

Acute Appendicetomy is Better Choice for Appendicular Mass

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Objective: To compare the cost effectiveness, hospital stay and morbidity in each type of management of appendicular mass i.e. early surgical intervention and conservative management. **Design:** A randomized comparative study. **Place and duration:** South Surgical Ward, Mayo Hospital Lahore from July, 1999 to January, 2001. **Patients and Methods:** 40 patients were included dividing in two equal groups. Group A patients were explored early and group B patients were managed conservatively. Cost effectiveness, hospital stay and morbidity were determined in each group. **Results:** Mean hospital stay was 2.85 days (2-4 days) in group A and 6.25 days (5-8 days) in group B (p value < 0.001). Mean expenditure in group A was Rs.1255 and Rs. 2183.75 in group B (p value < 0.001). 100% patients in group A got complete pain relief within three days while it took 7 days for 90% of patients in group B (p value < 0.001). Oral fluids were started earlier in group A as compared to group B (p value < 0.05).

Key words: appendicitis, appendicular mass, early exploration, acute appendicectomy

Acute abdomen is the most common cause with which the patient present in surgical emergency room and among these the most commonly diagnosed surgical disease requiring operation is acute appendicitis¹. Failure in early diagnosis and surgical treatment leads to complications with increased morbidity and mortality^{2,3}. Acute appendicitis is complicated by the development of a periappendicular mass in 2-6% of cases⁴. It usually occurs if diagnosis is missed or an appendicectomy is not performed. Appendicular mass is an inflammatory tumor of an inflamed appendix, it's adjacent viscera and greater omentum⁵. The management of patients with appendicitis and a mass in right iliac fosse is controversial⁶. Many surgeons believe that operative management of patients with appendiceal masses seems to be associated with a high risk of postoperative complications and the risk of a more extensive surgical procedure. If possible, a conservative approach should be advocated⁷. Others believe that low morbidity, reduced hospital stay, low cost and patient compliance favour operative management of appendicular mass by experienced surgeons thus obviating the old practice of conservative treatment followed by interval appendicectomy⁸.

So there has been a great debate regarding the management of appendicular mass. This study bears a randomized trial of the two modes of management i.e. early surgical intervention and conservative management. Objectives of this study are to determine the cost effectiveness, hospital stay and morbidity (duration of pain & nothing per oral) in each type of management.

Patients and methods:

This study was carried out in South Surgical Ward; Mayo Hospital Lahore. 40 cases of appendicular mass were included in the study. Patients were divided in two equal groups i.e. group A and group B. Division was randomized and was according to the date of birth or year of birth of patients. Group A included all patients having date of birth on even numbers and group B having date of birth on odd

numbers. In patients, who did not know their exact date of birth, year of birth was included. Group A included all patients in whom early exploration was performed. All operations were performed under general anesthesia with endotracheal intubation. A consultant or a senior resident in each case performed surgery. A doze of prophylactic antibiotics was given at the time of induction in the form of Ampicillin 500mg, gentamicin 80mg, and metronidazole 500mg. Two dozes of antibiotics were given post operatively. Patients in group B were managed with a combination of Ampicillin, gentamicin and metronidazole administered intravenously for at least 5 days and continued if patient's stay prolonged. Regular analgesia was given to relieve pain. Intravenous fluids were given as long as paralytic ileus lasted. The patients were monitored for pain, pulse rate, temperature, tenderness and size of mass. They were discharged as their symptoms resolved and mass showed signs of regression with an advice to come back for interval appendicectomy after eight weeks or anytime earlier if their symptoms recurred. A standard protocol involving history, physical examination, investigations and proper evaluation of the mass was included for each group. The investigations included were hemoglobin, leucocyte count and urinalysis routinely and in relevant cases blood sugar, urea, serum electrolytes and ultrasonography. Total hospital stay and total cost of patients during their stay were noted including the expenses of food, patients' attendants and transportation in each group.

Results:

From July, 1999 to January, 2001, there were forty patients fulfilling the criteria of selection who were included in the study. They were equally divided into group A and group B with 20 patients in each group. Group A patients underwent for early exploration and group B patients put on conservative treatment to compare the significant difference in respect of hospital stay, cost effectiveness and morbidity (Duration of pain and NPO period).

