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## RESEARCH ARTICLE

# CASE SERIES ON TENSION-FREE INGUINAL HERNIA REPAIRS WITHOUT MESH USING DESARDA TECHNIQUE

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### ABSTRACT

**Introduction:** Inguinal hernia is one of the commonest surgical pathology. India is known to have hard labourers leading to high-risk factor of acquiring hernia by a parietal defect. The challenge is respecting the principal objectives of a hernia repair without expensive prosthetic material. One principal technique has been developed and used with satisfied results: The Desarda technique. **AIMS AND OBJECTIVE-**To fulfill all the principles of hernia repair **Objective:** suppress hernia, reduce post operative pain and recurrence using Desarda repair in a sub urban town of north India. **Methods:** A Case series study in 40 open inguinal hernia repair patients done between March 2021 to March 2022 and followed till August 2022 in JLNMC, Bhagalpur Inclusion criteria- Male patients having Inguinal hernia in the age group of 25-50 years Exclusion criteria-Inguinal hernia with complications, recurrent inguinal hernia, previous contralateral hernia repair, previous abdominal surgery, female, children, obese patients, elderly male, patients with bladder outlet obstruction/chronic constipation/chronic cough/other co-morbidities **PROCEDURE-**The repair is done using a flap of the external oblique aponeurosis sutured to the inguinal ligament below and to the aponeurotic part of the internal oblique muscle above. **Results:** Most of the patients were well and discharged on post operative day1. Complications encountered in post operative period and patient follow-up include urine retention and post operative pain and minimal incidence of hematoma, seroma, wound infection and recurrence. **Conclusion:** Inguinal hernia is public health disease. The socioeconomic context is important here. The tension-free repairs without mesh using Desarda technique avoids the risk of mesh-related complications, low rate of recurrence, postoperative pain, less suture material used, reduced hospital stay and cost inexpensive thus an effective way of open hernia repair.

## INTRODUCTION

- Inguinal hernia is one of the commonest surgical pathology .India is known to have hard labourers leading to high-risk factor of acquiring hernia by a parietal defect. The challenge is respecting the principal objectives of a hernia repair without expensive prosthetic material.
- The recurrence rate of the operation, complications including chronic groin pain, cost and time taken to return to normal activities are the benchmarks against which the success of any hernia surgery is evaluated. The search for a method that accomplishes all the above goals perfectly, preferably without the insertion of any foreign body such as mesh, continues.
- One principal technique has been developed and used with satisfied results: The Desarda technique (an autologous hernioplasty )
- The Desarda repair for inguinal hernias is a new tissue-based technique. Application of the external oblique muscle aponeurosis in the form of un-detached strip has been established as a new concept in tissue-based hernia repair.

- Although the Lichtenstein technique is the gold standard technique using a mesh (a heterologous hernioplasty)

### AIMS AND OBJECTIVES

- To study and fulfill all the principles of hernia repair objective: suppress hernia, reduce post operative pain and recurrence using Desarda repair in a sub urban town of north India.

## METHODS

- A Case series study in 40 open inguinal hernia repair patients done between March 2021 to March 2022 and followed till August 2022 in JLNMC, Bhagalpur
- Inclusion criteria- Male patients having Inguinal hernia in the age group of 25-50 years
- Exclusion criteria-Inguinal hernia with complications, recurrent inguinal hernia, previous contralateral hernia repair, previous abdominal surgery, female, children, obese patients, elderly

male, patients with bladder outlet obstruction/chronic constipation/chronic cough/other co-morbidities

- An intravenous antibiotic was administered intraoperatively in all cases; no further antibiotic doses were given.
- Oral analgesics (Tab. Diclofenac 50 mg twice a day) were given to all the patients for 2 days after which oral or parenteral analgesics were given SOS.
- Patients were encouraged to ambulate after 5-6 h of surgery and were permitted to go home after they were able to go to the bathroom on their own on POD-1. All patients who were doing nonstrenuous office work, were advised to start routine work from the POD-3.

#### Data collection included

- Duration of hospital stay
- Pain- Pain was measured using the visual analog scale (VAS) with 0-30 mm signifying mild pain,
- 31-60 mm moderate pain, 61-90 severe pain and 91-100 excruciating pain.
- Ambulation- "Limited ambulation" indicated movements inside the room, "free movements" were movements outside the room, and "no movements" meant that bed rest was advised.
- Complications recorded during the operations or the hospital stay
- The follow-up schedule was explained to the patient at the time of discharge and was scheduled after 8 days for suture removal, then after 1 month and 6 months. The patients were evaluated in detail and the data recorded at each assessment. The entire data was analyzed at the end of the study.

