

A PROSPECTIVE STUDY TO EVALUATE THE POST-SURGICAL OUTCOME OF EMERGENCY SURGERY AND CONSERVATIVE MANAGEMENT WITH INTERVAL APPENDECTOMY

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Abstract

Background: Pain in abdomen is a common complain, and the most common abdominal pain that requires surgery is appendix. To evaluate the post-surgical outcome of emergency surgery and conservative management with interval appendectomy. **Materials and Methods:** A total of 124 cases of complicated appendicitis were enrolled in this prospective observational study. The subjects were equally divided into two groups. Group 1 went immediate surgery and Group 2 was conservatively managed with planned interval operations. **Result:** The maximum subjects were in the age range of 21-30 years. Appendicitis affected both the genders with the incidence being higher in males. The symptoms of acute appendix lasted on an average for 3-4 days. The periumbeal region was the most common site for pain. In majority of cases it was shifting type of pain. In the immediate surgery group, 02 subjects developed faecal fistula. In contrast, 06 subjects in the planned surgery group developed adhesion and intestinal obstruction. The duration of hospital stay was more for conservatively treated patients. **Conclusion:** Whether to perform surgery or to manage conservatively entirely depends on the severity of patients clinical features as decided by the surgeon.

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INTRODUCTION

Pain in abdomen often warrants an emergency.^[1] The most frequent type of abdominal pain that requires surgery is appendicitis. Appendicitis affects both the gender but is more prevalent in males compared to females. The highest incidence of appendicitis is observed in the second and the third decades of life.^[2,3,4] Globally the incidence of perforated appendicitis is 2 cases per 10,000 populations. Perforated appendicitis is seen more commonly in children and in elderly, in the age below 5 years and above 65 years respectively.

In majority of cases, the ruptured is enclosed and clinically exhibits the symptoms of localized peritonitis.^[1,3,4] On physical examination this may present as palpable mass in a few cases. This may also simulate a phlegmon. The condition may require an emergency surgery.^[1,5]

The widespread inflammation in the abdominal cavity, intestinal adhesions, postoperative sepsis, fluid accumulation, etc are the major causes for significantly delayed wound healing, if an emergency surgery is done.^[4,5]

In view of the above, the suspected cases of appendicitis with an abscess are preferably treated conservatively by ultrasound guide abscess drainage and antibiotic coverage, followed by surgery, once the inflammation subsides.^[3,6,7] However, this newer treatment regimen has neither being standardized nor being fully accepted clinically for all the cases.

Therefore, this study was conducted to compare the post-surgical outcomes of conservative management and emergency surgery in cases of inflamed appendices.

MATERIALS AND METHODS

Study Setting: This was a prospective, comparative, observational, unicentric, longitudinal study. The study was conducted in the department of general surgery, at Lord Buddha Koshi Medical College and Hospital, Saharsa. The study was conducted over a period of 15 months from March 2019 to May 2020. All study participants were counseled. An informed and written consent was obtained from the participating subjects before the commencement of the study.

Inclusion Criteria: All age groups and both sexes were included.

Exclusion Criteria: The patients whose initial diagnosis was changed from, appendicular lump was excluded from the study.

Study Sample: The study subjects comprised of the surgical OPD and Emergency patients, who reported to the surgery department of our institute. A total of 124 subjects meeting the inclusion and exclusion criteria were included in the study. The subjects were randomly divided into two groups each containing 64 subjects.

Procedure: A through clinical examination was done for all subjects. The pre-operative investigation included- plane X-ray abdomen, ultrasonography of whole abdomen, Complete blood count including ESR, urine analysis, creatinine, urea, and electrolyte, and other investigations as per need of the patients. Group 1- early surgical exploration was done. Group 2 - conservative approach followed by interval appendectomy was done.

Statistical Analysis: The data was tabulated in a Microsoft excel sheet, and was subjected to statistical analysis using SPSS software programs.

