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Original Article

Comparative Study of Non-operative versus Operative Management of Appendicular Lump – A Retrospective Study

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Abstract

Background: Acute appendicitis is one of the most common acute surgical conditions of the abdomen and appendicular lump is formed if treatment is delayed. There is no clear standardized approach to complicated appendicitis associated with abscess or phlegmon. Hence, different therapy would be useful and cost effective.

Materials and Methods: Out of 60 patients classified into Group I – Emergency surgery group 19 (5/61) and Group II conservative treatment – 41. (a) Surgery after certain time (II A). (b) Ambulatory follow-up (II B). (c) Underwent appendectomy (II C).

Results: Clinical manifestations of Group-I and Group-II were compared. Duration of symptoms was 6.68 in Group I and 9.58 in Group-II. Body temperate in Group-I 38.1°C, Group-II 36.76°C Heart rate (pulse/min) 87.48 in Group-I, 85.73 in Group-II, WBC count – 13.252 in Group-I, 132010 in Group-II size of abscess (cm) 4.40 in Group-I, 4.98 in Group-II. In surgical appendectomy 14 patients were in Group-I, 26 patients were in Group-II, ileostomy 04 were in Group-I ,3 were in Group-II, in right hemicolectomy only 2 in Group-II, operation time 106.68 (min) in Group-I, 88.19 in Group-II post-operative complication 2 in Group-I, 5 in Group-II, post-operative hospital stay 9.48 in Group-II, 9.3 in Group-I.

Conclusion: Non-operative management of complicated appendicitis has more failure rates, increased hospital expenses, and perhaps increased morbidity when compared to immediate surgical management of complicated appendicitis remains gold standard and should be used in most patients.

Key words: Appendicitis, Conservative method, Karnataka, Lump, Morbidity, Mortality

INTRODUCTION

Appendicitis is one of the most common surgical diagnoses for young/adult patients presenting to the emergency with acute abdominal pain, with an overall prevalence of approximately 7–9%.[1] The classical presentation begins with per umbilical pain followed by anorexia, nausea, vomiting, pain in right lower quadrant with or without fever, and usually leukocytosis; however, these findings are not specific to the diagnosis and occur in patients with other etiologies for their abdominal pain.

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Appendicitis may be complicated perforation, appendiceal phlegmon, or abscess formation while the traditional treatment for the acute appendicitis has been emergent appendectomy non-operative management in complicated appendicitis with antibiotics and interval appendectomy is an alternative to immediate surgical management.[2,3] The timing of interval surgical removal of the appendix in cases of complicated appendicitis has not been standardized and there is still debate over the need of interval appendectomy if the initial non-operative approach is chosen in the complicated case of appendicitis that failed non-operative therapy.[4] Hence, both emergency and conservative appendicitis patients were evaluated and outcomes are noted.

MATERIALS AND METHODS

Sixty patients admitted at the Surgery Department of SN Medical College Hospital, Bagalkot 587102, Karnataka, were studied.

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Inclusive Criteria

The patients diagnosed as having acute appendicitis by physical examination and USG study were selected for the study.

Exclusive Criteria

The patient's previously undergone abdominal surgery for appendicitis and patients having CKD cardio vascular disease and malignancy in abdomen were excluded from the study.

Method

Patients undergone emergency surgery for appendicitis were classified as Group-I.

Patients treated with conservative treatment (management) through usage of antibiotics with or without ultrasound guided percutaneous drainage were classified as conservative treatment Group-II, which was subdivided into internal surgery group in which patient surgery at certain time after initial treatment is grouped as Group-II A, the ambulatory follow-up observation group whose patients underwent ambulatory follow-up observation continuously (Group-II B), and those patients follow up and underwent appendectomy for recurrent appendicitis (Group-II C).

Group-I – 19 patients aged between 35 and 45 years. The major symptoms were pain and vomiting, 16 (84.2%), 2 (10.5%) patients had fever and mass in the right lower abdomen, and 1 (5.26%) patient was diabetic apart from the symptoms of appendicitis.

Group-II – 41 (68.3%) patients having clinical symptoms of non-operative management. The clinical features were fever, abdominal distinction, and heart burn, among them, 9 (21.9%) had HTN, 7 (17%) had type-II DM, and 4 (9.75%) were tuberculosis and other respiratory diseases.

The clinical characteristics of patients, the type of surgery, and follow-up observation were analyzed on the basis of medical records. USC and routine blood examination were carried out in each patient.

Classification

- Group-I Emergency surgery group 19 (31.6%)
- Group-II conservative treatment 41 (68.3%)
- Group-II a – surgery after certain time (2A). b – Ambulatory follows up (2B). c – Underwent appendectomy (2C).

The duration of study was January 2019–October 2019.

Statistical Analysis

Clinical manifestation of both groups was compared. The statistical analysis was carried out in SPSS software. The ratio of male and female was 2:1.

OBSERVATION AND RESULTS

Table 1 shows comparison of clinical manifestation between both emergency and non-operative groups – duration of symptoms 6.68 in Group-I, 9.58 in Group-II; body temperature (C) – 38.1 in Groups-I, 36.76 in Group-II; heart rate (pulse/min) 87.4 in Group-I, 85.7 in Group-II; WBC count 13,252 in Group-II, 132,010 in Group-II; size of abscess (cm) 4.40 in Group-I, 49.8 in Group-II.

Table 2 shows comparison of surgical out come between emergency and delayed operations – Appendectomy 14 in Group-I, 26 in Group-2; leucotomy 4 in Group-I, 03 in Group-II; right hemicolectomy 2 only in Group-II; post-operative complications – 2 patients in Group-I, 5 patients in Group-II; and post-operative hospital stay 9.48 in Group-I, 9.3 in Group-II.

