International Surgery Journal
*Vidhya SS et al. Int Surg J. 2023 Aug;10(8):1299-1306*
http://www.ijsurgery.com
pISSN 2349-3305 | eISSN 2349-2902

DOI: https://dx.doi.org/10.18203/2349-2902.isj20232324

**Original Research Article**

# Comparison between minimal stitch hernioplasty and continuous suturing of mesh in inguinal hernia repair: a randomised controlled trial

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**Received:** 13 May 2023
**Revised:** 16 June 2023
**Accepted:** 03 July 2023

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## ABSTRACT

**Background:** Inguinal hernia repair is the most commonly done surgery of all general surgical procedures. Hence in an attempt to decrease the pain and increase the patient's comfort, various techniques have been considered to fix the mesh. The aim of this study was to compare the differences between the two techniques of mesh fixation namely the minimal stitch method and the continuous suturing in terms of various parameters.
**Methods:** This study was conducted selecting 126 patients who attended the general surgery OPD at ESIC MC and PGIMSR and randomly allocating them to the two study groups; the patients were followed up till 6 months post-operatively. The parameters taken into account were: the operative time, the duration of hospital stay, the pain scores at various time intervals (POD 1, 3, 7, 30, 60, 90, 180) and the incidence of complications if any.
**Results:** Among the 126 male patients enrolled in the study, the highest % belonged to the age group 51-60. 90% of them had unilateral hernias. The pain scores were significantly low in the minimal stitch group from the first postoperative day up to 1 month. The operative time and duration of hospital stay was also significantly decreased in the minimal stitch group.
**Conclusions:** Hence, the minimal stitch technique used for inguinal hernia repair in our study proved to be comparable to the conventional suturing, better than the latter in terms of patients' subjective satisfactory factors such as less operative time and less hospital stay while having no significant difference in terms of occurrence of chronic inguinodynia or any other postoperative complications.

**Keywords:** Inguinal hernia, Minimal stitch, Continuous suturing, Pain score

## INTRODUCTION

An Inguinal hernia is a protrusion of abdominal cavity and its contents through the inguinal canal. It is very common in men with lifetime risk of 27% and 3% for women.[1] Hernias are among the oldest known afflictions of humankind, and surgical repair of the inguinal hernia is the most common general surgery procedure performed today. Despite the high incidence, the technical aspects of hernia repair continue to evolve. The most common type of abdominal wall hernias being inguinal hernia, there has been a lot of modification and advancements in the repair of the same, starting from Bassini who in 1884 first performed herniorrhaphy. Thereafter, there were many other surgeons like Lotheissen, MacVay who modified the techniques.[2] It was Dr. Francis Usher in 1955 who in the search of use of prosthetic systems to enhance the strength of the natural one, developed the first mesh using Marlex.

Though the Darning and the Shouldice repair came into existence, the repair of inguinal hernia using a prosthetic mesh remains the standard of care treatment throughout the world. Usher then came with polypropylene mesh and published his technique using the same in 1958, which is now popularized as the Litchenstein technique.[3]

The Litchentein technique is the most commonly used one today with various modifications thanks to its ease of operation and also it provides a tension-free repair.[4,5] The most common complication after inguinal hernia repair has been reported as chronic pain (incidence is 15-40%). Important causes for this postoperative pain include usage of sutures for the fixation of mesh, entrapment neuropathy of ilioinguinal and iliohypogatric nerves[4]. Various mesh suturing techniques have been experimented to mitigate the pain. One such is the fixing the mesh at vital points over the medial side which is claimed to be the most common site for recurrence.

### *Aim and objectives*

Aim and objectives of current study were; to compare the post-operative pain scores on post-operative day 1, day 3, day 7, first month, third month and sixth month using the VAS (Visual Analog Scale) between the adult patients undergoing the minimal stitch hernioplasty technique and the continuous suturing of mesh for inguinal hernia repair. To compare the operative time, duration of hospital stay and the incidence of other postoperative complications like seroma, hematoma, foreign body sinus and fistula formation; and recurrence at the end of third month, sixth month and twelfth month between the adult patients undergoing the minimal stitch hernioplasty technique and the continuous suturing of mesh for inguinal hernia repair.

## METHODS

### *Study type, location and duration*

Current study is a randomised controlled trial-interventional study conducted at ESIC medical college & PGIMSR, KK Nagar, Chennai, from November 2019 to October 2021.

