



PERITONEAL CLOSURE VERSUS NON-CLOSURE IN OPEN APPENDICECTOMIES

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ABSTRACT Acute Appendicitis is a common surgical emergency and Open Appendicectomy is widely performed. This study aims to analyze the difference of outcome in peritoneal closure versus Non closure in open appendicectomy. Adult patients (18-65 years) admitted and operated for Acute appendicitis were studied prospectively from July 2019 to July 2020 at King George Hospital, Visakhapatnam. The intra operative time, post-operative pain, wound infection and duration of hospital stay were analyzed. Between July 2019 and July 2020 there were 86 patients with diagnosis of Acute appendicitis to the emergency casualty of KGH, Visakhapatnam and underwent Open appendicectomy. They were divided into two groups randomly, Group A: Open appendicectomy with peritoneal closure (39) and Group B: Open appendicectomy with non-closure of peritoneum (47). There was found to be a reduction in the duration of surgery, less post operative pain and shorter duration of hospital stay in patients who underwent non-closure of peritoneum compared to patients who underwent peritoneal closure. There was no difference in incidence of post-operative wound infection when compared to closure of peritoneum. Non closure of peritoneum is associated with shorter operative time, reduced requirement of post-operative analgesia and shorter duration of hospital stay and hence can be safely recommended.

KEYWORDS : Acute appendicitis, peritoneum closure, wound infection

INTRODUCTION

Acute appendicitis is the most common surgical emergency. Appendectomy, the most prominent method in the treatment of appendicitis, can be performed with an open method or laparoscopically. It is conventional to suture all the layers that are cut during surgery, even though peritoneum has the ability to heal simultaneously throughout the wound by multiple sites of repair leading to spontaneous reperitonealisation within 48-72 hours.

MATERIALS AND METHODS:

Study Population: Patients aged between 18 and 65 years.

Place of Study: Visakhapatnam

Study Period: between July 2019 and July 2020

The diagnosis was based on routine history, clinical examination and confirmed with abdominal ultrasound preoperatively.

Patients were divided into two groups using randomization by lottery method.

In group A, closure of peritoneum was done following appendectomy while in group B peritoneum was left open.

In both the groups, all other abdominal layers were closed.

Exclusion Criteria

- Presence of intra-abdominal abscess in preoperative ultrasound.
- Presence of local or diffuse purulent fluid in the abdomen during the surgery.
- Pregnancy
- History of malignancy, chronic liver disease, chronic renal failure, diabetes, known psychiatric, or mental disorder; and refusal of the patient to participate in the study.

STUDY PARAMETERS

Operative Time (minutes)

The time required for surgery was noted from skin incision to skin closure.

Post-operative pain

Post operatively pain severity was assessed on VAS pain distress scale. For all patients, IM diclofenac sodium (75mg) was given and if greater than severe pain (>7), additional IV tramadol (100 mg) was given. Pain scale and analgesic requirements were measured at day 0 (operation

day) and day 1 (1st postoperative day).

Post-operative Complications

Patients were assessed for early complications in the post-operative period like wound infection. Check dressing was done on day 3 after surgery or if there was any soakage, for detection of any wound infection. (Wound infection was defined as redness and drainage from the wound requiring opening of the skin incision and packing.)

Duration Of Hospital Stay

Duration of stay was recorded from day of surgery to the day of discharge. Patients were discharged when they tolerated a regular diet and were afebrile for 24 hrs.

RESULTS:

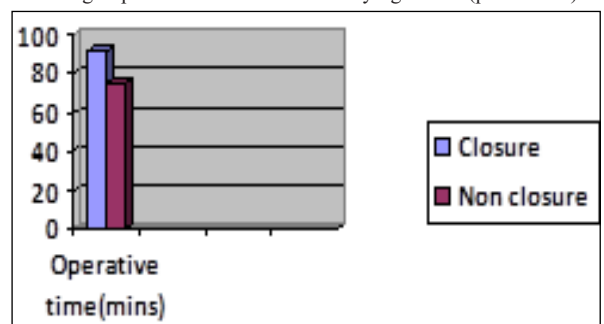
86 patients with diagnosis of Acute appendicitis underwent open appendicectomy between July 2019 and July 2020 and were divided into groups and the results were compared.

	Group A	Group B
Age (years)	31.8	30.1
Gender		
Male	21	27
Female	18	20

Maximum numbers of patients were found in age group of 21-30 years in both the groups. Male to female ratio was found to be 1.18:1 in Group A and 1.35:1 in Group B.

1. Operative time

Mean operative time for Group A was 91.5 minutes and for Group B was 75.1 minutes. The difference between operative time between both the groups was found to be statistically significant ($p < 0.00001$).



2. Post Operative Pain

Total 6 patients (15.38%) in Group A required high analgesia as compared to 5 patients (10.63%) in Group B. This difference was statistically found to be non-significant ($p < 0.05$)

Pain (VAS)	POD 0	POD 1
Group A	5	3
Group B	7	5

3. Post Operative Complication

In the present study 3 patients (7.69%) in Group A and 3 patients (6.3%) in Group B had wound infection on POD-3. Statistical Analysis was found to be non-significant.

	Group A	Group B
SSI	7.6	6.3

4. Duration Of Stay In Hospital

In group A mean duration of hospital stay was 5.33 days and in group B mean duration of hospital stay was 4.92 days. It was found to be statistically significant ($p\text{-value} < 0.05$).

CONCLUSIONS

It is concluded from the above study that, non-closure of peritoneum at open appendectomy is associated with lesser operating time, and shorter duration of hospital stay. After injury or trauma, mesothelial cells activation led to accelerated healing from multiple sites at the edges leading to complete healing in five to six days duration. Unlike other tissues, peritoneum does not require apposition of tissue edges for closure after surgery. Suture material used for peritoneal closure during surgery may act as a foreign body leading to profound inflammatory response and dense adhesions formation in post-operative period. Non-closure of peritoneum at lower abdominal surgery has been found to be associated with a number of advantages including shorter operative time, early recovery, shorter hospital stays, less adhesions formation, decreased postoperative pain leading to decreased analgesics requirements in postoperative period. Hence, non-closure of peritoneum in appendicectomies can be safely recommended.

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