

Original Research Article

Comparative Study on Delayed versus Early Appendectomy in cases of Acute Appendicitis

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Abstract

Background: Acute appendicitis is the commonest abdominal emergency. It can be managed as emergency or the surgery can be delayed for some time.

Materials and methods: The present comparative study included 128 patients with acute appendicitis admitted at the department of surgery. Data regarding clinical features, management and complications was noted and compared between the two groups.

Results: Mean age of patients, sex, BMI, initial total leucocyte count and associated comorbidities were similar in the two groups. Incidence of wound infection in the two groups did not differ as well as the chances of complications.

Conclusion: Appendectomy can be delayed in the selected patients without the risk of increased morbidity.

Key words

Appendectomy, Comparative Study, Delayed, Early.

Introduction

Acute appendicitis is the commonest cause of acute abdomen presenting to emergency [1]. Appendix has been considered to be a vestigial organ and the inflammatory conditions are best dealt with by excising it. Previously, the golden

rule was to do appendectomy in all the cases of acute appendicitis within four hours to prevent complications like increased postoperative morbidity, perforated appendix or periappendiceal abscess [2]. This procedure has been termed as early appendectomy.

With progress in the medical science, there has been better understanding of pathophysiology of appendicitis along with availability of better antibiotics. This has led to newer insights in management of appendicitis. Few researchers have found that medical treatment of appendicitis or performing delayed surgery does not lead to increase in complications [3]. Delaying the surgery and doing it in a selective way leads to better acceptability and lesser complications. On the other hand, others have concluded that even with newer techniques, the complication is more in cases of delayed appendicectomy [4].

The present study was conducted to explore the complication of delayed appendicectomy.

Aim and objectives

The present study was conducted to compare the complications and post-operative course between emergency and delayed appendicectomy.

Materials and methods

The present hospital based analytical study was conducted at department of Surgery of a medical college hospital. Patients admitted in the department of Surgery and diagnosed to be suffering from acute appendicitis were included in the present study. The patients with perforation, gangrene or tumor of the appendix were excluded. A total of 128 patients were included. Those with a time interval from arrival to incision less than 8 hours were included in the early group and those in whom a time from arrival to incision was longer than 8 hours were included in the delayed group.

Details regarding socioeconomic status and clinical history were noted. General and systemic examination was done and findings were noted. The patient underwent either early appendicectomy or delayed one as per his condition. Post-operative details regarding recovery and complications were also recorded.

Pretested proforma was used for data collection. It was entered in Microsoft Excel and analyzed

using SPSS v 16. Data was summarized as frequency and percentage for categorical variables and mean \pm SD for numerical variables. p value of less than 0.05 was considered to be statistically significant. Informed consent was obtained in all the cases. Records were kept confidentially.

Results and Discussion

A total of 128 patients were included in the present study. 76 patients (59.4%) underwent early appendicectomy while it was delayed in 52 patients (40.6%). **Table - 1** shows that the two groups were similar in nature and statistical difference was not significant regarding mean age of patients ($p=0.19$), sex ($p=0.73$), BMI ($p=0.09$), initial total leucocyte count ($p=0.37$) and associated comorbidities ($p=0.86$). Hours from diagnosis to operation was different in the two groups ($p<0.0001$).

Table - 2 shows the findings of post-operative period in the two groups. Postoperative TLC on the second day was lower in the delayed group and the difference was significant ($p=0.03$). Total duration of hospital stay was also shorter in the delayed group with significant difference ($p=0.04$). However, time taken to eat soft diet was similar in the two groups ($p=0.18$).

Regarding post-operative complications (**Chart - 1**), incidence of wound infection in the two groups did not differ ($p=0.35$) as well as the chances of complications ($p=0.69$). Readmission within one month was seen in only one case in the delayed group and no inference could be drawn.

Kamble, et al. [5] found that the complication rate was more in urgent open group as compared to early elective group. The common complications, seen more in urgent group, were adhesions, due to less antibiotic cover, bleeding due to quick, uncoordinated, rough dissection and inadequate hemostasis and wound infection due to poor patient preparation and poor sterilization of OT after day's procedure.