### *Selection criteria*

Patients were selected for the study according to the below mentioned Inclusion and Exclusion Criteria. Patients were fully informed about the study, operative procedures and the risks. Informed consent was obtained from all participating patients.

### *Inclusion criteria*

Inclusion criteria for current study were male & female patients, Adult >18yrs, Direct inguinal hernia, Indirect inguinal hernia, Unilateral or bilateral, Patients planned for elective surgery and patients assessed under ASA I, II.

### *Exclusion criteria*

Exclusion criteria for current study were; Patients with BMI > 30kg/sq. m, recurrent hernia, sliding hernia and Patients requiring emergency surgery for obstructed, strangulated and incarcerated hernias.

### *Study procedure*

Totally 126 patients attending general surgical OPD at ESIC hospital, requiring inguinal hernia repair was randomly allotted to 2 groups using closed envelope method: Group A; patients undergoing minimal stitch hernioplasty technique and Group B; patients undergoing continuous suturing of mesh.

### *Operative procedure*

Under sterile aseptic precautions and under suitable anesthesia, patient was made to lie down in supine position. Painting and draping of parts was done. An approximately 6-8 cms long incision was made 2cms above and parallel to the inguinal ligament and deepened to reach the external oblique aponeurosis, which was incised along the direction of its fibers and the superficial inguinal ring cut open. Cord structures were identified, preserved and lateralized along with the ilioinguinal and the iliohypogastric nerves. Dissection was carried out to expose the inguinal ligament adequately. Direct sac was reduced and the defect closed with purse string sutures. Indirect sac was cut open, contents reduced, excess sac cut off and transfixed. Lytle's repair was done in case of patulous deep inguinal rings. The polypropylene prosthetic mesh was used. For group A, the mesh was anchored at (Figure 1) the periosteum of the pubic tubercle; 1.5cm lateral to the first bite; the medial most part of the conjoint tendon; 3 cm lateral to the deep inguinal ring.

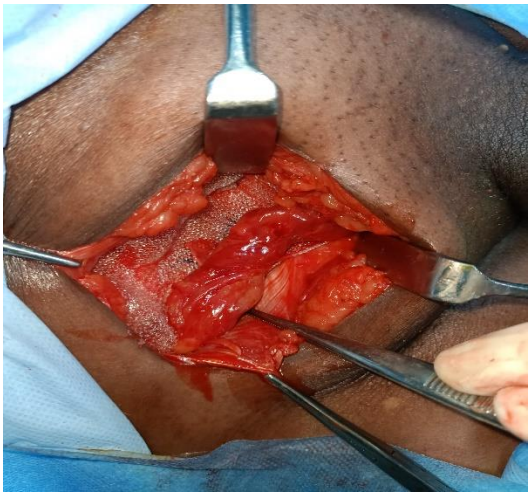

**Figure 1: Minimal stitch hernioplasty.**

For group B, the mesh was fixed by first bite at the periosteum of the pubic tubercle; superiorly to the conjoint

tendon using continuous sutures; inferiorly to the inguinal ligament using continuous sutures.

Laterally, a keyhole was made over the mesh and then the fish cut given in order to give way for the cord structures. The keyhole will prevent the strangulation of the cord structures once the mesh is taken up by the underlying tissues. The external oblique aponeurosis was approximated using 3'0 vicryl material by continuous sutures and then the wound was closed in layers. Sterile dressing was then applied. Parameters that were measured were operative time (minutes), duration of hospital stay (days), post-op pain-using vas (visual analog scale) on post-operative day 1, day 3, day 7, first month, third month and sixth month, complications: seroma, hematoma, foreign body sinus and fistula formation and recurrence or any other complication, if encountered will be recorded by the end of first month, third month and sixth month and twelfth month.

***Statistical analysis***

The study data was entered in Microsoft Excel 2016. The results were analysed using Microsoft Excel 2016 and SPSS version 22.0. The below mentioned parameters were measured for analysis. The data was presented in the form of pie charts, bar graphs and tables for ease of understanding.

## RESULTS

***Gender and age***

In the present study, all the 126 patients enrolled were males. Hence this posed a limitation in that the difference in outcome of the two techniques cannot be compared between the two genders. Maximum patients belonged to the age group of 51-60 followed by 41-50 (Figure 2).

