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Outcome of Desarda Repair under Spinal Anaesthesia versus Local Anaesthesia in the Management of Primary Inguinal Hernia Repair"

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I. INTRODUCTION

Inguinal hernia is the most commonly seen condition in the outpatient department in most of the world. The estimated life time risk for inguinal hernia is 27% for men and 3% for women.
Surgery is the definitive treatment for the hernia.
The Desarda's technique for inguinal hernia repair is a new tissue-based method. Application of the external oblique muscle aponeurosis in the form of an undetached strip (which makes the posterior wall of the inguinal canal stronger) has been established as a new concept of providing a strong, tension-free and physiologically dynamic posterior inguinal wall in tissue-based hernia repair.

II. AIMS AND OBJECTIVES

1. To compare the outcome of Desarda's repair under spinal anaesthesia versus local anaesthesia.
2. To assess whether Desarda's technique under local anaesthesia is suitable to be used as a day care procedure.
3. To determine the ideal patient profile for Desarda's technique and to determine the feasibility and safety of Desarda's technique.

III. MATERIALS AND METHODS

This study was conducted in the Department of General surgery, Silchar Medical college and hospital with symptomatic Primary Inguinal Hernia over a period of 1 year, i.e. between 1st June 2020 to 31st may 2021 will be included.
1.Case selection: The study population consists of patients presenting with inguinal hernia at the General Surgery outpatient department in Silchar Medical College and hospital, Silchar.
2. Study design: comparative, randomized controlled interventional prospective study.
3. Study period: 1 year i.e., June 2021 to May 2021.
4. Methods: After approval from the ethical committee, a prospective randomized trial was conducted on 50 patients with primary inguinal hernia at Silchar Medical College and hospital from June 2020 to May 2021. They were operated by Dasarda technique and were divided into two group. GROUP A (25 Cases) were operated by Dasarda technique under local anaesthesia and GROUP B (25 Cases) were operated by Desarda technique under spinal anaesthesia. Patients were randomized either to group A (where local anesthesia used) or group B (where spinal anaesthesia) by lottery method.

During surgery – time taken for surgery in both the group, intra operative complication if any were noted.
➢ The follow up of these patients were done with history regarding symptoms of post-operative complications like
a) Pain: which was assessed by Visual Analogue Scale score.
b) Complications like seroma, wound infection.
c) Mobilization
D) Outcome measures.

1 PRIMARY OUTCOME: Desarda technique repair under local anaesthesia versus spinal anaesthesia ,in terms of time taken to return to normal gait wait comfort post-surgery.

SECONDARY OUTCOMES:
1) Time required to return to work
2) Hospital stay
3) Postoperative pain and intra operative pain
4) Postoperative complication
a) Presence of wound infection
b) Presence Of seroma
c) Presence of haematoma
d) postoperative headache
e) foreign body sensation

E) STUDY POPULATION:
1) INCLUSION CRITERIA:
• Primary uncomplicated Inguinal hernia i.e., direct and indirect.
• Male patients aged more than 18 years and less than 80 years
• BMI less than 30kg/sq m.
• American Society of Anaesthesiologists (ASA) scale less than III

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2) EXCLUSION CRITERIA:
• Patients with recurrent, irreducible or strangulated inguinal hernias
• Patients unable to interpret VAS or give consent
• Patients participating in other clinical trials
• Patients with infection in the inguinal region or epididymo-orchitis
• Patients allergic to local anaesthetics
• Patients who do not give consent.

Prior to surgery,
1. A detailed history was elicited and through clinical examination was done.
2. Basic Examination were done.
3. Patients were tested for sensitivity to local anaesthetics and antibiotics
4. Overnight starvation was maintained
5. Pre -operative antibiotics prophylaxis was given at the time of starting the surgery
6. Operative starting done using modified traditional classification
7. These cases were studied from the time of admission till discharge and followed up in the outpatient department.

