

## **Comparitive Study of Blunt Dissection Vs Sharp Dissection in Open Elective Uncomplicated Inguinal Hernioplasty in GMKMCH, SALEM**

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### **I. Introduction**

Pain is an unpleasant sensory and emotional experience. Effective management of acute postoperative pain shortens the post operative hospital stay, improves patient satisfaction and gives a better quality of life.

Many studies have been done to study the role of different anesthetic techniques and drugs used to control post operative pain. Also many preoperative, intraoperative and post operative interventions are developed for managing post operative pain. The impact of the surgical technique on the degree of postoperative pain has not been objectively studied. It is general saying that meticulous gentle surgical dissection can make minimal trauma to tissue, which directly affects the degree of postoperative pain.

### **AIM**

This study is to evaluate the effect of sharp dissection (monopolar cautery, scalpel and scissors) and blunt dissection (finger dissection, swab stick) techniques and amount of postoperative analgesics needed to control postoperative pain , duration of hospital stay in patients with inguinal hernia surgery

### **TYPE OF STUDY**

This was a prospective randomized controlled trial study

### **INCLUSION CRITERIA**

Patients with direct or indirect inguinal hernia either unilateral or bilateral with age >15yrs were included.

### **EXCLUSION CRITERIA**

Patients with comorbid conditions except for diabetes and hypertension.

### **II. Materials And Methods**

Department of General Surgery, Govt Mohan Kumaramangalam medical college hospital, Salem. 100 male patients with inguinal hernia were randomly divided into two groups.

Each group had 50 patients with either indirect or direct hernia either right sided or left sided or bilateral. All the patients had their hernia repaired with Lichenstein's tension free hernioplasty.

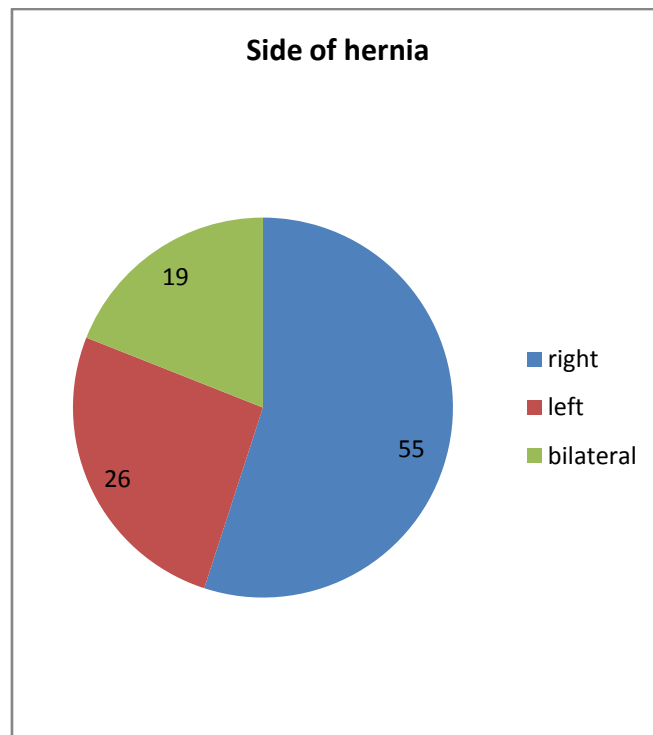
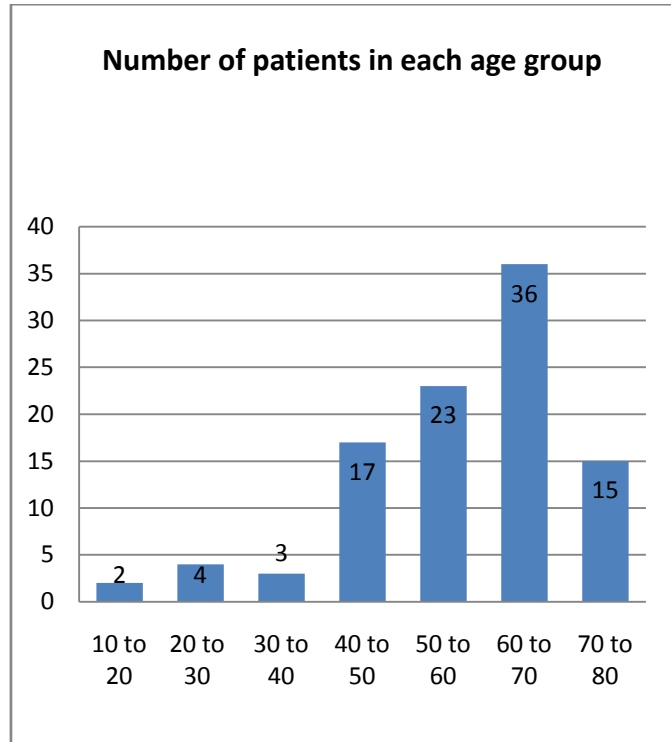
Posterior wall strengthening was done using, using monofilament nonabsorbable no. 2 suture material (Prolene), and reinforcement with nonabsorbable mesh repair (Prolene) using monofilament nonabsorbable no. 2 suture material (Prolene) .

