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Original Research Article

A prospective study on appendicular mass

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ABSTRACT

Background: The immediate management of appendicular mass have always been controversial. Early appendicectomy (within 72 hours of presentation) is preferred in some cases, while in others non operative conservative management is advocated. Usually successful conservative management (Ochsner Sherren regimen) is followed by interval appendicectomy (6-8 weeks later). This study determines the outcome of different modalities of intervention in patients with appendicular mass.
Methods: A prospective study was conducted in Rajah Muthiah medical college hospital in department of general surgery from June 2018 to December 2020, in cases diagnosed to have appendicular mass. A total of 116 patients were included. After taking detailed history and clinical examination, relevant blood and radiological investigations, were done to achieve the final diagnosis. Presentation, examination findings, investigations, type of surgery, duration of surgery, post-operative complications and duration of hospital stay were studied. Data was collected, compiled, tabulated and analysed.
Results: Conservative management followed by interval appendicectomy had lesser incidence of complications like Intraoperative adhesions, surgical site infection, wound dehiscence and enterocutaneous fistula. It also had relatively lesser operative time and lesser period of hospital stay.
Conclusions: On comparing the different modalities of intervention, conservative management followed by interval appendicectomy is quite effective and safe method of treatment, with less operative difficulties and better outcome.

Keywords: Appendicular mass, Interval appendicectomy, Ochsner Sherren regimen

INTRODUCTION

Acute Appendicitis is the leading cause of acute abdomen in developing countries.[1] Approximately 12% of patients admitted with acute appendicitis present with an appendicular mass and about 20-40% had perforation.

An appendicular mass ranges from simple inflammatory mass to a complicated mass formed by a gangrenous, perforated appendix with peri-appendicular collection of pus (appendicular abscess).

The immediate management of appendicular mass has always been controversial. Early appendicectomy (within 72 hours of presentation) is preferred in some cases, while in others non operative conservative management is advocated.[2] In general, successful conservative management (Ochsner Sherren regimen) is followed by interval appendicectomy 6-8 weeks later.[3,4]

In this study, our objective is to determine the outcome of different modalities of intervention in patients with appendicular mass.

METHODS

A prospective study was conducted in Rajah Muthiah medical college hospital in department of general surgery from June 2018 to December 2020, in cases diagnosed to have appendicular mass.

Total of 116 patients were included.

Selection criteria

Inclusion criteria

Inclusion criteria included patients who were clinically diagnosed to have appendicular mass, age >14 years, both sex and non-pregnant women.

Exclusion criteria

Patients below 14 years, pregnant ladies and other masses of abdominal wall, urological or gynaecological origin were excluded from the study.

Procedure

After taking detailed history and clinical examination, relevant blood and radiological investigations were done to achieve the final diagnosis. In this study the presentation, examination findings, investigations, type of surgery, duration of surgery, post-operative complications and duration of hospital stay were studied. Data was collected, compiled, tabulated and analysed.

The sample size estimation and the Statistical analysis were done using SPSS software.

Ethical committee approval was obtained from our institutional human ethical committee.

In this study, we analysed a series of appendicular mass in the following categories.[5]

Table 1: Categories.

Groups	Categories
Group A	Surgical intervention at the time of presentation
Group B	Successful conservative management followed by interval appendicectomy
Group C	Failed conservative management followed by emergency surgical intervention with appendicectomy.
Group D	Failed conservative management followed by emergency peritoneal lavage and drain placement and later followed by interval appendicectomy.

The study is assessed in terms of sex, age, clinical presentation, investigation, management, complications, duration of surgery, and hospital stay.

RESULTS

Sex distribution

Among 116 patients, there were 76 male and 40 female patients (M:F ratio 1.9:1).

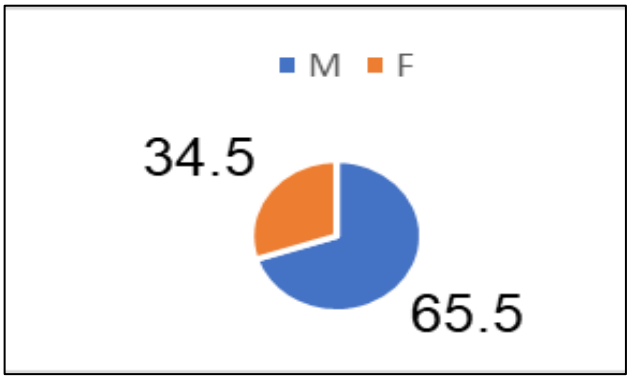

Figure 1: Sex distribution.

