

Original Article

Outcome of Early Appendicectomy in Appendicular Mass Versus Conservative Approach

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ABSTRACT

Aim: The objectives of the study are to compare the outcome of early appendicectomy in appendicular mass versus conservative approach.

Study Design: Experimental Study.

Place and Duration of Study: This study was carried out in Surgical Unit-IV, Liaquat University Hospital Hyderabad, from January 2008 to December 2009.

Materials and Methods: This study consisted of hundred patients were divided in two groups. Group A for early appendicectomy and group B traditional conservative treatment, each group consist of 50 patients admitted through the outpatient department, as well as from casualty department of Liaquat University Hospital Jamshoro/Hyderabad. Data was analyzed through SPSS software.

Results: In conservative management (CM) group 36(72%) were male and 14(28%) female. Ratio male:female ratio of 2.25:1. In immediate surgery (IS) group 34(68%) were male and 16(32 %) female with male:female ratio of 2.1:1. There was wide variation of age ranging from a minimum of 10 year to 50 year in both group. The mean age was 22.3 ± 3.30 years for CM group and 23.4 ± 3.50 years for IS group.

Pain in right iliac fossa were found in all patients in both groups , vomiting was seen 42(84%) patients in CM group and 43(86%) patients in IS group , nausea was seen 17(34%) patients in CM group and 18(36%) patients in IS group, fever was 42(84%) patients in CM group and 44(88%) patients in IS group, diarrhea was 4(8%) patients in both groups, anorexia was seen 35(70%) patients in CM group and 37(74 %) patients in IS group, constipation were 9(18%) patients in both groups and urinary complains was 8(16%) patients in CM group and 9(18%) patients in IS group.

Ultrasound findings revealed was inflamed appendix with omentum adherent in 10(20%) patients of CM group and 9 (18%) patients of IS group where as inflamed appendix with omentum and abscess formation in 17(34%) patients of CM group and 19 (38%) patients of IS group, and edematous appendix with fecolith and omentum adherent in 23(46%) patients of CM group and 22(44%) patients of IS group. Operative time in both groups was recorded. Operative time range 30 minutes to 90 minutes in both groups. The mean time in CM group was 60.10 ± 11.90 minutes and IS group was 45.30 ± 7.96 minutes.

Conclusion: The early appendectomy in appendicular mass is a safe alternate to conventional way of managing this problem. Hence, it obviates the need of a second admission and provides curative treatment during the index admission whereby minimizing total expenses.

Key words: Early appendicectomy , Appendicular mass , Conservative approach , Appendix, Complications of appendix.

INTRODUCTION

Acute appendicitis is one of the commonest surgical emergency requiring surgery ¹. No age is immune, but the highest incidence is seen during the second decade of life with a slight male dominance ².

Patient presenting late in the course of acute appendicitis usually present with a palpable mass in the right iliac fossa. This mass is composed of inflamed appendix, omentum, loop of small bowel and oedematous caecum. The surgical management of acute appendicitis presenting with appendicular mass remains

controversial³ but traditionally these patients are dealt with conservatively by putting them on the well known Ochsner Sherren regimen believing that surgery in these patients is hazardous, time consuming and has greater morbidity and mortality. The conservative management involves a long hospital stay and comprises, hospitalization, broad spectrum antibiotic cover, intravenous fluids and continuous monitoring of the vital signs ⁴.

Patients who respond well to this conservative treatment are usually re-admitted for an interval appendectomy after a period of 6-8 weeks. This

conservative treatment is needed for 1-2 weeks and thus causes a lot of economical burden on the patient. In addition, it demands a second admission for appendectomy and may need to be stopped in case of failure. Keeping in view all these facts, we carried out this study to find out the benefit of early appendectomy in terms of economical loss and undue and prolonged hospitalization.

MATERIALS AND METHODS

This study was carried out in Surgical Unit-IV, Liaquat University Hospital Hyderabad, from January 2008 to December 2009. This study consisted of hundred patients were divided in two groups. Group A for early appendectomy and group B traditional conservative treatment, each group consist of 50 patients admitted through the outpatient department, as well as from casualty department of Liaquat University Hospital Jamshoro/Hyderabad.

A detailed history was recorded on specially prepared proforma. Thorough physical examinations including abdominal and rectal examination were done in every patient. Cardiovascular, respiratory and central nervous system were examined for evidence of any concomitant disease.