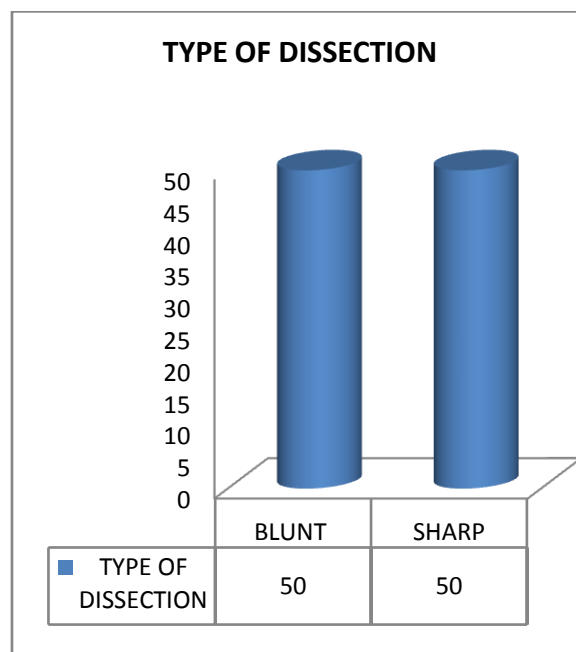
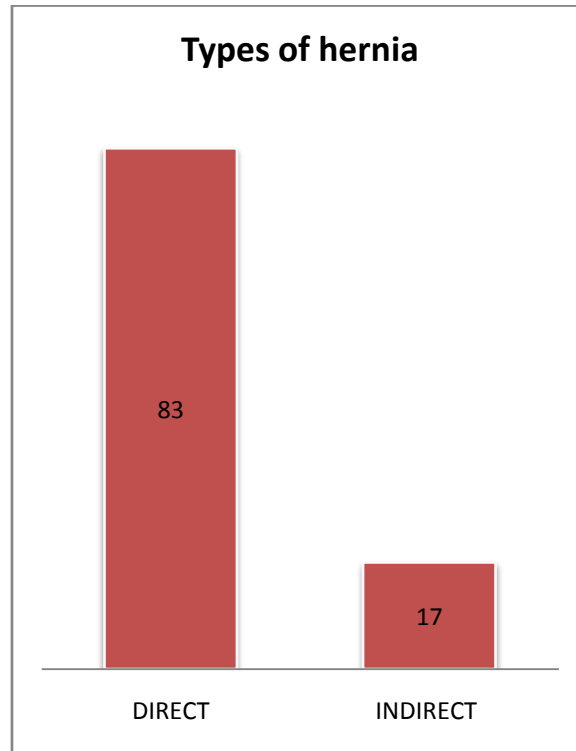
Patients in group A had their hernia dissected using only sharp dissection using scalpel/monopolar cautery and scissors . Patients in group B had their hernia and mainly blunt dissection assisted by sharp dissection where blunt dissection could not do the job.