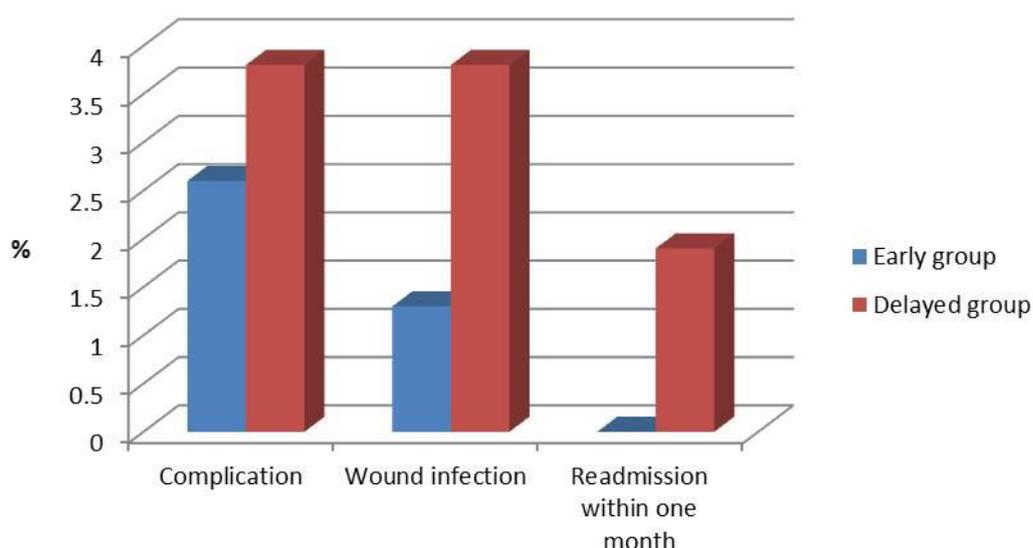
Table – 1: showing profile of patients among the two groups.

Factor	Early group	Delayed group	Significance
Number of cases	76 (59.4%)	52 (40.6%)	-
Age (years)	33.4 ± 10.9	36.1 ± 12.3	t= 1.3, p= 0.19
Sex			
- Male	43	31	X ² = 0.12, p= 0.73
- Female	33	21	
Body mass index (kg/m ²)	24.1 ± 3.1	23.2 ± 2.7	t= -1.7, p= 0.09
Initial TLC(×10 ³ /mm ³)	13.4 ± 2.8	13.9 ± 3.5	t= 0.89, p= 0.37
Comorbidities			
- Yes	68	47	X ² = 0.03, p= 0.86
- No	8	5	
Hours from diagnosis to operation	4.1 ± 1.7	12.0 ± 3.4	t=17.4, p <0.0001

Table – 2: showing postoperative features.

Factor	Early group	Delayed group	Significance
Postoperative second day TLC (×10 ³ /mm ³)	9.8 ± 2.4	8.7 ± 3.1	t= -2.3, p= 0.03
Time to soft diet (day)	2.1 ± 0.9	1.9 ± 0.7	t= -1.3, p= 0.18
Total hospital stay (day)	5.3 ± 3.4	4.8 ± 2.9	t= -0.9, p= 0.04
Complication	2 (2.6%)	2 (3.8%)	X ² = 0.69, p= 0.69
Wound infection	1 (1.3%)	2 (3.8%)	X ² = 0.86, p= 0.35
Readmission within one month	0	1 (1.9%)	-

Chart -1 showing post operative complications



Shin, et al. [6] observed that the mean WBC count at postoperative first day of delayed group were lower (p = 0.0039). There were no significant differences in time to soft diet, length

of postoperative hospital stay, complication rate, and readmission rate between two groups. SSI including intra-abdominal abscess was also shown no significant difference. They concluded

that delayed appendectomy was safe and feasible for adult patient even though the clinical outcomes of delayed appendectomy were not superior to those of early appendectomy.

Pramod, et al. [4] reported that most common presentation for children with appendicitis was pain abdomen. Perforation of the appendix with generalized peritonitis was the commonest finding. Mean duration of stay was 7.46 days. Wound infection was seen in 15% of the children. Late complication in the form of adhesive obstruction was seen in 5 patients.

Maini, et al. [3] found that during conservative management of early uncomplicated appendicitis in children, 56.75% patients were treated conservatively. 16.21% patients needed surgery within 1 year while 40.54% patients didn't require any surgical intervention during 1 year follow up period. In their study, significant role of antibiotic was found in conservative management of acute appendicitis in children. They concluded that conservative management of acute appendicitis in children can be attempted under observation.

Conclusion

It is concluded from the present study that delaying appendicectomy does not lead to increased risk of complications. The clinical course of patients is similar in the two groups. Hence, delaying appendicectomy can be useful for feasibility and better acceptability.

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