



## Bilateral Inguinal Hernia Recurrence after 24 Years

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### Abstract

Inguinal hernia repair is one of the commonest operations performed in the world over. The success of the hernia repair is judged mainly by the recurrence rate after following the operation. Different techniques have different recurrence rates. Open hernia repairs have recurrence rate between 10% to 30%. Lichtenstein's tension free open hernia repair heralded a new era the reported recurrence after this repair in around 0% to 1.7%.

**Keywords:** Hernia recurrence; Inguinal hernias, Hernioplasty hernias

### Introduction

Inguinal hernia repair is one of the commonly performed operations all over the world. Inguinal hernia repair is measured by its long term recurrence free duration. Recurrence rate varies from the procedure to procedure in open tissue repair. In pre-mesh era, the recurrence rate about 15% for the primary repair [1], and about 35% for the recurrent hernia repair [2].

It is known that maximum recurrence of inguinal hernia repair occurs within 1-2 years hence most of the surgeons and institutions follow up their patient's up to 2-5 years. It is also noted that most of the patients do not come for any follow up after a period of 2-3 years. Hence, if any recurrence occurs later this will be unnoticed or not registered. We report a case of recurrence in bilateral inguinal hernia after 24 years following open repair (Modified Bassini's Repair).

### Case Presentation

A 75-years-old man came to Surgical OPD with the history of swelling in both groin since 1 year. The patient noticed a small swelling over the left groin first later on the right side. It was small initially and attained the present size about 4 cm to 5 cm. Both swellings appeared while straining and spontaneously reduced while lying down.

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#### Past surgical history

The patient had bilateral inguinal Hernia repair 24 years back in the district Civil Hospital.

#### Past medical history

The patient was a chronic smoker for 35 years and suffering from COPD for which he is on regular treatment with bronchodilators and steroid inhaler, but no history of diabetes mellitus or hypertension.

On examination the patient is an elderly man moderately built and nourished. His vital signs were BP 110/70 mm of Hg, pulse 76/min and respiratory rate 18/min. Careful examination of the respiratory system revealed reduced air entry bilaterally, basal ronchi with crepitations. Other systems were normal.

Local examination revealed right side inguinal hernia measuring 6 cm × 7 cm and on the left side it was 4 cm × 5 cm, both were reducible and the previous scar was present.

The patient underwent bilateral inguinal hernioplasty in March 2016 under spinal anaesthesia. Right side was operated first as it was larger in size later the left side. Hernia kit with prolene mesh 11 cm × 7 cm was used for meshplasty. He was shifted to ICU for post operative monitoring as the patient condition was stormy and had to be administered intravenous antibiotics, steroids and bronchodilators in the first 24 h to 48 h. When patient's general condition was stabilized as well as COPD was controlled, he was shifted from ICU and the treatment was changed over to oral administration.

The patient was discharged in good condition on the 7<sup>th</sup> post-operative day. He is on regular follow up since 12 months, surgical wounds on both the groin have healed and patient is doing well

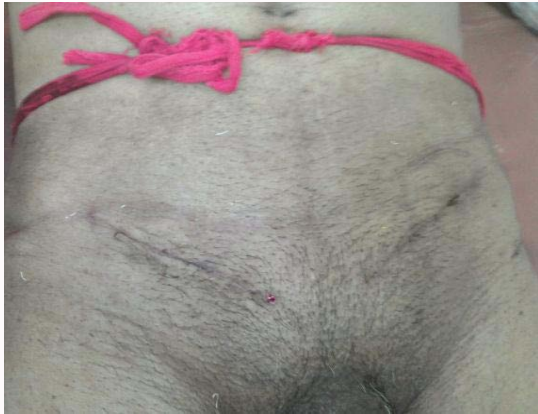


Figure 1: Bilateral inguinal hernioplasty (post-op).

(Figure 1).

## Discussion

Inguinal hernia repair is one of the most common surgical operations performed in all parts of the world. In USA, approximately 700,000 inguinal hernia operations are done yearly. In England, approximately 60,000 inguinal hernia operations are done annually [3]. Recurrence of inguinal hernia repair differs from open hernia repair to laparoscopic hernia repair. Even in open hernia repairs different techniques have different recurrence rates.

Primary inguinal hernia repair recurrence rate is around 4.8% in shouldice technique compared to other techniques such as Bassini's, cooper ligament repair etc., and the recurrence rate of 7.7% is reported [4].

