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Conservative Management in Acute Appendicitis is it Superior to Surgery? A Retrospective Study

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Abstract

Aim: To see the merits of the surgical treatment and hence to reaffirm the superiority of surgery in acute appendicitis.

Background: Surgery was the treatment of choice for acute Appendicitis which was practised over centuries. During the last decade, there were some publications about the conservative management of uncomplicated acute Appendicitis in adults and its advantages over the surgery. And all that studies also states that there was recurrence of about 20-30 %.

Methods: The data of patients that came to the surgical department with acute appendicitis and recurrent appendicitis during the period November 2020 to December 2021 were analysed. The patients treated with surgery alone were included in the study. Detailed history, laboratory investigations and radiological investigation including Ultrasonogram (USG) were analysed to differentiate acute and recurrent cases. From the data we could identify the number of both acute and recurrent cases. Hospital admissions, number of episodes for the recurrent treatment, loss of working days and other relevant data were collected from the patients. Results: There were 61 patients who were operated for appendicitis including both acute and recurrent cases in the period of 1 year in the COVID era. Among these 34 were acute appendicitis and 27 recurrent appendicitis. Male: Female ratio was 39:22. Our study shows that majority are male patients and the most numbers are in the age group 10-30 years comparable to the standard statistics. Our study shows that 44.26% (27) of the total cases (61) operated was recurrent appendicitis. The number of recurrent episodes varied from the period of 1 week to 2 years after conservative treatment". In them treatment also varied from outpatient to inpatient in different individuals. The advantage of less hospital stays and decreased morbidity of conservative treatment is lost with subsequent investigation and surgical treatment in those. All the patients who got operated on follow up had an uneventful post operative period.

Conclusion: So conservatively managed patients had lost many working days and had economic loss compared to patients operated for acute appendicitis early. Early surgery in acute appendicitis actually decreased the cost and morbidity.

Keywords: Acute appendicitis; Recurrent Appendicitis; Appendicectomy; Conservative treatment; Appendicular perforation.

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Aim

To establish the efficacy of conservative management in the treatment of acute appendicitis and to see the merits of the surgical treatment and hence to reaffirm the superiority of surgery in acute appendicitis.

Background

Surgery was the treatment of choice for acute Appendicitis which was practised over centuries. During the last decade, there were some publications about the conservative management of uncomplicated acute Appendicitis in adults and its advantages over the surgery.[1,2] There is no role of conservative management in children[5] and old age as delay in treatment will produce more complications because these group lacks omental protection and more chance of perforation. So conservative management is applicable only for a small group. And all that studies also states that there was recurrence of about 20-30%.[2,6] So conservatively managed patients had lost many working days and had economic loss compared to patients operated for acute appendicitis early. Early surgery in acute appendicitis actually decreases the cost and morbidity.[13] and most of them are almost asymptomatic on follow up.

Methods

The data of patients came to the surgical department with acute appendicitis and recurrent appendicitis during the period December 2020 to November 2021 were collected. The patients treated with surgery alone were included in the study. Detailed history, laboratory investigations and radiological investigation including Ultra Sonogram (USG) were analysed to differentiate acute and recurrent cases. From the data we could identify the number of both acute and recurrent cases. We could also study the incidence of appendicitis in different age group and gender, and can compare with standard incidence in literature.

Hospital admissions, number of episodes for the recurrent treatment, loss of working days and other relevant data were also collected. The patients managed conservatively for other reasons in this COVID era were not included in this study.

Results

There were 61 patients who got operated for appendicitis including both acute and recurrent in the period of 1 year in the COVID era. Surgical method used both laparoscopy and open technique. Among these 34 were acute appendicitis and 27 recurrent appendicitis. Male: Female ratio was 39:22. Most common age group presented with pain is 10-30 yrs. In patients with acute appendicitis only 3/34 patients had a WBC count less than 10 x 10^3 /Cu.mm. Among the recurrent appendicitis only 5/27 patients had a WBC count more than 10 x 10^3/cu.mm. In acute cases Mean total count was 160 82/ cu.mm (4190/cu.mm to 27000/cu.mm). In recurrent cases Mean value of total count was 7896/ cu.mm (4350 to 18230/cu.mm). Ultrasonogram USG abdomen was mainly used imaging and only in selected 4 patients CT scan abdomen was taken. In USG abdomen, only in acute appendicitis group there was significant increase in diameter of appendix. Mean value of diameter of appendix in acute cases was 9.55mm (Range 4mm to 15 mm) and in recurrent cases it was 7.5 mm (5.1mm to 10 mm).

Table 1:

Total number of Appendicectomy during the period of 1 year (Dec 2020-Nov 21)	61
Acute appendicitis	37
Recurrent Appendicitis	24
Number of Patients in the age group 10-30 yrs.	44
Male Patients	39
Female Patients	22

Table 2:

	No. of cases	Gender		Total Count (Mean)	Diameter of Appendix (Mean)
		M	F		
Acute Appendicitis	37	26	11	16082/cu. mm	9.5 mm
Recurrent Appendicitis	24	13	11	7896/cu. mm	7.5 mm

The data is depicted in Table 1 & 2. Operative time was varied because surgery done by different persons in the department. From the history, there were patients from 1 week to 2 years after conservative treatment had come for surgery. Number of episodes treatment and intensity of pain to get admitted varied in different individuals.

Hospital admitted cases had given parenteral antibiotics for 3 days and given oral antibiotics for further 3-4 days.21/27 cases gave the history of admission and investigations in the 1st episode of attack.6/27 was given outpatient treatment in the 1st episode. So conservatively treated cases already lost 3-5 days before surgery. Loss of working days varied in different cases depending on the number of episodes of attack before the surgical treatment. Hence conservatively managed patients lost much more days than acutely managed cases when finally had to undergo surgery.