DISCUSSION

The present comparative study of non-operative versus operative management of appendicular lump in North Karnataka population – duration of symptoms 6.68 in Group-I, 9.58 in Group-II; body temperature (C) 38.1 in Group-I, 36.76 in Group-II; heart rate (pulse/min) 87.48 in Group-I, 85.73 in Group-II' WBC count 13,252 in Group-I, 132,010 in Group-II; and size of abscess (cm) 4.40 in Group-I, 4.98 in Group-II

Table 1: Comparison of clinical manifestations between both emergency and non-operative group

S. No.	Clinical manifestation	Group-I emergency	Group-II non-operative
1	Duration of symptoms	6.68	9.58
2	Body temperature (°C)	38.1	36.76
3	Heart rate (pulse/min)	87.48	85.73
4	WBC count	13.252	13.2010
5	Size of abscess (cm)	4.40	4.98

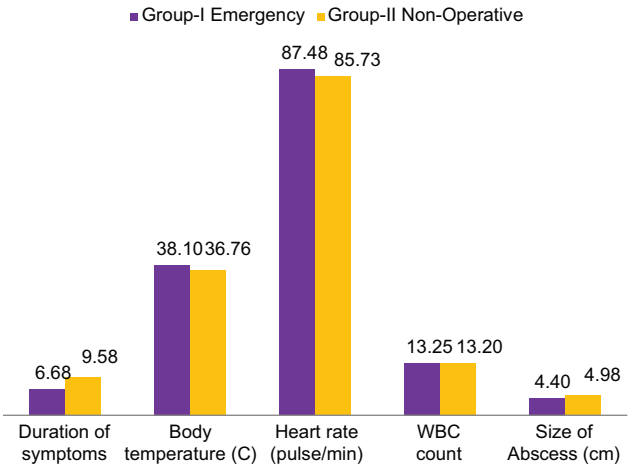
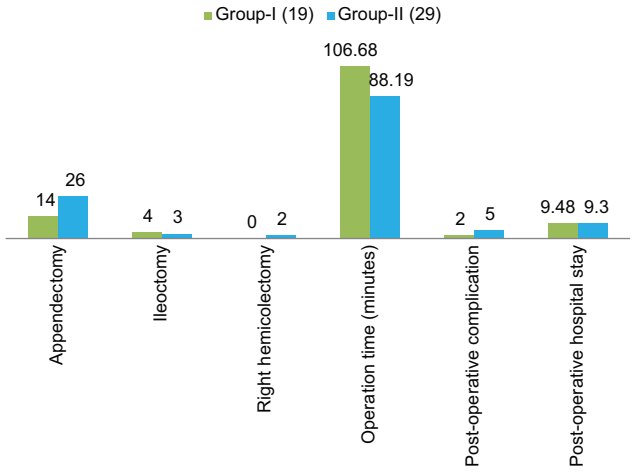


Table 2: Comparison of surgical out come between emergency and delayed operation groups

S. No.	Name of surgery	Group-I (19)	Group-II (29)
1	Appendectomy	14	26
2	Ileostomy	04	03
3	Right hemicolectomy		02
4	Operation time (minutes)	106.68	88.19
5	Post-operative complication	2 patients	5 patients
6	Post-operative hospital stay	9.48	9.3



[Table 1]. In comparative study of surgical outcomes in both groups – appendectomy 14 in Groups-I, 26 in Group-II; ileostomy -04 in Group-I, 03 in Group-II; right hemicolectomy 02 was observed only in Group-II; operation time (minutes) – 106.68 in Group-I, 88.19 in Group-II; post-operative complications were 2 patients in Group-I, 5 in Group-II; and post-operative hospital stays 9.48 in Group-I, 9.3 in Group-II [Table 2]. These findings are more or less in agreement with the previous studies.[5-7]

Obstruction of appendiceal lumen leads to increasing intra luminal pressures and can be caused by fecalith, foreign body, lymphoid hyperplasia, or malignancy. As intraluminal pressure rises, it eventually surpasses that of the appendicular veins leading to outflow obstruction. Venous congestion loss of epithelial integrity and bacterial invasion of the appendiceal wall with continued obstruction, intraluminal pressures may eventually surpass appendiceal ischemia and necrosis with possible perforation and lump of gangrene of the appendix.[8] Acute appendicitis surgery has shifted to laparoscopic appendectomy and accepted as the gold standard treatment since the early 1990s. Hence, rate complicated appendix increases as compared to uncomplicated cases[9] because neither clinical findings nor laboratory markers are reliable enough to estimate the severity of the acute appendicitis, therefore, roles of CT in identifying complicated and uncomplicated acute appendicitis are of pivotal importance.

Recent efforts to address the risk associated with surgical therapy of complicated appendicitis have included induction of non-operative management with intravenous antibiotics and interval appendectomy once inflammation has subsided to perform operation safely. It is studied that failure of non-operative management needed bowel resection whereas early appendectomy rarely needs bowel resection. It indicates that early surgery would have saved bowel resection, on the other hand, use of antibiotics and planning an interval appendectomy in cases of complicated appendicitis seems to be successful in the majority of cases complications such as abscess formation or readmission before planned interval appendectomy contributed to certain clinical indicator[10] of bad prognosis.

SUMMARY AND CONCLUSION

The present comparative study of non-operative versus operative management has proved that non-operative management of complicated appendicitis has significant failure rates when compared to immediate surgical management. Hence, immediate surgical management of complicated appendicitis should be used in complicated appendicitis. However, this study demands further genetic, nutritional, angiological, pathophysiological, and pharmacological studies because exact pathogenesis of appendicitis is still unclear.

This research paper was approved by ethical committee of S N Medical College, Bagalkot-587102.

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