All patients underwent for base line and relevant investigations investigation like complete blood picture, urine detailed report. X-ray abdomen erect and supine posture, ultra sound abdomen was performed to help diagnosis.

Inclusion criteria Patients with clinically palpable appendicular lump or detected on ultra sound will be included in this study regardless of their age and sex.

Exclusion criteria Patients

with malignant lump or iliocaeal tuberculosis mimicking appendicular lump assessed clinically or on operative findings will be excluded from the study. Data was analyzed through SPSS software version 16.0.

RESULTS

This study was carried out in the General surgical department at Liaquat University Hospital Hyderabad, Sindh, Pakistan from 2008 to 2009. This study consisted of 100 patients of appendicular mass diseases were admitted and divided into two groups.

In conservative management (CM) group 36(72%) were male and 14(28%) female. Ratio male:female ratio of 2.25:1. In immediate surgery (IS) group 34(68%) were male and 16(32%) female with male:female ratio of 2.1:1. There was wide variation of age ranging from a minimum of 10 year to 50 year in both group. The mean age was 22.3 ± 3.30 years for CM group and 23.4 ± 3.50 years for IS group.

Symptoms of patients in both groups were almost same. Pain in right iliac fossa were found in all patients in

both groups, vomiting was seen 42(84%) patients in CM group and 43(86%) patients in IS group, nausea was seen 17(34%) patients in CM group and 18(36%) patients in IS group, fever was 42(84%) patients in CM group and 44(88%) patients in IS group, diarrhea was 4(8%) patients in both groups, anorexia was seen 35(70%) patients in CM group and 37(74%) patients in IS group, constipation were 9(18%) patients in both groups and urinary complains was 8(16%) patients in CM group and 9(18%) patients in IS group.

Clinical examinations of patients (signs) in both groups were not so much different in percentage wise. In conservative management (CM) group tenderness at Mc Burney's was present in 50(100%) patients, guarding was present in 47(94%) patients, rebound tenderness was present 41(82%) patients, Rovsing's sign was present in 23(46%) patients and cough sign was present in 44(88%) patients. Where as in immediate surgery (IS) group, tenderness at Mc Burney's was present in 50(100%) patients, guarding was present in 46(92%) patients, rebound tenderness was present 42(84%) patients, Rovsing's sign was present in 24(48%) patients and cough sign was present in 45(90%) patients.

Ultrasound findings revealed was inflamed appendix with omentum adherent in 10(20%) patients of CM group and 9 (18%) patients of IS group where as inflamed appendix with omentum and abscess formation in 17(34%) patients of CM group and 19 (38%) patients of IS group, and edematous appendix with fecolith and omentum adherent in 23(46%) patients of CM group and 22(44%) patients of IS group.

In CM Group Leucocyte count ($n=50$) more than $>11000/\text{cu mm}$ were seen in 49(98%) patients and $<11000/\text{cu mm}$ was only in 1 (2%) patient, where as in IS group ($n=50$) leucocyte count more than $>11000/\text{cu mm}$ were in 50(100%) patients and $<11000/\text{cu mm}$ was not only in single patient.

37(74%) patients out of 50 patients were mass completely resolved on conservative treatment and 13(26%) patients there was no response on conservative treatment and conversion to surgery.

The duration of hospital stay varied. Total hospitalization period in immediate surgery group was 4 days to 8 days and average time was 6 days. In conservative management of mass plus interval appendectomy after 6-8 weeks, minimum times was 5 days, maximum time were 12 days and average time were 8.5 days.

Post operative complications in immediate surgery group was pain in 40(80%) patients, vomiting in 25(50%) patients, fever 24(48%) patients, wound infection 24(48%) patients, wound dehiscence 3(6%) patients and paralytic ileus in 7(14%) patients. While in conservative management group (interval

appendicectomy n=22) pain in 16(72.7%) patients, vomiting in 4(18.18%) patients, fever 5(22.72%) patients, wound infection 5(22.72%) patients and paralytic ileus in 1(4.54%) patients.

Return to normal activity in immediate surgery group was 12 days minimum to 25 days maximum and average time was 18.5 days. Where as in conservative management group was 18 days minimum to 28 days maximum and average time was 23 days.