INVESTIGATIONS:
The investigations are required as routine for diagnosis and to test the sensitivity to the local anesthetic Patients were explained about type of anesthesia & surgery. Also, about advantage & disadvantage of each type of anesthesia. Explained about benefits from early mobilization, early discharge & socio-economic benefits of short stay surgery. Patients were shaved in night before surgery. One gram of inj.cefotaxime I.V given 30 min before surgery. After this local anesthetic given by surgeon himself & spinal anesthesia is given by anesthesiologist. Then DESARDA technique will be performed irrespective of type of anesthesia.
The following parameters are studied in both local anaesthetia & spinal anaesthetia group:
a) Time taken for the procedure: this included time from giving anaesthesia to completion of surgery.
b) Complication during surgery like bradycardia, hypotension and pain during surgery.
c) On the basis of day of discharge.
d) Post operative pain on basis of VAS(Visual analog score)
e) Immediate post operative ambulation.
f) Post operative complications
g) Return to normal activity.
➢ To assess whether Desarda's technique under local anaesthesia is suitable to be used as a day care surgery.
➢ Lastly to determine the feasibility and safety of desarda's technique.
The data was analysed using relevant statistical tests.

IV. RESULTS AND OBSERVATIONS –

A total of 50 patients who presented in the outpatient department of General Surgery, Silchar Medical College and Hospital with a diagnosis of primary inguinal hernia during the study period were enrolled in the study.
- The subjects were thoroughly examined and subjected randomly to Desarda's repair under local anesthesia and Desarda's repair under spinal anesthesia.
- The outcome of each procedure was assessed during follow up. This was summarized into a master chart.
- To describe about the data, descriptive statistics frequency analysis, percentage analysis was used for categorical variables and the mean & S.D. were used for continuous variables.
- To find the significant difference between the bivariate sample in independent groups (Male & female) unpaired sample t -test was used. To find the significance in categorical data Chi-square test was used.
- In both the above statistical tools the probability value .05 is considered as significant level.

● AGE DISTRIBUTION
In the present study age of the patient varied from 21-74 years with the highest prevalence noted in the age group of 31-60 years. The mean age in group A was 46.86 +/- 12.26 and mean age in group B was 45.84 +/- 13.31.
P value – 0.4784 (not significant).

● TYPES OF HERNIA
18 patients (72%) in group A and 15 patients (60%) in group B has right sided inguinal hernia. Left sided hernia was in 7 (28%) patients in group A and 10 (40%) patients in group B.
The chi square statistics shows 0.8021 with p value of 0.375 (not significant).

● TIME TAKEN FOR SURGERY
In the local anesthesia group the time taken for the procedure is in the range of 40-75mins with maximum number of patients 12/25(48%) requiring 51-60 mins of time interval.
In spinal anesthesia Group the time taken for the procedure is in the range of 45-88 mins, with maximum no of patients (11/25) 44% requiring 61-70 mins of time interval.

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Mean time taken for the procedure in LA group is 56.92 mins With SD of 9.532 and Mean time taken for procedure in SA group is 64.3mins with SD Of 10.455
P value is 0.0121 which is significant.

● OBSERVATION DURING SURGERY
Bradycardia noted in 2 out of 25 (8%) patients of L.A. group & 4 out of 25(16%) of S.A. group. Hypotension is seen in 8 out of 25 (32%) patients in Spinal Anaesthesia and as compared to 1 out of 25 individual (4%) in case of local Anaesthesia.
Six individuals in case of local anaesthesia experienced pain during surgery and needed sedation or Analgesia during surgery.
● POST OPERATIVE PAIN ASSESSMENT BASED ON VISUAL ANALOG SCORE (VAS)
In the present study the post-operative pain was studied in both groups of patients at an interval of 6 hr after the surgery (evening time) and 18 hrs (next day morning at 6 am) and then at 30 hr (evening time).
- At 6 hour-VAS Score came out to be significant with p value of 0.0038.