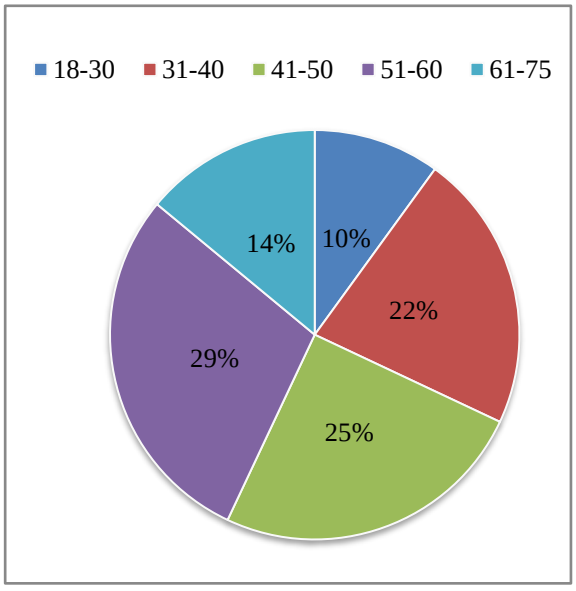


**Figure 2: Age wise distribution of patients.**

***Diagnosis***

Among the 126 patients enrolled, majority (90%) of them had unilateral hernias among whom 42% of the patients had right sided whereas 48% of the patients had left sided inguinal hernias. The remaining 10% of the patients had Bilateral hernias (Figure 3).

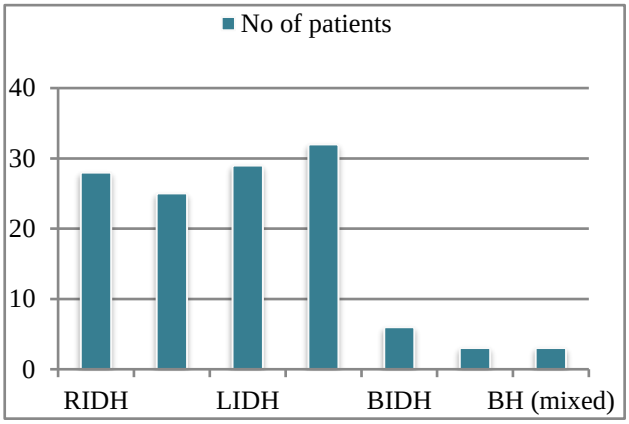


**Figure 3: Number of patients presenting with right, left, direct, indirect, bilateral or mixed type of hernias.**

***Operative time & duration of hospital stay***

The operative time was calculated in both the groups; it was significantly found to be lesser in the minimal stitch group than in the continuous suturing group. The duration of hospital stay was calculated in both the groups; patients who underwent minimal stitch hernioplasty were found to have discharged earlier than those who underwent the continuous suturing technique.

***Pain scores***

The VAS scores were calculated on the postoperative days 1, 3, 7, and then at the end of 1st, 2nd, 3rd and 6th months. There was a significant difference found in the VAS scores between the two groups on the postoperative days 1, 3, 7 and 30. The patients in the minimal stitch group reported less pain on these days. But there was no difference in the VAS scores (p value was found to be >0.05 ) at the end of 2nd, 3rd and 6th months. The highest pain score recorded at the end of the 6 months was "5", 4 patients with the continuous suturing technique had reported it while only one patient who underwent the minimal suturing technique reported so. No patient was found to have chronic inguinodynia in our study after 6 months (Table 1).

***Duration of hospital stay***

The duration of hospital stay following surgery using both the techniques were recorded and the difference between them with its significance was calculated. The p-value was found to be 0.000403, which was significant. Hence the technique of minimal suturing did make a difference in the patient being discharged earlier from the hospital.

***Operative time***

The operative time was calculated as the time from the skin incision to that of skin closure which was done uniformly throughout in all the other steps (e.g., Sutures were used uniformly for all the patients to close the skin) except the comparison techniques employed in our study for the fixation of mesh, which was allocated to each and every patient as mentioned before by randomization. The result of the comparison between these techniques was found to yield a p value of <0.00001, which was significant.