All the patients had strict hemostasis using coagulation diathermy. Complete medical history and physical examination were done for all patients including assessment of vital signs and airway assessment. Investigations included CBC, PT, PTT, random and fasting blood sugar, serum creatinine and ECG. Patients were ASA I/ II.

All patients had regional anesthesia. Standard monitoring done including ECG, HR, NIBP, TEMP and ETCO2. Patients were operated under spinal anaesthesia bupivacaine heavy 0.5% 1.5 to 2 cc .Just after the procedure Diclofenac sodium 75 mg was given intramuscularly. Post operative pain was controlled by tablet Ibuprofen 200 mg twice daily as long as patient needs pain relief .Post operative pain was analysed using Visual

analogue scale after 12 hours and 48 hours .The number of doses of analgesics each patient from group A and group B requires till he is discharged is recorded .Number of days of hospital stay of each patient from group A and group B re recorded .The statistical analysis was done.

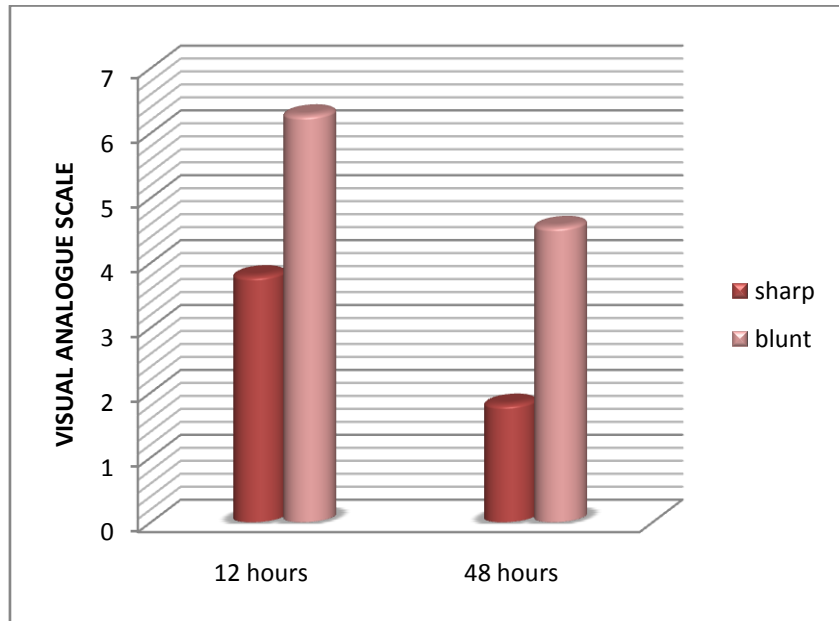




Average pain score was evaluated for each patient belonging to group a and group b and statistical significance was calculated by using p value calculation .p value was less than 0.00001 which was statistically significant .average pain score was less in sharp dissection group compared to blunt dissection group

**Post Operative Pain Using Visual Analogue Scale**

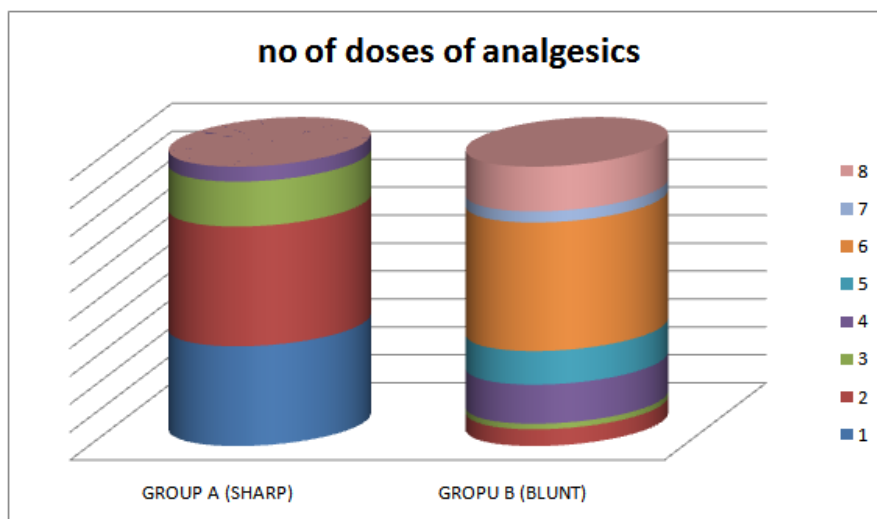
Time for assessment	Group A (sharp)	Group B (blunt)	T value	P value
12 hours	3.8 +- (0.92)	6.28 +-(0.92)	34.75	<0.00001
48 hours	1.82 +- (0.75)	4.56 +- (1.17)	30.04	<0.00001