There is an anatomic-clinical classification of recurrent inguinal hernias.

- **Type R1:** first recurrence 'high' oblique external, reducible hernia with small (<2 cm) defect in non-obese patients, after pure tissue or mesh repair.
- **Type R2:** first recurrence 'low', direct, reducible hernia with small (<2cm) defect in non-obese patients, after pure tissue or mesh repair.
- **Type R3:** all the other recurrences- including femoral recurrences; recurrent groin hernia with big defect (inguinal eventration); multi-recurrent hernias; non-reducible, linked with a contralateral primitive or recurrent hernia; and situations compromised from aggravating factors (for example obesity) or anyway not easily included in R1 or R2, after pure tissue or mesh repair.

Etiology for recurrence after open inguinal hernia repair is broadly classified as operation related factors, general factors and local factors.

### Operation related factors

i) Experience of the surgeon is an important factor. Studies in specialized centres shouldice clinic has shown lower incidence of recurrence as low as 0.2% to 2.7% with 100% following over 10 years compared to non- specialized centres shouldice repair in shouldice clinic [5].

ii) **Tension:** Tension in the sutured area. In open hernias if one

is not careful then the tissues are approximated with some tension be it at conjoint tendon with inguinal ligament as in Bassini's repair or with coopers ligament in another technique. Tension is avoided by using mesh and other synthetic material for open repair [6].

iii) **Infection:** Infection in the tissues is implicated for the recurrence in about 50% of the cases. The suture material acts as a foreign body concentrating the inflammatory process around leading to break down of the tissues causing recurrence [7].

iv) **Suture material:** Surgical wound gains about 80% of strength at the end of 6 months. It is logical that the surgical wound must be support till such time by the sutures. Synthetic absorbable sutures lose 50% to 80% of the strength in 14 days time and disintegrate in few weeks. Biological material such as silk, cotton, linen lose about 40% of their strength within 6 weeks hence not suitable for hernia repair. Shouldice clinics uses 34 gauge stainless steel wire as suture and their result is 1% of recurrence in 250,000 hernias [8].

v) **Prolene suture:** Prolene is synthetic non absorbable suture. It will not adhere to the tissues and holds the knot well. Prolene is biologically inert and has minimal tissue reaction prolene does not disintegrate and it maintains its tensile strength up to 2 years [9].

### General factors

General conditions will effect in any operations including hernia repair. There are many factors which adversely influence wound healing and collagen production. Some of these factors are malnutrition, hypoproteinemia, malignant cachexia, long term steroid therapy and advanced liver disease and others. It is commonly seen that smokers develop both hernias and recurrence of hernias than non-smokers. In a study it is shown that smokers have higher circulating serum elastolytic activity than non-smoker [10].

Patients who develop recurrent hernias produce insufficient amounts of naturally occurring growth factors and immuno-modulators that stimulate angiogenesis and granulation production which increases wound cellularity, fibroblast proliferation and collagen production [11].

### Local factors

**Size of hernia:** Large hernias recur more than smaller ones because of over stretching and destruction of tissues which are normally used for repair [12].

**Mixed hernias:** It has be reported that while doing the original hernia repair some hernias are either missed or overlooked sac which later cause recurrence [13].

### Site of recurrence

The most common site for recurrence is the medial area between the rectus sheath and the inguinal ligament. When buttress has not been effectively constructed during the primary repair causes the recurrence. Another reason is that this area has been sutured under tension which will give way in later days.

Lichtenstein consideration regarding the distribution of hernia sites in recurrence is as follows: 47% at the public tubercle, 40% at the internal ring and 13% in the entire posterior wall [14]. There is an interesting article about inguinal hernia recurrence in which the author conclude that about 91.87% recurrences occur within 10 years of the operation and for incisional hernia recurrence may occur even at 50 years [15].

In our case this patient was operated in one of the teaching hospital in the city and the author was a medical student in the same hospital thirty five years ago. The common surgical procedure in those days for inguinal hernia was "Modified Bassini's Repair". It must be appreciated that the tissue repair such as modified Bassini's repair when done properly will last many years till the tissue failure occurs as in our case. We have done tension free open mesh hernioplasty using non absorbable suture (prolene). The patient is on regular follow up and surgical wounds healed. Thus we report this interesting case of recurrence.

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