

# Cost benefit analysis in closure versus non-closure of peritoneum in open appendicectomy

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## Abstract

**Aims and Objectives:** To assess the cost benefit ratio in non-closure of the peritoneum at open appendectomy as compared to suture peritonization. **Materials and Methods:** The study population comprised of 100 in-patients who underwent open appendicectomy in Father Muller Medical College, Mangalore selected by purposive sampling method. To treat the patients with minimal pain and in the cheapest way. **Results:** Mean for VAS for closure was 8, 5 and 3 on day 0, 1 and 2 respectively. And that for non-closure was 5,3 and 2 on day 0, 1 and 2 respectively. **Conclusion:** Non-closure of peritoneum was better than closure of peritoneum in open appendicectomy because of short duration of the procedure, less postoperative pain, less analgesic requirement and less number of days of hospital stay. Also the cost was less in non-closure overall.

**Keywords:** appendicectomy, cost benefit.

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## INTRODUCTION

It is conventional to suture all the layers that are cut during surgery. This is indeed what every surgeon is taught and every surgeon is practicing. The fear of increased adhesions following the non-closure of peritoneum has been disapproved by many studies. Much of the experience on non-closure of peritoneum in the literature comes from obstetric and gynaecological surgeries. The effect of post-operative pain remains a controversial issue. Our hypothesis is that – peritoneum has rich nerve supply and poor blood supply. Closure of peritoneum results in more pain because of ischemia produced by suturing. To test our hypothesis we will take up this randomized controlled study to know the effect of non-closure of peritoneum at appendicectomy on post-operative pain and analgesic requirement.

## AIMS OF THE STUDY

To assess the cost benefit ratio in non-closure of the peritoneum at open appendectomy as compared to suture peritonization.

## MATERIAL AND METHODS

The study population comprised of 100 in-patients who underwent open appendicectomy in Father Muller Medical College, Mangalore selected by purposive sampling method. Prior to selection, they underwent routine history taking, physical examination and investigations. Informed written consent and Ethical committee approval was taken prior to the study. The patients enrolled for the study underwent open appendicectomy under spinal anaesthesia. McBurneys incision was employed in all the cases. Per-operative findings on opening the abdomen were noted. Patients with complications, additional pathology and who underwent additional procedure was excluded. After removing the appendix the peritoneum was left open. Rest of the layers was closed. The time when surgery ended was taken as “0” hour and the day of surgery was taken as “0” day. Post operatively pain was recorded using visual analogue scale (VAS), on day 0, day 1 and day 2. Analgesic requirement was calculated based on severity of pain calculated using VAS. The analgesic requirement was recorded. Patients were watched for wound infection.

### Selection Criteria

One hundred patients undergoing emergency or elective open appendicectomy with proven ultrasonographic findings was recruited for the study.

### Inclusion Criteria

Patients undergoing emergency or elective open appendicectomy with proven ultrasonographic findings were recruited for the study.

**Exclusion Criteria**

Ageless than 12 years, Neurotic/ psychiatric patients, complicated appendicitis, Patients who was operated under anaesthesia other than spinal anaesthesia were excluded.

**Data Analysis**

Collected data will be analysed by frequency, percentage, mean, standard deviation and by chi-square test.

**Stistical Analysis**

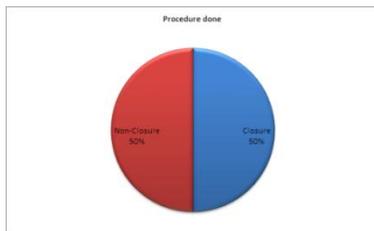
Collected data was analysed for frequency of different aortic arch branching patterns.

**RESULTS**

There were 100 patients in our study of which 50 had peritoneal closure and other 50 had non-peritoneal closure.

**Table 1:Operative Procedure**

Procedure	No. of Patients
Closure	50
Non-closure	50

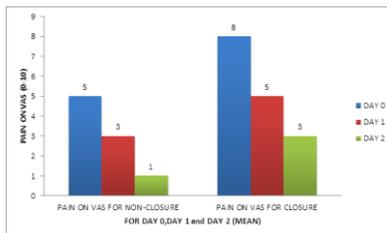


**Figure 1: Type of Surgery**

There were 100 patients in our study,50 underwent peritoneal closure surgery and 50 underwent peritoneal non-closure.

**Table 2: Pain on vas for peritoneal non-closure and closure patients (mean)**

	DAY 0	DAY 1	DAY 2
Pain On Vas For Non-ClosurePts	5	3	2
Pain On Vas For Closure Pts	8	5	3



**Figure 2: Pain on vas for peritoneal non-closure and closure patients**

**DISCUSSION**

The main aim of the study was to treat the patients with minimal pain and in the cheapest way. Mean for VAS for closure was 8, 5 and 3 on day 0, 1 and 2 respectively. And that for non-closure was 5,3 and 2 on day 0, 1 and 2 respectively. As shown in the table duration of procedure in non-closure was less than in closure. Also length of hospital stay and analgesic requirement was less in non-closure patients. Pairwise comparisons by Wilcoxon signed rank test for closure and non-closure showed highly significant p values for duration of hospital stay, analgesic requirement and pain in postoperative period.

**CONCLUSION**

In the final analysis, non-closure of peritoneum was found to be superior to closure during open appendectomy because of short duration of the procedure, less postoperative pain, less analgesic requirement and less number of days of hospital stay. Also the cost was less in non-closure overall. Hence as a conclusion of this study, non-closure of peritoneum was better than closure of peritoneum in open appendectomy.

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