

A Comparative Study of Open Versus Laparoscopic Appendisectomy on Postoperative Pain and Need for Analgesia



Medical Science

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ABSTRACT

The introduction of laparoscopic surgery has dramatically changed the field of surgery. Several retrospective studies, several randomized trials and meta-analyses comparing laparoscopic with open appendectomy have provided conflicting results.

Factors seen common with the 2 groups are that laparoscopic group takes longer to perform, is more costly, there is reduced duration of hospital stay, patient resumes oral diet quicker and there is less chances of post operative wound infection and intraabdominal infection. Constant factor that varied was the postoperative pain and need for analgesia. Hence, we conduct this study to compare postoperative pain and need for analgesia in open versus laproscopic appendisectomy.

INTRODUCTION

The introduction of laparoscopic surgery has dramatically changed the field of surgery. With improvements in the equipment and increasing clinical experience it is now possible to perform almost any kind of procedure under laparoscopic visualization.

Although more than a century has elapsed since McBurney first performed open appendectomy⁽¹⁾, this procedure remains the treatment of choice for acute appendicitis for most surgeons.

In 1983, Semm performed the first laparoscopic appendectomy⁽²⁾. Ever since then, the efficiency and superiority of laparoscopic approach compared to the open technique has been the subject of much debate.

Laparoscopic appendicectomy combines the advantage of diagnosis and treatment in one procedure with least morbidity⁽³⁾. Patient is likely to have less postoperative pain and to be discharged from hospital and return to activities of daily living sooner than those who have undergone an open appendicectomy⁽⁴⁾.

Other advantages include decrease wound infection, better cosmesis, ability to explore the entire peritoneal cavity for diagnosis of other conditions and effective peritoneal toileting without the need for extending the incision⁽⁴⁾.

In the present study, we aim to compare the postoperative pain and analgesic requirement experienced by patients undergoing laparoscopic versus open appendisectomy

AIM AND OBJECTIVES

The aims and objectives of this study is to compare laparoscopic appendisectomy versus open appendisectomy with respect to post-operative pain and analgesic requirement

MATERIALS AND METHODS

Data was collected prospectively on patients with acute appendicitis who underwent open or laparoscopic appendectomy in the surgery department of the Father Muller medical college over a period of 5 months.

The diagnosis of appendicitis was made in the emergency department and was based on the presence of right lower quadrant pain, nausea or vomiting, and abdominal guarding on physical examination. Abdominal ultrasound was done for all patients. The decision about the type of the operation was made according to the preference and experience of the surgical team on duty.

Prior to the surgery, all the patients received a standard regimen of intravenous antibiotics (Cefuroxime with Sulbactam + Metronidazole).

Open appendectomy was typically performed through a 3 cm McBurney muscle splitting incision in the right lower quadrant. Following appendectomy the stump was double ligated with an absorbable suture. Exclusion criteria included cases converted from laparoscopic to open appendicectomy, patients with appendicular mass on table and contraindications for laparoscopic appendicectomy like ASA IV and physiologically compromised.

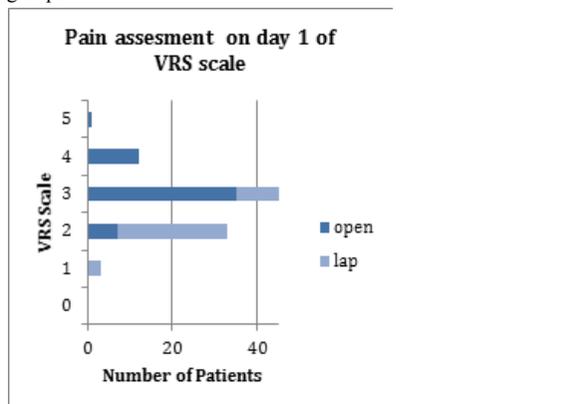
Laparoscopic technique performed under general anesthesia using a standardized approach involving the Hasson's technique for the umbilical trocar insertion and a 3-port technique. The appendix was divided after double ligation of the base. Appendix extraction was performed using trocar sleeve to protect the wound from contamination during removal.