**Table 1: P value of pain scores for upto 6 months.**

| POD | Difference in pain scores, p values |
|---|---|
| **1** | 0.006904 |
| **3** | <0.00001 |
| **7** | <0.00001 |
| **30** | 0.000274 |
| **60** | 0.117 |
| **90** | 0.086 |
| **180** | 0.087 |

***Complications***

The only complications reported were superficial incisional-surgical site infection (SSI) and seroma. No other mesh related complications were reported in either of the group of patients. Three patients in the continuous suturing trial group developed complications, two of which were brought on by surgical site infections and one by seroma. Two patients in the minimal suturing trial group developed complications, each brought on by seroma and surgical site infection. Regardless of the mesh suturing method, all patients received conservative care (Table 2).

**Table 2: Complications encountered during the study period.**

| Complications | Continuous Suturing | Minimal Suturing |
|---|---|---|
| **Surgical site infection** | 2 | 1 |
| **Seroma** | 1 | 1 |

## DISCUSSION

A hernia is defined as an area of weakness or complete disruption of the fibromuscular tissues of the body wall.[2-4] Structures arising from the cavity contained by the body wall can pass through, or herniate, through such a defect. While the definition is straightforward, the terminology is often misrepresented. It should be clear that hernia refers to the actual anatomic weakness or defect, and hernia contents describe those structures that pass through the defect. Hernias are among the oldest known afflictions of humankind, and surgical repair of the inguinal hernia is the most common general surgery procedure performed today.[1-3] Despite the high incidence, the technical aspects of hernia repair continue to evolve.

***Epidemiology***

Seventy-five percent of all abdominal wall hernias are found in the groin, making it the most common location for an abdominal wall hernia. Of all groin hernias, 95% are hernias of the inguinal canal with the remainder being femoral hernia defects. Inguinal hernias are nine times more common in men than in women.[4,5] Although femoral hernias are found more often in women, the inguinal hernia is still the most common hernia in women. Overall lifetime risk of 1 developing a groin hernia is approximately 15% in males and less than 5% in females.[5] After an initial peak in the infant, groin hernias become more prevalent with advancing age.[5-9] In the same way, the complications of hernias (incarceration, strangulation, and bowel obstruction) are found more commonly at the extremes of age.[6-14]

***Anatomy***

The boundaries of the inguinal canal must be understood to comprehend the principles of hernia repair. In the inguinal canal, the anterior boundary is the external oblique aponeurosis; the posterior boundary is composed of the transversalis fascia with some contribution from the aponeurosis of the transversus abdominis muscle; the inferior border is imparted by the inguinal and lacunar ligaments; and the superior boundary is formed by the arching fibres of the internal oblique musculature.[7] The internal (or deep) inguinal ring is formed by a normal defect in the transversalis fascia through which the spermatic cord in men and the round ligament in women pass into the abdomen from the extraperitoneal plane. The external (or superficial) ring is inferior and medial to the internal ring and represents an opening of the aponeurosis of the external oblique. The spermatic cord passes from the peritoneum through the internal ring and then caudally into the external ring before entering the scrotum in males.[6,7] From superficial to deep, the surgeon first encounters Scarpa's fascia after incising the skin and subcutaneous tissue. Deep to Scarpa's layer is the external oblique aponeurosis, which must be incised and spread to identify the cord structures.[12] The inguinal ligament represents the inferior extension of the external oblique aponeurosis, and extends from the anterior superior iliac spine to the pubic tubercle. The medial extension of the external oblique aponeurosis forms the anterior rectus sheath.[6]

The iliohypogastric and ilioinguinal nerves, which provide sensation to the skin, penis, and the upper medial thigh, lie deep to the external oblique aponeurosis in the groin region. The internal oblique aponeurosis is more prominent cephalad in the inguinal canal, and its fibres form the superior border of the canal itself. The cremaster muscle, which envelops the cord structures, originates from the internal oblique musculature. The transversus abdominis muscle and its fascia represent the true floor of

the inguinal canal. Deep to the floor is the preperitoneal space, which houses the inferior epigastric artery and vein, the genitofemoral and lateral femoral cutaneous nerves, and the vas deferens, which traverses this space to join the remaining cord structures at the internal inguinal ring.[7]

