TEP repair should be the preferable technique despite having a longer learning curve. The TAPP operation can be carried out without any significant morbidity, according to a recent study[70] that involved more than 8000 patients. A substantial multi-center investigation[71] examining recurrences after After an average follow-up of 13 months for TAPP and TEP repairs, the recurrence rates were found to be 0.7%. and 0.4%, respectively; another came to the conclusion that there was little difference. [72]

### **Laparoscopic repair versus open tension-free (mesh) repair**

The results of systematic reviews[35,74] of data from some recent randomised trials on elective groyne hernia repairs performed either by open mesh or by laparoscopic technique (TAPP and TEP), with particular reference to the length of the procedure, the amount of time it took to resume normal activities, hernia recurrence, and persistent groyne pain, are summarised. TAPP Versus open mesh 10 and TEP Versus open mesh 4 were two of the 14 comparative studies that were included. Eight primary and recurrent hernias were included in three studies, but two studies did not mention any specifics. Three studies also covered primary hernias solely. The trials' patient counts ranged from 38 to 613. The mean or median follow-up time was between a short time and three years. Although information was unavailable for three trials, the mean or median length of operation was shorter in all open mesh groups. In 12 of the trials, the laparoscopic groups got back to work more rapidly; however, in one trial, the opposite was true, and the turnaround times were equal. There was no discernible difference in the short-term recurrence rates between laparoscopic mesh and open mesh methods (there is little information on long-term recurrences); recurrence rates of more than 10% were noted when carried out by surgeons with fewer than 250 laparoscopic repairs under their belts. [84] Although intra-operative life-threatening problems were more common in the laparoscopic group, postoperative sequelae were uncommon and of diverse reported incidence. [84] After laparoscopic repair, the risk of seroma formation increased although the rate of hematoma formation decreased. Compared to open repair, there was a lower incidence of persistent groyne pain.

### **New Method of Inguinal Hernia Repair**



A robust and active posterior wall to the inguinal canal is created with the aid of the external oblique muscle and its aponeurosis in a unique pure tissue repair method for any form of inguinal hernia that does not require the use of mesh, according to Desarda[85] of Pune, India. Because mesh is not readily available in rural or remote areas of many countries, it has been produced. Following the removal of the sac, the external oblique aponeurosis is partially severed from its medial leaf while maintaining continuity at both ends. To create a new posterior wall, this unattached section of external oblique aponeurosis is sutured to the inguinal ligament below and the muscular arch above, behind the cord. This strip acts as a shield to stop recurrence and is put under tension by muscle contraction. As a result, the internal oblique and transverse abdominis muscles are strengthened in addition by the external oblique muscle. The outcomes were very positive. Patients had an average hospital stay of 2-3 days and were back at work in 1-2 weeks. There was only one recurrence among 400 individuals (following up for more than ten years). These outcomes are comparable to mesh operation results. The procedure is straightforward, doesn't call for mesh or significant dissection, and yields outstanding outcomes. As a result, it might be a useful substitute for mesh or other open or laparoscopic repairs. [85]

## 2. CONCLUSION

A hernia repair should be effective, long-lasting, low in morbidity, and allow for a quick return to work or leisure activities. Regardless of the type of installation and the prevalence of both early and late persistent discomfort, the use of prosthetic mesh has emerged as superior and the preferred procedure. It reduces recurrences by around 50%. The postoperative pain and ability to return to work as measures of quality of life after hernia repair substantially favour tension-free and laparoscopic techniques. [86] Non-mesh approaches have no advantages for patients above the age of 18, according to evidence-based practise.

Which method—open or laparoscopic—is preferable if mesh is the superior option? Laparoscopic inguinal hernia repair is a hotly debated topic. It is contentious to discuss and utilise it frequently. [87] The advantages of laparoscopic surgery in terms of quicker recovery Postoperative discomfort, a slight benefit in reducing time away from work [86], and its clear benefits in cases of bilateral and recurring hernias are demonstrated. The rate of occurrence is comparable to open mesh repairs. However, even without the use of balloon dissectors, staples for fixation, and disposable instruments, laparoscopy is associated with higher anaesthesia (general anaesthesia is typically required), recovery room inputs, and costs, making it less cost-effective than an open mesh under local anaesthesia—an important consideration for a nation like ours.

Many surgeons are also discouraged by the laparoscopic repair process' lengthy learning curve. There is no "optimal" method of hernia repair; instead, it should be customised based on the type of hernia, the patient's characteristics, the surgeon's preferences, and the patient's preferences. Sir John Bruce of Edinburgh's closing remarks are only fitting:[88] "Hernia repair will probably never have its defining moment".

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