POSTOPERATIVE PAIN IN 5mm vs 10 mm EPIGASTRIC PORT FOR LAP CHOLECYSTECTOMY: A RANDOMIZED CONTROLLED TRIAL

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BACKGROUND

- Laparoscopic cholecystectomy (LC) is the standard treatment of symptomatic gallstone disease. It is feasible as day care surgery.
- In 17–41% of the patients, pain is the main reason for staying overnight in the hospital after surgery, and the primary reason for prolonged convalescence after laparoscopic cholecystectomy (1).
- This pain is influenced by factors like age, sex, CO_2 insufflation pressure, preoperative pain threshold, or mechanical trauma (1).
- One way to further reduce this post-operative pain and thus improve the outcome of the patient is by reducing the port number or port size in conventional laparoscopic cholecystectomy.
- Haribhakti et al defined mini-laparoscopy as the technique in which “total port size is less than or equal to 25 mm” (2).
- We compared postoperative pain in patients who underwent LC using either 5mm and 10mm epigastric port, while maintaining the sum of length of all ports at 25 mm.

OBJECTIVES

AIM:

- To compare postoperative pain in mini-laparoscopic cholecystectomy performed using 5mm epigastric port and 10 mm epigastric port.

OBJECTIVE:

- To compare the post-operative pain between groups using VAS (0-10) scores at 6 and 24 hours.

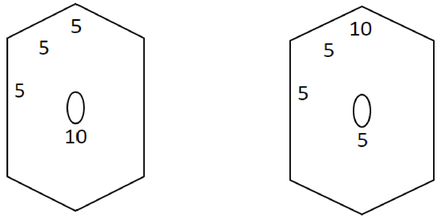
METHODS

Type of study:

A 2 parallel arm randomized controlled trial with 72 patients equally divided in two groups A and B. Sample size was calculated based on a trial by Ardhnari et al (3).

Randomization sequence was generated using the website www.randomization.com. The sequence thus generated was sealed in serially numbered opaque envelopes.

METHODS



Participants:

All consenting adult patients with symptomatic gallstones planned for laparoscopic cholecystectomy.

Procedure:

All patients admitted with symptomatic gall stone disease were randomized into two groups after obtaining informed consent. Preoperative pain severity using VAS scale was noted. Group A patients underwent laparoscopic cholecystectomy using a 5mm epigastric port and Group B patients were operated using a 10mm epigastric port. Post operatively patients were assessed for pain severity using the VAS scale at 6 and 24 hours from the time of the last stitch.

Technique:

Group A- The cystic duct and artery were ligated using a 5 mm clip applicator or sutures. The gallbladder was extracted through the 10mm umbilical port under direct vision of the 5mm laparoscope which was introduced through the 5mm epigastric port.

Group B- The cystic duct and artery were ligated by clips applied using a 10 mm reusable clip applicator. The gallbladder was extracted through the 10mm epigastric port.

RESULTS

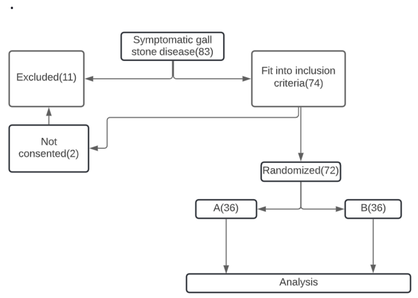


Figure 1: CONSORT FLOW DIAGRAM

	A (n=36)	B (n=36)
Median Age(IQR)	50(22.5)	49(21)
Males	11	15
Females	25	21
Median BMI (IQR)	24.95(9.25)	24.56(5.77)
Median Preoperative VAS(IQR)	2(6)	4(8)

Table 1: Baseline characteristics

Two-sample Kolmogorov-Smirnov test revealed that data was not normally distributed. Table 2 compares postoperative pain and operating time.

	A	B	p
Median VAS at 6 hours (IQR)	4(3,7.5)	6(5,8.5)	0.035*
Median VAS at 24 hours (IQR)	2.5(1,4)	3(1.5,5)	0.269
Median operating time(IQR)	85.5(46)	81(40)	0.852

* Independent samples Mann-Whitney U test

Table 2: Postoperative pain and operating time

RESULTS

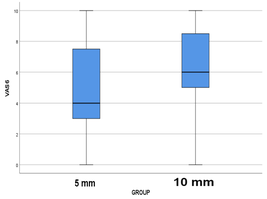


Fig. 2: VAS at 6h

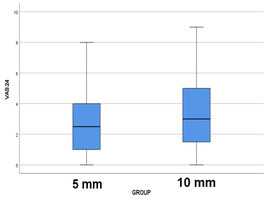


Fig. 3: VAS at 24 h

CONCLUSIONS

A 5 mm epigastric port leads to lesser pain at 6 hours postoperatively compared to a 10 mm epigastric port. This does not increase the operating time significantly. The 5 mm epigastric port does not need to be closed, unlike the 10 mm epigastric port. If a 5 mm telescope is available, this technique can be considered to decrease postoperative pain.

REFERENCES

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3. Ardhanari R, Narasimhan M, Sowdepalli A. The Size of Epigastric Trocar Influences Pain in Laparoscopic Cholecystectomy: A Randomized Trial Between 5 mm and 10 mm Epigastric Trocars and Influence on Post-operative Pain. Gastroenterology. 2016 Apr 1;150(4): 1257-8