

**Emergency inguinal Hernia Repair, Comparison of Desardas and Darning Technique**<sup>1</sup>Dr Usba Sahar, <sup>2</sup>Dr Asmaa Izhar, <sup>3</sup>Dr Eiraj Khan<sup>1,2,3</sup>MBBS, Rawalpindi Medical University.**Corresponding Author:** Dr Usba Sahar, MBBS, Rawalpindi Medical University, Rawalpindi.**Type of Publication:** Original Research Article**Conflicts of Interest:** Nil**Abstract**

**Aim of the Study:** The most common operation performed by surgeons, all around the world is emergency inguinal hernia repair. The purpose and aim of this research paper is to find out the meantime of operation, post-operation pain, infection risks, wound healing duration and comparison between Desardas and Darning techniques of operations for emergency inguinal hernia technique. This whole study encompasses the statistical data of patients belonging to Pakistan, and the patients who were selected for carrying out this study were chosen from the hospital in Lahore.

A group of patients with inguinal hernia issues was kept under observation for study. All patients were divided on the basis of Darning and Desarda techniques opted for those patients. Mean operation time for the Darning group was observed as  $53.06 \pm 5.51$  minutes and mean operation time for the Desarda group was observed as  $55.53 \pm 6.81$  minutes. Patients felt more pain in the Desarda group, 80.5% in comparison to the Darnia group, who felt less pain 71%. The ratio of wound infection was higher in the Desarda group and lower in the Darning group. Similarly, the recurrence issue was found higher 56% in the Darning group as compared to 8% in the Desarda Group.

**Keyword:** Hernia, Darning Technique, SWGS**Introduction**

A hernia is an abnormal projection of an organ. It occurs when an organ pushes itself out of the tissues or muscles

that hold it in its place and comes in contact with the walls of other contacting tissues. For example, intestine, both small and large, can break through its weakest part and comes in contact with other areas. The hernia can occur in the abdomen between the hips, chest, groin areas and upper thigh. <sup>1</sup>

Among all hernia issues, inguinal hernia constitutes about 72% of all other external hernias and its repair is the most common one which is carried out in routine operations. Annually, every 14 out of 1000 people of all ages face this issue. More than 80 operative techniques for hernia were elaborated and operated in the late 1880s. <sup>2</sup> At first, the Darn technique all alone was popular among surgeons owing to its effectiveness, less post-operation complications and recurrence chances. Later, the Desarda technique was practiced that addressed the physiology and anatomy of the inguinal canal and was based on tissue repair procedure. <sup>3</sup> Desarda technique was more promising for the surgeons because it has higher repair and fewer recurrence chances with fast post-operation recovery. But, despite its benefits, this technique is less in practice in comparison to the Darning technique. <sup>4</sup> Here, a point must be clarified that any operation is considered successful on the basis of its operation time, recurrence chances, wound healing rate and infection risks, post-operation pain and recovery time. These points are the benchmark upon which hernia operation is also evaluated.

The aim of the study is to bring to light the plus and negative aspects of Desarda and Polypropylene Darn methods which are most commonly used for the surgery of inguinal hernia in men.

### Material and Methods of Survey

The survey-based study is included in this part of the paper. A randomized controlled trial was conducted for a period of 24 months from November 2017 to November 2019. A total of 188 male patients with an age range between 20 to 60 were held under observation in the hospital in Rawalpindi. All these patients had obstructed, incarcerated and strangulated emergency inguinal hernia disease. Patients were properly diagnosed and chosen on the basis of inclusion criteria. All patients with primary and recurrent hernia issues were excluded from the list.

Patients were divided into two groups, with 94 patients in the Desarda hernia repair group, and 94 patients in the Darning repair group. A full examination of all patients' medical and laboratory profiles was carried out including complete blood count, chest X-rays, urea, ECG, creatinine and electrolytes, blood sugar, PT, APTT, and other assessment tests make sure that they are good to go with the general anesthesia process.

#### • Consent of Patients and Hospital Board

Written consent of the Hospital Ethical Board and of patients was taken before starting the study. Patients were clearly addressed about the purpose, aim, process, risk and benefits of this survey. They were also taught about the marking charts which indicate the severity of pain on different scale levels.

#### • Assessment

After the surgery, NSAIDS was given per rectally on the operation bench. Then postoperative pain was analyzed with the help of a given visual analog scale. The readings were taken every 4 hours for one whole day. The scale had 'no pain' to 'worst pain imaginable' levels of 100 mm.

Patients were asked to choose the level that best describes their pain.

Patients were explained this 100 mm scale as; score from 1 to 30 mm was elaborated as mild pain, scores from 31 to 70 mm were defined as moderated pain, and score above 70 mm was considered as the worst pain level. Operation wounds were continuously assessed with the help of SWGS for 48 hours, and then again rechecked on the 7<sup>th</sup> day of operation. Any wound infection or seroma was also carefully examined and its data was kept safe. Patients after discharge from the hospital were re-examined at different intervals like on 14<sup>th</sup>, 21<sup>st</sup> and 28<sup>th</sup> day.

SPSS21 (Statistical Package for Social Sciences) was then used to analyze the statistical data of the survey. Frequencies and percentages were recorded and assembled in the tables. The variable like age, BMI, operation time, pain, infection rate and recurrence chances for both groups; Desarda and Darning, were added in the table.

### Results

A total of 18 patients were kept under observation with 94 in each group of our hernia repair technique. The mean age of patients was  $61 \pm 15.22$  years, and the mean BMI calculated was  $23.52 \pm 3.03$  Kg/ m<sup>2</sup>. The mean operation time was observed at  $55.3 \pm 6.33$  minutes. The prominent difference was mean operation time between both the techniques.