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NO OF DOSE OF ANALGESICS	SHARP DISSECTION	BLUNT DISSECTION
1	20	0
2	24	1
3	3	7
4	3	6
5	0	23
6	0	2
7	0	8
AVERAGE DOSE OF ANALGESICS	1.78 (0.81)	5.66(1.55)

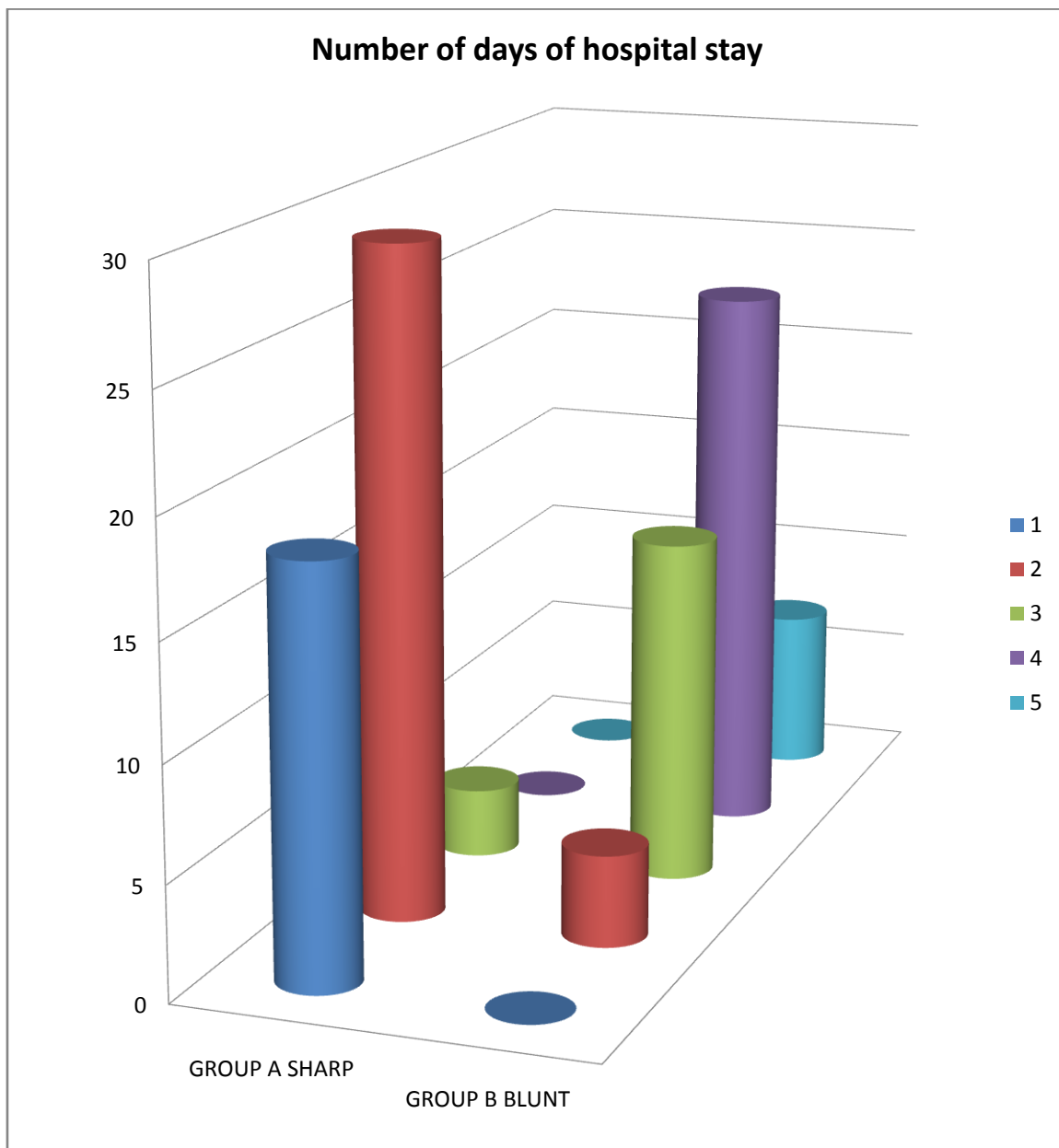
The value of T is 26.310716 .The value of p is <0.00001. The result is significant at p <0.05 which signifies that sharp dissection needs lesser doses of post operative analgesics .average analgesics dose requirement is 1.78 in sharp dissection and 5.66 in blunt dissection.