At 18 hour- VAS Score came out to be significant with p value of 0.0027
- At 30 hour- VAS Score came out to be Non significant with p value of 0.2584

● DAY OF DISCHARGE
The present study shows maximum no of patients got discharged in case of local anaesthesia within 24 -48 hours of operation and in case of spinal anaesthesia maximum no of patients got discharged on 48 -72 hours.

● POST OPERATIVE COMPLICATIONS
Wound hematoma was seen in zero percent of patients.
Seroma was seen in 2/25 patients in (8%) of patients in case of local anaesthesia group and 2/25 patients (8%). Of patient in spinal anaesthesia group.
Scrotal oedema was seen in 2/25 patients in (8%) of in case of local anaesthesia group and 3/25 patients (12%). in spinal anaesthesia group
Wound infection seen in 1/25 (4%) of patient in case of local anesthesia group and zero patients in spinal anaesthesia group.
Post-operative headache seen in 1/25 (4%) of patient in case of local anaesthesia group and 4/25 patients (16%) in spinal anaesthesia group.
Recurrence is seen in zero patients.
Foreign body sensation is seen in zero patients.

● MOBILISATION Mobilisation is seen in 60% of the patients in local anaesthesia who were mobilized before 6 h post operatively and maximum no of patients in spinal anasthesia group were mobilized after 6 hrs of surgery.

● TIME TAKEN TO RETURN TO NORMAL ACTIVITY
mean time taken to return to normal activity in local anaesthesia group is 7.08 days and the mean time taken to return to normal activity in spinal anaesthesia group is 10.4 days.
P VALUE: 0.0024 (significant)

● COST EFFECTIVITY
As no expensive mess is used in case of local anasthesia group and the burden of anesthesiologist has been reduced, the cost of Hernia repair by desarda technique in local anaesthesia is much less as compared to Hernia repair by desarda technique in spinal anaesthesia.

CLINICAL PICTURES

FIGURE 1 (A) & 1 (B): RIGHT SIDED INDIRECT INGUINAL HERNIA BEFORE OPERATION

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FIG NO. 2: SKIN AND FASCIA ARE INCISED THROUGH A REGULAR OBLIQUE INCISION TO EXPOSE EXTERNAL OBLIQUE APONEUROSIS

FIG NO 3: OMENTUM AS A CONTENT IN HERNIAL SAC

FIG NO 4: CONTENT OF HERNIAL SAC IS REDUCED AND HERNIAL SAC IS DISSECTED FROM THEFUNDUS TO THE NECK OF THE SAC.

FIG NO 5: MEDIAL LEAF OF EXTERNAL OBLIQUE APONEUROSIS IS SUTURED WITH INGUINAL LIGAMENT FROM PUBIC TUBERCLE TOWARDS DEEP RING USING PDS 2.0 SUTURE.

FIG NO 6: STRIP OF THE EXTERNAL OBLIQUE PLACED BEHIND THE CORD TO FROM NEW POSTERIOR WALL OF INGUINAL CANAL

FIG NO 7: LATERAL AND THE MEDIAL LEAF OF EXTERNAL OBLIQUE IS STITCHED.

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FIG NO 8: POST OP DAY 2

V. DISCUSSION

1. In the present study, the age of the patient in group A was in the range of 21-74 years and in group B was 21-68 years old. The mean age in group A was 46.86 +/- 12.26 and mean age in group B was 45.84 +/- 13.31. All the patients were male.

The study conducted by Dr. Abdu raheem kappoor in 2017 (21) included 50 patients with mean age of 46.2 +/- 16.64 years in local anaesthesia and 42.56 +/- 16.71 years in case of spinal anaesthesia. Similar study was done by Louies & Wendell (22). These results are comparable with present study.