#### PROCEDURE

- The upper leaf of the EOA is sutured with the inguinal ligament from the pubic tubercle to the abdominal ring using number 1 PDS continuous sutures. The first two sutures were taken through the anterior rectus sheath and the last suture is taken so as to narrow the deep ring sufficiently.
- A splitting incision is made in this sutured medial leaf, partially separating a strip 1.5-2 cm wide. This splitting incision is extended medially up to the pubic symphysis and 1-2 cm beyond the deep ring laterally. The medial insertion and lateral continuation of this strip is kept intact.
- The upper free border of the strip is now sutured to the internal oblique at the level of conjoint tendon with number 1 PDS continuous sutures all along its length. This will result in the strip of the EOA being placed behind the cord to form a new posterior wall of the inguinal canal.
- The spermatic cord is placed in the inguinal canal and the lateral leaf of the EOA is sutured to the newly formed medial leaf of the EOA in front of the cord with number 1 PDS continuous sutures. Excision of the bulky cremasteric muscle (if required) facilitate approximation to the lateral leaf.

#### RESULTS

- Mean operating time was 62.5 min for unilateral and 123 min for bilateral hernias.
- The break-up of the 40 hernias observed was as follows: 10 were direct, 27 were indirect, 3 were bilateral.
- The mean age of the patients was 37.5 years (range: 25-50 years). A total of 37 patients were operated under spinal, 2 under local, and 1 under general anesthesia. There were no intraoperative complications.
- A total of 38 (95%) patients were ambulatory within 6-8 h (mean: 6.42 h).
- Were freely mobile within 18-24 h after surgery (mean: 19.26 h).
- A total of 37 (92.5%) patients returned to work within 6-14 days (mean: 8.62 days).

- A total of 35 (87.5%) patients were allowed to go home on the same day, but they preferred to stay overnight in the hospital and were discharged on the following morning
- The mean hospital stay duration of the patients was 1.11 days.
- Postoperative pain on movement out of bed was described as mild and tolerable by 36 (90%) patients on day 1.
- The quantum of pain reduced significantly and those patients complained of a slight discomfort rather than any pain by day 3. No patient had discomfort for more than 15 days after this repair.

COMPLICATIONS	INCIDENCE
URINE RETENTION IN POST OPERATIVE PERIOD	3 (7.5%)
FEVER	0 (0%)
VOMITING	2 (5%)
ACUTE POSTOPERATIVE PAIN	4 (10%)
CHRONIC POSTOPERATIVE PAIN after 3 months	0 (0%)
SCROTAL EDEMA	2 (5%)
TRANSIENT WOUND EDEMA	2(5%)
SUPERFICIAL WOUND INFECTION	2 (5%)
RECURRENCE FROM 3 TO 6 MONTHS	0 (0%)
OTHER LONG TERM COMPLICATIONS	0 (0%)

#### DISCUSSION

- The strip of EOA in this new technique provides the aponeurotic element to the transversalis fascia of the posterior wall. Contractions of the abdominal muscles pull this strip upward and laterally, creating tension (increased tone) in it and making it a shield to prevent any herniation.
- The strip provides a new insertion to the weak internal oblique and transversus abdominis muscles. This helps to improve the contractile strength of the internal oblique and transversus muscles.
- The additional strength given by the external oblique muscle to the weakened muscles of the muscle arch, to create increased tone in the strip and prevent reherniation, is the essence of this operation. The increased tone created in this strip is graded according to the force of muscle contractions. Stronger intraabdominal blows result in stronger abdominal muscle contractions and stronger muscle contractions result in increased tone in this strip to give graded protection.
- The strip or the suture line lacks tension at rest. Thus, a strong and physiologically dynamic posterior wall is prepared in this operation.

#### CONCLUSION

- Inguinal hernia is public health disease. The socioeconomic context is important here. The tension-free repairs without mesh using Desarda technique avoids the risk of mesh-related complications, low rate of recurrence, postoperative pain, less suture material used, reduced hospital stay and cost inexpensive thus an effective way of open hernia repair.
- The results of this new technique (Desarda repair) using continuous absorbable sutures appear promising. The continuous suturing saves time and just one packet of suture material without mesh saves cost.
- It can routinely be done under local or regional anesthesia and the patients are back to their routine work in 1-2 weeks, thereby reducing sick leave from 4-6 weeks to 1-2 weeks.
- The dream of every surgeon to give recurrence-free, inguinal hernia repair without leaving any foreign body inside the patient may well become a reality in future.

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