Variable		Treatment				
		Conservative Management		Early Appendicectomy		
		Number of Patients	%age	Number of Patients	% Age	
Gender						Male : Female Ratio CM 2.25:1 IS 2.1:1
• Male		36	72%	34	68%	
• Female		14	28%	16	32%	
Age						Mean Age : CM 22.3±3.30 years IS 23.4±3.5 years
• 10-20 years						
• 21-30 years		4	8%	5	10%	
• 31-40 years		26	52%	22	42%	
• 41-50 years		10	20%	13	26%	
		8	16%	10	20%	
Presenting Complaints						
• Pain in right iliac fossa		50	100%	50	100%	
• Vomiting						
• Nausea		42	84%	43	86%	
• Fever		17	34%	18	36%	
• Diarrhea		42	84%	44	88%	
		4	8%	4	8%	

DISCUSSION

The treatment of appendicular mass is taking a turn from the traditional approach of initial conservative treatment followed by interval appendicectomy to immediate appendicectomy^{5,6}. However this change is not widely accepted and the appendicular mass is traditionally treated by a conservative treatment (The Ochsner Sherren regimen) followed by interval appendectomy 6-8 week later. This comprises of hospitalization, broad spectrum antibiotics, Metronidazole and closed monitoring of the general health and vitals of the patients. Large number of surgeons still continue to adopt the same traditional approach^{7,8,9}. The rational of this study to early appendicectomy in patients presenting with appendicular mass, so as to reduce hospital stay, cut short the over all expenses and to ensure an early return to work.

In our study male to female ratio seen in CM group was 2.25:1 as compared to IS group where it was 2.1:1. However the male to female ratio given by Malik AM¹⁰ is 2.3:1 and Choudry ZA¹¹ is 2.2:1. The age ranged from 10 to 50 years in both groups with mean age was 22.3± 3.30 years for CM group and 23.4±3.50 year for IS group. The peak age of presentation in our

study is 15 to 30 years which is comparable to other study where peak age group presented 27.3 year¹⁰.

In our study the Pain in right iliac fossa was the commonest presentation (100%) followed by vomiting 84% , anorexia 70% and fever 84% in both group. However in study of Evan P¹¹ and Bor FS¹² the patients presented with vomiting 79%, anorexia 65% and fever 80%. In our study tenderness in right iliac fossa were 100% in both groups , guarding (CM=94 % vs IS= 92%), rebound tenderness (CM=82 % vs IS= 84%), and cough sign (CM=88 % vs IS= 90 %).

The clinical parameters were further supported by ultrasound examination which revealed inflamed appendix with omentum in (CM=20% VS IS= 18%), inflamed appendix with omentum and abscess in (CM=34% VS IS=38%) cases and inflamed appendix with fecolith and omentum in (CM=46% VS IS= 44%). Ultrasound finding given by Johansson EP¹³ and David R¹⁴ in their study supported these results. In the study of Young HR¹⁵ showed leucocyte counts high in all cases where as in our study leucocyte count >11000 in all cases.

In conservative treatment mass were resolved in 74%, but 26% patients did not respond on conservative treatment and needed immediate surgical intervention. Same is supported by other international studies^{4,16}. In

our study 30% patients did not report for interval appendectomy. Study of Gahukamble DB ⁷ reported 27.7% not reported for interval appendectomy.

In our study postoperative complications was found in IS group. The wound sepsis were observed in 48% patients, paralytic ileus in 4.5% patients, pain, fever and vomiting in 18-20% patients. Similar studies nearer to this data ^{17,18}. The hospital stay in this study ranged from 1 to 10 days in both groups with mean length of hospitalization as 7 ± 1.5 days in CM and 5 ± 1.5 days in IS group. It is comparable to other studies given by different authors like 5 days in CM ¹⁹ and 3 days in IS ²⁰.

In our study mean period return to normal activity were 18.5 days in IS group and in CM group were 23 days (conservative management + interval appendectomy). Similar studies also favour this ^{4,6,19}. The early operation has an edge of being curative in the index admission and ensures early return to work and high compliance.

CONCLUSION

The early appendectomy in appendicular mass is a safe alternate to conventional way of managing this problem. Hence, it obviates the need of a second admission and provides curative treatment during the index admission whereby minimizing total expenses.

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