Difficulty was there in four patients who got operated 5-7days after conservative treatment, i.e., failed conservative treated cases. History part was

the main focus of this study, ascertaining whether acute or recurrent, number of episodes of treatment after diagnosing appendicitis, number of days of inpatient as well as outpatient treatment. Also took the history of failure of conservative management within days to months.

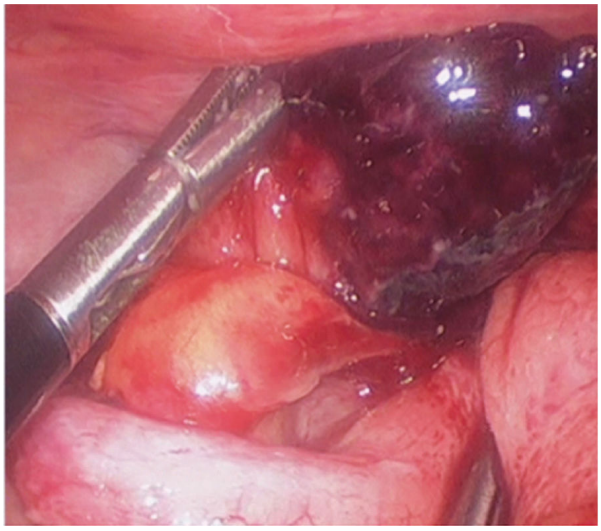


Fig. 1: Gangrene Appendix.

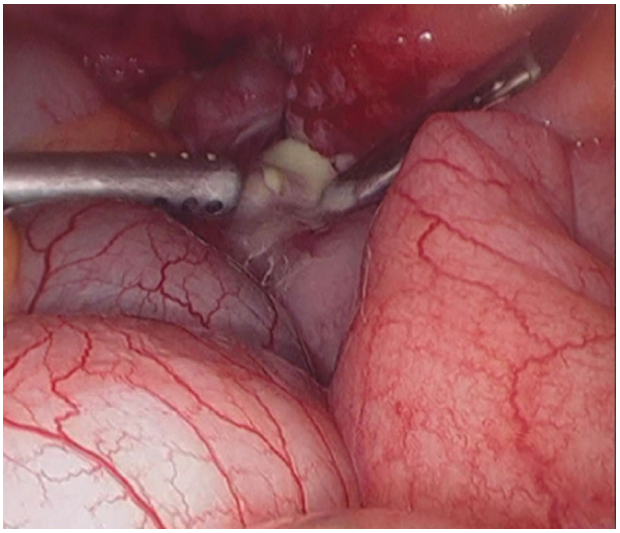


Fig. 2: Appendicular Abscess.

Delayed primary surgery as a part of failed conservative treatment increased morbidity. Perforation, abscess and gangrene were seen in such cases (figure 1,2). Recurrent appendicitis got operated after the first acute episode had no surgical problems, probably patients themselves are aware of their problems and presented early.

Post operative period was uneventful in all the cases except in 2 which was admitted with adhesive colic and got relieved with conservative treatment. Patients were followed up 2, 4 and 8 weeks. There was nothing significant to be recorded.

Discussion

Appendicectomy is practised over centuries for acute appendicitis and this is the surgery we all do in the initial stage of our career and the most common surgery we perform in our entire life time. And the complication is very rare in expert hands. A good clinical diagnosis with modern imaging gadgets and laboratory investigations, there is no diagnostic dilemma in appendicitis case.[3] Immunological function of appendix in adult is not proven unlike in children.

Here the debate was whether to do conservative management in acute appendicitis or to do early surgery. Federico C et al mentioned role of conservative treatment in uncomplicated appendicitis only[3] and the advantage of conservative treatment is decreased hospital stay, cost and less morbidity in the first management compared with surgery. But conservative treatment is not advisable in children[3] and old age and complicated appendicitis (perforation, peritonitis, abscess).

Theoretically a 20% negative appendicitis[10] after surgery does not justify denying the surgery to decrease the morbidity. All agree that 20-30 % of conservatively managed patients had to undergo surgery subsequently.[6,8] Svensson JF et al said that 10% of conservatively managed patients needed immediate surgery and 17% needed surgery within 1 year.[6] And sometime in conservatively managed patients if complication develops may be in few days to week, then we may have to change conservative management to surgical option. There again we are losing the advantage of conservative management. Earley AS et al described early surgery decreased the time of surgery, hospital stay and complications]. Delaying the surgery will only increase the morbidity of surgery.[13]

Conclusion

Our study shows that early surgery in appendicitis gives good results. Incidence is more in males and in the age group 10-30 years comparable to the standard statistics. The advantage of less hospital stays and decreased morbidity of conservative treatment is lost with subsequent investigation and surgical treatment. Moreover, they had to suffer the physical and psychological trauma during the recurrent attacks after conservative management. As in Alvarado score total count is not diagnostic of recurrent appendicitis. Probably they are presenting early because they are aware of their disease. We are for the Surgical treatment for acute Appendicitis especially with the help

of modern imaging investigations to diagnose appendicitis. And very minimal morbidity of surgery has been seen with emergence of high-definition laparoscopic camera.[4,2] Even though a certain group of patients does not require surgery after conservatively treated appendicitis, some of them required surgical intervention because of complication in the immediate period, and some required because of the recurrent episode. Only advantage we find in conservative treatment is less hospital stay and cost and less morbidity in the first admission[8]. Since we cannot predict which group of patients will be benefitted by conservative treatment, putting one group of patients in risk of delayed surgery and increased morbidity; the conservative management in acute appendicitis is not justifiable.

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