The pain level was moderate in the Desarda group, but it was quite higher in comparison to the Darning group. Chances of wound infection were also found higher in the Desarda group at 19.4% as compared to 9.7% in the Darning group. Recurrence was, however, higher in the Darning group, 55.5%, and less in the Desarda group 7.4%.

Table1: General characters of patients and Desarda surgery

	Group	Mean
Age in years	Desarda	59.49 ± 14.81
Operation time in minutes	Desarda	60.9 ± 8.97
BMI in kg/ m <sup>2</sup>	Desarda	23.70 ± 3.11

Table2: General characters of patients and Darning surgery

	Group	Mean
Age in years	Darning	61 ± 55.22
Operation time in minutes	Darning	54.01 ± 5.61
BMI in kg/ m <sup>2</sup>	Darning	23.52 ± 3.03

### Discussions

Not extensive data is present on Desarda and Darning technique opted for treating emergency hernia repair in patients. The survey, which was conducted and its statistical data explains that no significant difference is present between both the techniques regarding operation time, post-operation pain, infection chances and wound healing duration; difference does exist, but it is not that much on the basis of which we can state that this technique is far better than the other one.

However, many other studies have shown that Desarda is more in practice owing to its less cost and less wound infection chances in comparison to the Darning technique. Many published articles show an increasing interest rate of patients for this technique. It was also found in a document that male sexual functions are affected by the surgery method opted by the surgeon, so they tissue-based technique in young patients. Surgeries for strangulated hernia previously showed some infection cases, so doctors now prefer tissue-based surgeries like Desarda for this kind of repair as well.

While talking about recurrence, in our study, no doubt Darning had a less rate as compared to Desarda. But, it was found that the rate of recurrence was independent of

the type of work and time off work. Hence, vast global research and study are required to find out the best method for emergency inguinal hernia repair. The work to optimize hernia surgery by lowering the complications is still in process.

### Understanding Inguinal Hernia

An inguinal hernia is a type of hernia which occurs when any part of the intestine protrudes through the weakest spot or peritoneum in the abdominal cavity. The bulged part can be very painful, especially while lifting heavy objects, bending over or even coughing. An inguinal hernia is not dangerous that it becomes the matter of life and death, but if the issue remains prolonged then it can be life-threatening and extremely painful.

### Symptoms

The symptoms of inguinal hernia are given as follows:

- When a person cough or strain, a bulge becomes prominent over their pubic bone
- Burning, aching and painful sensation in the bulge
- Pain in the groin when the patient coughs, lifts or bend over
- Heavy discomfort, dragging like feeling in the groin
- Swellings around the testicle
- Pain in the lower abdomen cavity

### Causes

Now, let's talk about some of the prominent causes to better understand this disease and acknowledge patients to prevent this or figure this out at the early stage to go for its surgery.

- Increased abdominal pressure
- Weakness in abdominal, most probably pre-existing one
- Strenuous activities
- Straining during urination or bowel movements
- Severe sneezing and chronic coughing

Many people already have weakness in their abdominal wall at the time of birth, when their peritoneum cavity doesn't close properly. This weakness becomes the cause of an inguinal hernia. Other types of hernia develop later in life when muscles grow weak and old with age or due to injury, accidents or some other hectic activities accompanied by smoking.

In men, the inguinal canal where the spermatic cord enters the scrotum is the spot of inguinal hernia. While in women, a canal that carries ligament to hold the uterus in place is the spot of inguinal hernia. Sometimes tissues of the uterus attach it to the pubic bone and become the causes of hernia.

The risk factors in men are eight times higher than in females. Family history also plays a significant role in its occurrence. Prolonged constipation, severe smoking, premature birth, and low birth weight are all common causes of inguinal hernia.

### Complications

Inguinal hernia if remains prolonged can cause the following complications which require immediate attention,

- **Incarcerated Hernia:** If hernia bulge is pushed back improperly then some parts of the hernia might become trapped in the weak points of the abdominal wall. This issue is called an incarcerated hernia and can cause severe pain, nausea, vomiting, inability to pass gas out and obstruct bowel movements.
- **Pressure on other tissues:** When inguinal hernia enlarges with time and is not repaired, then it can put pressure on the surrounding tissues as well. For example, in men, an inguinal hernia can cause the enlargement of the scrotum along with severe pain.
- **Strangulation:** Blood flow to some part of the intestine can be cut off by incarcerated hernia. This

severity can cause the death of various abdominal or bowel tissues which becomes a life-threatening issue.

### Prevention

Congenital defects cannot be prevented that makes one person susceptible to an inguinal hernia, but some other preventive measures can be taken to reduce strain from bowel movements and to make the body muscles strong and healthy. Some of these effective measures are given below:

- Maintenance of healthy body weight as per Body Mass Index (BMI)
- Consumption of high fiber food like grains, vegetables, and fruits that prevent constipation
- Always bend the knees before lifting heavy objects. One should never give sudden shocks to its backbone or waistline
- Smoking causes chronic cough which ultimately becomes one of the causes of inguinal hernia in men

### Conclusion

An inguinal hernia is something that needs immediate attention by the specialists and surgeons. The two popular techniques used to cure emergency inguinal hernia include Desarda and Darning methods. A comparison of both these methods has shown that these differ from each other on the basis of slight difference ratios, like postoperative pain, wound infection and healing time. However, a significant difference was observed in the mean operation time and recurrence chances. But, just because one method is more popular than the other, doesn't mean surgeons can define it as the best surgery to cure inguinal hernia. Both these methods have their own plus points and some tiny drawbacks.

Patients need to take care of themselves after the surgery or if they are warned by the doctors before the development of a hernia. Choosing a healthy diet and

adding some beneficial physical activities in daily life is best for the human body.

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