### *Etiology*

The indirect inguinal hernia, the most common form of groin hernia across all ages and both genders, is thought to be congenital in etiology. The processus vaginalis is the pocket of peritoneum that forms around the testicle as it descends through the internal ring and along the inguinal canal into the scrotum during the 28th week of gestation. The primary etiology behind the indirect inguinal hernia is believed to be a patent processus vaginalis, which in essence represents a hernia sac. In this way, the hernia defect is the internal ring itself, and the sac is preformed but never closes at the end of gestation. Once intra-abdominal contents and their way into the sac, an indirect inguinal hernia is formed.[5-7] It is likely, however, that every person with a patent processus vaginalis does not develop an inguinal hernia during his or her lifetime. Thus, other predisposing factors must aid in indirect inguinal hernia formation. It is commonly thought that repeated increases in intra-abdominal pressure contribute to hernia formation; hence, inguinal hernias are commonly associated with pregnancy, chronic obstructive pulmonary disease, abdominal ascites, patients who undergo peritoneal dialysis, laborers who repeatedly flex the abdominal wall musculature, and individuals who strain from constipation. It is also thought that collagen formation and structure deteriorate with age, and thus hernia formation is more common in the older individual.[8] Several inborn errors of metabolism can lead to hernia formation. Speci- fically, conditions such as Ehlers–Danlos syndrome, Marfan's syndrome, Hunter's syndrome, and Hurler's syndrome can predispose to defects in collagen formation. There is evidence that cigarette smoking is associated with connective tissue disruption, and hernia formation is more common in the chronic smoker.[6-9]

### *Mechanisms which prevent hernia in the inguinal region*

Though inguinal region is a weak spot in the abdominal musculature, rise in intra-abdominal pressure would have caused inguinal hernia in every individual. Hence, there are defensive mechanisms which prevent hernia to occur. These are: Obliquity of the inguinal canal - when there is rise in intra-abdominal pressure the posterior wall is opposed to the anterior wall and thus prevents coming out of abdominal content through inguinal canal. Shutter mechanisms of the arched fibres of the internal oblique and transversus abdominis will bring down these muscles towards the floor when they are contracted during rise of intra-abdominal pressure. It has been postulated that occurrence of direct inguinal hernia is often due primarily to a higher position of this transversus aponeurotic arch. So, when this muscle contracts, the arch is brought down, but it does not reach the inguinal ligament thereby leaving a weak area in the posterior wall of the inguinal canal.

Sphincter action of the transversus abdominis and internal oblique muscles at the deep inguinal ring. There is transversalis fascial sling which is derived from the transversalis fascia and this sling reinforces the medial and inferior margin of the ring. When the transversus abdominis contracts it pulls the transversalis fascial sling superiorly and laterally. Ball valve action of the cremaster muscle pulls up the spermatic cord into the canal and plugs it during rise in intra-abdominal pressure. In front of the deep inguinal ring there are strong fibres of the internal oblique. This prevents entry of any abdominal content through the deep inguinal ring. Strong conjoint tendon is there in front of Hesselbach's triangle to prevent direct inguinal hernia.[9,10]

### *Clinical manifestations*

The most common presenting symptomatology for a groin hernia is a dull feeling of discomfort or heaviness in the groin region that is exacerbated by straining the abdominal musculature, lifting heavy objects, or defecating. These maneuvers worsen the feeling of discomfort by increasing the intraabdominal pressure and forcing the hernia contents through the hernia defect. Pain develops as a tight ring of fascia outlining the hernia defect compresses intra-abdominal structures with a visceral neuronal supply. With a reducible hernia, the feeling of discomfort resolves as the pressure is released when the patient stops straining the abdominal muscles. The pain is often worse at the end of the day, and patients in physically active professions may experience the pain more often than those who lead a sedentary lifestyle.[10-14] Overwhelming or focal pain from a groin hernia is unusual and should raise the suspicion of hernia incarceration or strangulation. Incarceration and strangulation of a groin hernia may present as a bowel obstruction when the tight hernia defect constricts the lumen of the viscus. Hence, all patients presenting with bowel obstruction require a thorough physical examination of the groin region for inguinal and femoral hernias.[11-13]

### *Physical examination*

The groin hernia should be properly examined with the patient in the standing position. This allows the hernia contents to fill the hernia sac and make the hernia obvious on physical examination. Some hernias, however, may be easily identifiable in the supine position. It should be noted that the exact anatomical classification of the inguinal hernia (i.e., indirect vs direct) is impossible to accurately predict based on physical examination alone.[13] In the male patient, using the second or third finger, the examiner should invaginate the scrotum near the external ring and direct the finger medial toward the pubic tubercle. The examiner's finger will thus lie on the spermatic cord with the tip of the finger within the external ring. The patient is then asked to cough or perform a Valsalva maneuver. A true inguinal hernia will be felt as a silklike sensation

against the gloved finger of the examiner. This is the infamous "silk glove" sign.[6-13]