2. In the present study, 14 patients (56%) had indirect inguinal hernia in group A (local anaesthesia) and 16 patients (64%) in group B (spinal anaesthesia). Direct type of inguinal hernia was present in 11 (44%) in group A and 9 (36%) patients in group B. The results of our study were almost similar to the other studies. The P value is 0.5637 which means Desarda technique is equally effective in both indirect and direct inguinal hernia.

3. In the present study, 18 (72%) patients in group A and 15 (60%) patients in group B had right sided inguinal hernia. Left sided inguinal hernia was present in 7 (28%) patients in group A and 10 (40%) patients in group B. The results of present study were comparable to the studies conducted by others.

4. In the present study, the mean operative time was 56.92 mins +/- 9.532 mins in group A (local anaesthesia) and 64.3 +/- 10.455 mins in group B (spinal anaesthesia). The P value was calculated on the basis of unpaired T test, based on mean and standard deviation and it came out to be significant, 0.0121.The results are comparable to the study of Girish H.M

5.Pain is the most common concerned factor to the patient undergoing surgery. The postoperative pain assessment was based on Visual Analog Score.. The results of our study were comparable to other studies conducted by Young DV

6. Our findings were comparable to the study conducted by Dr. Girish GM in terms of mean day of discharge.

7.In the present study we observed that the time taken to return to normal activity in group A (Local) is less than a week in maximum no of patients as compared to group B (Spinal) where the maximum patients return to normal activity in second week of operation.

In the present study, we found that Desarda's technique for repair of Primary hernia repair is safe, simple, effective with no or less recurrence rate, no mortality, less post-operative complication. Inguinal hernia repair under local anaesthesia provide better analgesia, early induction, cost effective, less post-operative pain, requires fewer doses of analgesics as compared to spinal anaesthesia.

VI. CONCLUSION

Recent meta-analyses revealed that Desarda technique is equally good with regards to the postoperative pain and rates of recurrence compared to the Lichtenstein technique.

The learning curve for the Desarda technique appears to be shorter as compared to other technique due to the simplicity of the procedure. It does not require complicated dissection or suturing and is simple, feasible and repeatable procedure using patient's own tissues. There is no tension seen on the suture lines while repairing. It is superior to other techniques specially in terms of reducing post-operative mesh attributed complications as synthetic mesh is not required.

The Desarda technique under Local Anaesthesia showed better results as compared to Desarda technique done under Spinal Anaesthesia in our

study with regards to cost, post-operative pain and complications, early ambulation and early discharge from the hospital.

REFERENCES

[1]. Das S. Examination of a case of hernia. A Manual On Clinical Surgery. Chapter 38.
[2]. Brunicardi F, Andersen D, Billiar T, Dunn D, Hunter J, Matthews J, Pollock R. Schwartz's principles of surgery, 10e. McGraw-hill; 2014.
[3]. Rodríguez P, Herrera PP, Gonzalez OL, Alonso JR, Blanco HS. A randomized trial comparing lichtenstein repair and no mesh desarda repair for inguinal hernia: a study of 1382 patients. East and Central African Journal of Surgery. 2013 Nov 20;18(2):18-25.
[4]. Asmussen T, Jensen FU. A follow-up study on recurrence after inguinal hernia repair. Surgery, gynecology & obstetrics. 1983 Feb 1;156(2):198-200.
[5]. Lichtenstein IL. Hernia repair without disability. Ishiyaku EuroAmerica, Incorporated; 1986.
[6]. Read RC. Francis C. Usher, herniologist of the twentieth century. Hernia. 1999 Sep;3(3):167-71.
[7]. Van Hee R. HISTORY OF INGUINAL HERNIA REPAIR. Jurnalul de Chirurgie. 2011 Jul 1;7(3).
[8]. Stoppa R, Hee RV. Surgical Management of Groin Hernias State of the Art in 1996. Acta Chirurgica Belgica. 1998 Jun 1;98(3):136-8.
[9]. Fitzgibbons Jr RJ. inguinal hernia, chap 36, Schwartz Principles of surgery. London: McGraw Hill. 2005:1353-93.