In group A, the overall hospital stay was less than the group B patients (Table.1). In group A, the mean stay was 2.85 days ranging from two to four days. In group B, the mean hospital stay was 6.25 days ranging from five to eight days (p-value<0.001).

Table 1: Hospital stay

Days	Group A		Group B	
	=n	%age	=n	%age
1	-	-	-	-
2	6	30	-	-
3	11	55	-	-
4	3	15	-	-
5	-	-	4	20
6	-	-	9	45
7	-	-	5	25
8	-	-	2	10

In group A patients, the mean expenditure was Rs.1255 ranging from Rs.1050 to Rs.1500. In group B, the mean expenditure was Rs.2183.75 ranging from Rs.2100 to Rs.2500 (p-value<0.001) (Table 2).

Table:2 Estimation of Expenses in Rupees.

=n	Group A		=n	Group B	
	Expenses			Expenses	
6	Rs.1050		13	Rs.2100	
11	Rs.1300		9	Rs.2275	
3	Rs.1500		2	Rs.2500	

In group A 100% patients got complete relief of pain within 3 days of admission on the other hand it took 7 days for 90% patients in group B to become pain free after admission (p-value<0.001) (Table 3).

Table: 3 Duration of pain.

Days	Group A		Group B	
	=n	%age,	=n	%age
1	-	-	-	-
2	6	30	-	-
3	11	55	-	-
4	3	15	-	-
5	-	-	4	20
6	-	-	9	45
7	-	-	5	25
8	-	-	2	10

Oral fluids were started much earlier in group A as compared to that in group B (p-value<0.05) (Table 4).

Table:4 Duration of NPO period

Days	Group A		Group B	
	=n	%age	=n	%age
1	-	-	-	-
2	13	65	-	-
3	6	30	-	-
4	1	5	3	15
5	-	-	10	50
6	-	-	4	20
7	-	-	2	10
8	-	-	1	5

Discussion:

In the past it has been routine practice to manage the patients with appendicular mass conservatively⁴. Conservative management includes admission in the hospital, intravenous fluids and antibiotics⁵. Tingstedt B & colleagues in their study have mentioned that operative management of patients with appendiceal masses seems to be associated with a high risk of postoperative complications and the risk of a more extensive surgical procedure. If possible, a conservative approach should be advocated⁷. Skoubo-Kristensen E and Hvid I have also proved in their study that conservative management of appendicular mass carries lower morbidity⁹.

Many surgeons believe that with improved facilities immediate exploration of appendicular mass is recommended⁴. De U and Ghosh S favour operative management of appendicular mass by experienced surgeons⁸. A study by Vakili C also favours operative treatment of appendicular mass¹⁰. Senapathi PS and colleagues in their study have even mentioned that early laparoscopic appendectomy for appendicular mass is feasible and safe, obviates the need for a second hospital admission, and avoids misdiagnoses¹¹.

This study is a comparative evaluation of conservative management and early surgical intervention in appendicular mass. We have compared hospital stay, cost and morbidity in the form of pain duration and nothing per oral (NPO) period. In this study this is proved that acute appendicectomy in appendicular mass is cost effective and safe. Pain relief is quicker and oral feeding is started earlier in patients with early surgical intervention as compare to patients on conservative management. Hospital stay is also less in patients where early appendicectomy was done. Our study is comparable to the study by Samuel and colleagues; in their study total mean hospital stay in group 1 (conservatively managed) was 13.2 +/- 1.5 versus 4.8 +/- 0.4 days in group 2(early intervention)¹² and in our study mean hospital stay was 6.25 days ranging from five to eight days in patients who were managed conservatively(group B) as compare to patients in which early exploration was done(group A) in which mean hospital stay was 2.85 days ranging from two to four days.

Conclusion:

While comparing two modes of management i.e. conservative versus early surgical intervention, it is recommended that acute appendicectomy is better choice for appendicular mass. It is safe and cost effective. It ensures early require with complete cure. So with improved anaesthesia, better supportive care and antibiotic therapy, immediate exploration of appendicular mass is recommended. Further research is needed in different centers because practically surgeons still continue to adopt the old regime of conservative management. Never the less this study clearly highlights that early exploration of

appendicular mass is better and should be adopted by surgeons of present time.

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