The female patient does not have the long and stretched spermatic cord to follow with the examiner's finger during the physical examination. Instead, two fingers can be placed along the inguinal canal, and the patient is asked to cough or strain. If present, the examiner should feel the sensation of the hernia sac against the gloved finger. Particular attention in the female patient should be paid to the location of the sensation; femoral hernia sacs will present medial and just inferior to the lower border of the inguinal ligament.[7-13] While the physical examination does not differ in the infant, it can be more challenging to elicit the hernia impulse given the compressed groin anatomy of the young child. It is well known that a groin hernia can be more readily diagnosed in the infant who is actively crying and hence increasing the intra-abdominal pressure through flexion of the abdominal wall musculature.[12-15]

***Imaging***

In the case of an ambiguous diagnosis, radiologic investigations may be used as an adjunct to history and physical examination. Imaging in obvious cases is unnecessary and costly. The most common radiologic modalities include ultrasonography (US), computed tomography (CT), and magnetic resonance imaging (MRI). Each technique has certain advantages over physical examination alone; however, each modality is associated with potential limitations. US is the least invasive technique and does not impart any radiation to the patient. Anatomic structures can be more easily identified by the presence of bony landmarks; however, because there are few bones in the inguinal canal, other structures such as the inferior epigastric vessels are used to define groin anatomy. Positive intra-abdominal pressure is used to elicit the herniation of abdominal contents. Movement of these contents through the canal is essential to making the diagnosis with US, and lack of this movement may lead to a false-negative result. A recent meta-analysis demonstrated that US detects inguinal hernia with a sensitivity of 86% and specificity of 77%. In thin patients, normal movement of the spermatic cord and posterior abdominal wall against the anterior abdominal wall may lead to false-positive diagnoses of hernia.[14] CT and MRI provide static images that are able to delineate groin anatomy, to detect groin hernias, and to exclude potentially confounding diagnoses. A meta-analysis determined that standard CT detects inguinal hernia with a sensitivity of 80% and specificity of 65%. Although direct herniorraphy has a higher sensitivity and specificity than CT, its invasiveness and limited availability restrict its routine use. As CT imaging increases in resolution, its sensitivity in detecting inguinal hernia is expected to expand; however, this has yet to be clinically confirmed by surgical correlation.[7] When used to diagnose inguinal hernia, MRI is frequently reserved for cases where physical examination detects a groin bulge, but where US is inconclusive. In a 1999 study of 41 patients with clinical findings of inguinal hernia, laparoscopy revealed that MRI was an effective diagnostic test, with a sensitivity of 95% and specificity of 96%. MRI has become more sophisticated since 1999; however, its high cost and limited access remain obstacles to more routine use.[6,7]

***Cclassification based on behaviour***

Depending on the behavioural characteristic, it is classified as; Reducible hernia, Irreducible hernia, Obstructed incarcerated hernia, Strangulated hernia and Inflamed hernia.

Reducible hernia: When a hernia reduces spontaneously, on lying down or manually reduced by the patient or by the surgeon, it is called as reducible hernia.[8-13] The two most important characteristics of hernia is that it is reducible and impulse on coughing is present. Irreducible hernia: When the contents of the hernia cannot be returned back to the abdomen, it is called an irreducible hernia. Causes of irreducibility: Adhesions of the contents to each other; adhesions of the contents to the sac; adhesions between the sac; narrowing of the neck of the sac due to fibrosis, in case of continued use of truss; omentocele-difficult to reduce; Sliding hernia. If the content is large intestine, and if this becomes obstructed. Scrotal abdomen-when there is a massive hernia inside the scrotum, it often becomes irreducible[6-8].