RESULTS

The observation of present study is shown in [Tables 1 to 7]. A total of 124 subjects were included in the study, of which maximum subjects were in the age range of 21-30 years, followed by 31-40 years and 11-20 years and were least in 41-60 years. [Table 1]

Appendicitis affected both the genders with the incidence being higher in males. [Table 2]

The symptoms of acute appendix lasted on an average for 3-4 days. In some patients the duration of symptoms lasted for as low as 1-2 days while in others this lasted for more than a week. [Table 3]

The clinical presentation of the disease revealed that periumbeical region was the most common site for the onset of abdominal pain. In majority of cases it was shifting type of pain. Gastro Intestinal (GI) upset and febrile illness was also present in majority of cases. [Table 4]

The treatment modality adopted in this study for different cases is shown in [Table 5]. The suppurative (n=50) and gangrenous (n=10) appendix required emergency appendectomy while 08 of perforation and abscess were managed with ultrasound guided drainage and planned appendectomy on a later date. Post-operative wound sepsis was found to be more in group 1 compared to group 2, but the difference was not significant. 04 subjects in group 2 developed residual abscess, while it was nil in group 1. In the immediate surgery group, 02 subjects developed developed faecal fistula, and was treated conservatively. In contrast, 06 subjects in the planned surgery group developed adhesion and intestinal obstruction. Chest infection remained a vital issue, and the long stay patients of group 2 experienced more chest infection. Re admission was also required in a few cases. [Table 6]

In the emergency surgery group, 52 subjects required less than 3 days of hospital stay, 10 required almost a week, while none required more than a week hospital stay. On the other hand in the planned surgery group, none required less than 3 days of hospital stay, 16 required almost a week, while 46 required more than a week hospital stay.

Table 1: Distribution of subjects according to age.

Age Range	Number of subjects (n=124)
11 – 20	22
21- 30	60
31 – 40	32
41 – 60	10
>60	0

Table 2: Distribution according to gender

Gender	Number of subjects (n=124)
Male	80
Female	44
Total	124

Table 3: Presentation of Symptoms.

No. of days	Number of subjects (n=124)
≤2	18
3 – 4	56
5 – 6	22
>6	28

Table 4: Presentation of the disease

Symptoms	No.	
Abdominal Pain (Site of Onset)	Periumbilical	68
	Generalized abdominal pain	16
	Epigastric	6

	Right lower abdomen	34
Type of Pain	Shifted	114
	Not shifted	10
GI Upset (nausea/ vomiting, anorexia, loose stool and constipation)	Present	116
	Absent	08
Fever	Raised	72
	Normal	52

Table 5: Operative Findings & Procedure (n=68)

Operative finding	Procedure	No.
Suppurative appendix	appendectomy	50
Gangrenous appendix	Appendectomy	10
Perforated appendix and appendicular abscess	Drainage of abscess and appendectomy	08
Normal appendix	Nil	Nil

Table 6: Post-Operative Complications

Complications	Group I (n=62)	Group II (n=62)
Haematoma	2	0
Infection	6	4
Abscess	0	4
Adhesion and obstruction	0	6
Fistula	2	0
Chest infection	2	10
Readmission	0	16

Table 7: Hospital Stay

Hospital Stay	Group I	Group II	Total
Less than 3 days	52	0	52
4 – 6 days	10	16	26
More than a week	0	46	46
Total	62	62	124

DISCUSSION

Acute abdomen is a surgical emergency, for which inflamed appendix is a major cause. A delayed treatment for acute appendix may form appendicular lump. This lump is a localized inflammatory mass and is a protective mechanism of body to restrain the spread of infection.

The present study compared the post-surgical outcomes of conservative management and emergency surgery in cases of inflamed appendices with acute abdomen. A total of 124 subjects were evaluated. There were 62 subjects in the emergency surgery group and the conservative management group had 62 patients.

In the present study, appendicular lump formation was seen in 8 cases and this was coincidence with the previous study reports of Jordan et al.^[8]

In our study the participating subjects were in the age range of 11-60 years. This suggests that persons of all age groups are prone to appendicular inflammation. It was also found that the maximum subjects (n=60) were in the age group 21-30 years and minimum subjects (n=10) were in the 41-60 years age range. This suggests a high susceptibility of acute appendix in the early age. Males were almost double affected compared to females. These findings were similar to the study results of Ali and Rafique.^[9]

Our study result showed that, shifting of pain was evident in 114 cases and 116 cases had gastric upset this was comparable to the previous studies.^[9] Fever was found in 72 of the subjects. 60 patients presented with suppuration, perforation or gangrene. This study

result was similar to the observation of William and Whitelaw.^[10]

In the current study wound infection was found almost 1.5:1 in group 1 and group 2 respectively. A few cases of haematoma and abscess were seen in group 1 and group 2 respectively. The amount of chest infection was much higher in group 2 compared to group 1, probably due to prolonged hospital stay. These findings were similar to previous study results.^[10]

CONCLUSION

Conservative treatment is a safe and effective treatment modality for acute abdomen. Whether to perform surgery or to manage conservatively entirely depends on the severity of patients clinical features as decided by the surgeon.

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