The number of doses of Ibuprofen each patient from each groups were recorded and mean dose of tablets from each patient was calculated, which signifies that blunt dissection needs increased dose of analgesics

NUMBER OF DAYS OF HOSPITAL STAY	SHARP DISSECTION	BLUNT DISSECTION
1	18	0
2	29	4
3	3	15
4	0	24
5	0	7
AVERAGE STAY IN HOSPITAL	1.7 DAYS ( 0.58)	3.68 DAYS (0.81)

The value of T is 32.70. The value of p is <0.00001. The result is significant at p <0.05. Average stay in hospital was increased in blunt dissection group (3.68 +-0.81) when compared to sharp dissection 1.7+-0.58)



Group B patients treated with blunt dissection had lesser duration of hospital stay when compared to Group A sharp dissection .

### **III. Discussion**

50 patients were included in each study group; The ages of the patients ranged between 10 and 80 yrs. The two groups were nearly matched, with all inguinal hernias needing Lichenstein's hernioplasty and all the patients used non absorbable Prolene mesh, either 10×5 cm .The total dose of Ibuprofen needed for control of postoperative pain on patient request was used as an indicator for the severity of pain in 12 and 48 hours in each group collectively.

The present study was based on a clinical observation that patients who had their hernias done with sharp dissection did not ask for analgesics, as expected. In the same time, the patients who had their dissection by sharp dissection had used much lower amounts of Ibuprofen for pain relief postoperatively than the patients who had their dissection mainly by blunt dissection. The difference between the two groups was highly statistically significant. After exhaustive medical search throughout the internet, unfortunately, very less works were found reporting objectively the effect of surgical dissection on the level of postoperative pain in general surgery.

During sharp scalpel dissection, the nerves in between the abdominal wall flap and the muscles of the abdominal wall are sharply and cleanly cut, whereas while performing blunt dissection, most of the nerves are avulsed during surgery, especially the small nerve endings away from the main perforators, which should be identified and coagulated before cutting. Sharp nerve cut results in tidy axonal transaction. In the contrary, blunt dissection results in avulsion of the nerve axons; this may lead to more edema and bruises of the nerve sheaths, causing more pain sensation and more neuroma formation later on. Also, pain mediators are produced in lesser quantities with sharp dissection than with blunt dissection; this may reduce pain sensation even with operations involving large extent of dissection as in ventral hernias. Also, blunt dissection usually results in more tissue edema, more interstitial hematomas, and more inflammatory response; all these factors may lead to more pain sensation and increase the amount of pain killers needed for analgesia postoperatively.

### **IV. Conclusion**

This study concludes that sharp dissection is better than blunt dissection in the repair of inguinal hernias, in terms of postoperative pain severity reflected by the amount of postoperative pain killers needed for postoperative analgesia and shortened duration of hospital stay .

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