***Obstructed or incarcerated hernia***

When the hernia is associated with intestinal obstruction due to occlusion of the bowel it is called obstructed hernia. If a portion of colon is the content of the sac and is blocked with faeces, it is called incarcerated hernia. Characteristic features of obstructed hernia - Expansile cough impulse not present; hernia is irreducible; patient does not complain of pain; the hernia is lax and not tender; features of intestinal obstruction present. Strangulated hernia: It is an irreducible hernia and intestinal obstruction along with arrest of blood supply to the contents.[6-8]

***Treatment***

Inguinal hernia repairs were predominantly ruled by tissue repairs in the premesh era. The tissue repairs were characterized by high rates of recurrences, no matter however meticulously they were performed.[6] Shouldice's repair was the only technique found to have the lowest recurrence rate of 2.2% then. Starting with Nylon, several materials were tested for the procedure. The search ultimately ended with Polypropylene being widely accepted as a near ideal mesh in 1962.[7-12] It was more than 25 years later than that, in 1986, Litchenstein had presented his open technique for mesh plasty using this mesh.[8] The most disturbing complication occurring frequently after this technique is the incidence of postoperative pain.[9-11] Although there was a significant difference in the pain experienced by the patients in our study group when compared to the conventional method

until the first month postoperatively, but thereafter there wasn't any difference up to 6 months nor did any patient experience any chronic inguinodynia. There wasn't any recurrence reported until the study period and no significant difference among the rate of other complications encountered. Hence, the minimal stitch technique used for inguinal hernia repair in our study proved to be comparable to the conventional suturing, better than the latter in terms of patients' subjective satisfactory factors such as less operative time and less hospital stay while having no significant difference in terms of occurrence of chronic inguinodynia or any other postoperative complications; as well as easier to perform, providing a better learning curve for the surgical residents.

The treatment of all hernias, regardless of their location or type, is surgical repair. Elective repair is performed to alleviate symptoms and to prevent the significant complications of hernias, such as incarceration or strangulation. While the limited data available on the natural history of groin hernias show that these complications are rare, the complications are associated with a high rate of morbidity and mortality when they occur. At the same time, the risks of elective groin hernia repair, even in the patient with a complicated medical history, are exceedingly low. Outcomes of surgical repair are generally excellent with minimal morbidity and relatively rapid return to baseline health. The major risk with delayed surgical repair is the risk of incarceration and/or strangulation.[11] It is not possible to reliably identify those hernias that are at an increased risk for these complications. It is known that the risk of incarceration of a hernia is greatest soon after the hernia manifests itself.[13] This is likely due to the fact that at the early stage of the hernia, the defect is small and fits tightly around the hernia sac; therefore, any contents that fill the sac may quickly become trapped within the hernia. Over time, the hernia defect stretches due to the tissue that enters and leaves the sac with changes in intra-abdominal pressure. After 6 months, the risk of hernia incarceration decreases from 5% per year to 1-2% per year.[7,8] Clearly, all risks of tissue loss aside, elective hernia repair is still preferred to emergent repair.

***Recurrence***

It is rare in the early postoperative setting, occurs secondary to undue tension on the repair, deep infection or tissue ischemia.[12-14] No advantage in limiting the postoperative activities. As soon as the postoperative discomfort is over, the patient can return to normal activities. There is no evidence to prove that prolonged rest can reduce the chance of recurrence. It depends on the technique used for hernia repair and not on the postoperative activity of the patient. Emergency surgery for strangulated or incarcerated hernia increases the risk of postoperative recurrence.[8] The inherent inflammation, tissue ischemia and fascial oedema in strangulated hernia provides an environment for hernia repair to be done under undue tension or through unhealthy tissue. Tobacco use and smoking has a role in recurrence of hernia. The relationship between smoking and hernia formation or recurrence was first established in 1981.[14] Research has identified some proteolytic enzymes to degrade the connective tissue components.

***Limitations***

In our study, there were many limitations with respect to various parameters, which were worth mentioning. All the patients taken into account were males. The patients were followed up for a period of 6 months only, but follow-up period of at least 2 to 5 years is required to study the true incidence of recurrence.

## CONCLUSION

Current study concludes that the minimal stitch technique for inguinal hernia repair in comparison with continuous suturing has earlier pain relief, lesser operative time, lesser duration of hospital stay, early return to work and is easier to perform.

*Funding: No funding sources*
*Conflict of interest: None declared*
*Ethical approval: The study was approved by the Institutional Ethics Committee*

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**Cite this article as** Vidhya SS, Palit S, Giridharan B, Dinesh M, Balasubramanian A. Comparison between minimal stitch hernioplasty and continuous suturing of mesh in inguinal hernia repair: a randomised controlled trial. Int Surg J 2023;10:1299-306.