The following two parameters were observed during the follow up in comparison between the two procedures, post operative pain using a verbal response pain scale from 0 to 5, 0 being no pain and 5 being the worst possible pain and duration of analgesic use in number of days.

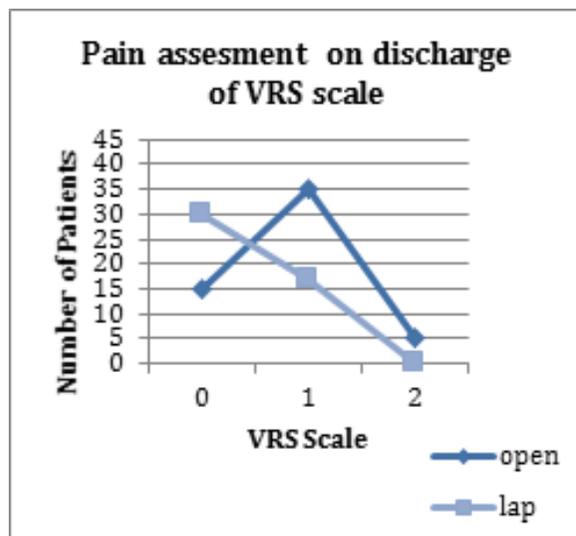
The discharge criteria were met once the patients were afebrile, with audible bowel sounds and were able to tolerate a liquid diet.

RESULTS

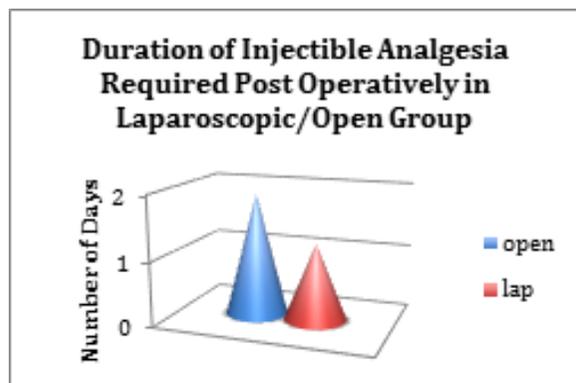
On the day of surgery most of the patients who underwent laparoscopic appendicectomy experienced grade II to III pain as compared to open group who experienced grade III to IV pain (p is significant) and 1 patient experienced grade V pain in open group.



Prior to discharge the pain experienced by both groups had decreased, now most of laparoscopic group experienced grade 0 on VRS Scale as compared to open group who experienced grade 1 on the same scale (p is significant).



In all cases pain relief was achieved by injectable NSAIDS administered by IM route. The duration of Post operative analgesia required in the Laparoscopic Group was significantly less than the Open Group (p is significant). The average duration is represented below.



Conclusion

Acute appendicitis is the most common intra-abdominal condition requiring emergency surgery(10). Although more than 20 years have elapsed since the introduction of laparoscopic appendectomy, there is no consensus on its advantages and disadvantages compared to the conventional technique.

Recent studies have shown significant advantages of laparoscopic appendectomy with respect to the length of hospital stay, postoperative pain and infectious complications(5,6,7,8,9). Other authors who observed no significant difference in the outcome between the two procedures, and moreover noted higher costs with laparoscopic appendectomy have challenged these findings.

In our study we found that there was a significant difference in the postoperative pain scores between open and laparoscopic appendectomy at 24 hours (3.13 vs. 2.47 respectively; (P <0.000) at discharge (0.49 vs. 0.76 respectively; P < 0.009), this difference could have been because of a longer incision, and stretch of the muscles. The duration of postoperative analgesia required was more in the open group than the laparoscopy group (2.5±1.04 versus 1.3±0.75 days respectively; p<0.000).

We conclude that the laparoscopic method of appendectomy is better than the open method for acute or recurrent appendicitis, with less postoperative pain and reduced duration of analgesics.

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