Age distribution

The age group ranged from 14 to 55 years. 41.3, 23.3, 21.6 and 13.8% were in the age group of 14-30,31-40, 41-50 and over 50 years respectively.

Table 2: Age distribution.

Age range (year)	No. of cases	Percentage (%)
14-30	48	41.3
31-40	27	23.3
41-50	25	21.6
>50	16	13.8

Clinical presentation

Abdominal pain was the common presentation. The presenting duration ranged from 2 to 15 days. 76 patients presented within 3 days, 24 within 6 days and 16 patients more than 6 days. Other predominant symptoms were vomiting and fever.

Clinical examination

On admission temperature was elevated in 98 patients and 98 had tachycardia. In 106 patients lump was clinically palpable in right iliac fossa.

Complete blood count was done in all cases, out of which WBC count >11,000 cells/cu.mm in 102 patients and neutrophilia >75% in 94 patients were observed. In all cases USG abdomen was done and appendicular mass

was found in 102 patients. There was no contributory specific ultrasonographic diagnosis in 6 patients, while in others, findings like acute inflammatory changes, perforation and abscess were found.

Table 3: Common presentation.

Symptoms	No. of patients	Percentage (%)
Abdominal pain	113	97.4
Vomiting	84	72.4
Fever	90	77.6
Anorexia	70	60.3
Constipation	12	10.3
Diarrhoea	16	13.8
Abdomen distension	8	6.9
Dysuria	10	8.6

Table 4: Common clinical signs.

Clinical sign	No. of patients	%
Raised temperature	98	84.5
Tachycardia	98	84.5
Palpable lump	106	91.4

Table 5: Investigations.

Parameters	No. of patients	%
WBC count		
Leucocytosis	102	87.9
Neutrophilia	94	81
USG abdomen		
Appendicular mass	102	87.9
Normal finding	6	5.2
Perforated appendix	2	1.7
Appendicular abscess	6	5.2

Management

Patients were categorised into 4 groups with respect to management.

Intraoperative adhesions were found to be more in Groups C and D. Surgical site infection was the commonest complication encountered (in 12% of patients). Wound dehiscence was noted more in groups C and D. Caeco cutaneous fistula was seen in 4 patients. Caeco vesical fistula was not seen in any patient in our study. Complications in group D was found to be proportionally higher in almost all aspects followed by C.

Operative time and duration of hospital stay

When comparing the operative time among the different modalities of management, group A and group B had average time of 1-1.5 hours. Group C had over 1.5 hours and group D had the longest time of over 2 hours. The postoperative time was 6-9 and 6-8 days in groups A and B respectively. Group C had 8-10 days. Group D had a longer duration of more than 10 days.

Table 6: Management.

Groups	Management	N	%
Group A	Surgical intervention at the time of presentation	60	51.7
Group B	Successful conservative management followed by interval appendicectomy	32	27.6
Group C	Failed conservative management followed by emergency surgical intervention with appendicectomy.	16	13.8
Group D	Failed conservative management followed by emergency peritoneal lavage and drain placement and later followed by interval appendicectomy.	8	6.9

Table 7: Complications of appendicectomy for appendicular mass.

Complication	Group A (n=60)	Group B (n=32)	Group C (n=16)	Group D (n=8)
Intraoperative adhesions	0	2	3	3
Surgical site infection	6	3	2	3
Wound dehiscence	1	1	2	2
Caeco-cutaneous fistula	0	0	4	0
Caeco-vesical fistula	0	0	0	0

Table 8: Operative time and duration of hospital stay.

Management	Group A	Group B	Group C	Group D
Operative time (hour)	1-1.5	1-1.5	>1.5	>2
Post-operative hospital stays (days)	6-9	6-8	8-10	>10

DISCUSSION

The life time opportunity of developing acute appendicitis is 8.6% in males and 6.7% in females.[6] Approximately 7% of them developed appendicular mass due to delay in patient seeking medical advice and inappropriate antibiotic therapy.[7,8] Mass Usually occurs after 48-72 hours due to Natural protective mechanism of

wrapping of omentum around the inflamed appendix entangling small bowel thereby isolating it from abdominal cavity preventing spread of infection to the general peritoneal cavity.[9-11]

In patients who presented in less than three days, the surgical planes were well defined, operative time taken, post-operative complication and duration of hospital stay were less.

In patients presenting late, conservative management (Ochsner Sherren regimen) was considered and a proportion of patients who recovered from the acute stage underwent interval appendicectomy, whereas emergency surgical intervention was done in patients where the conservative management failed.[12,13]

However, in patients who presented more than 3 days, the amalgamated, oedematous bowel and omentum made the adhesiolysis and dissection of mass difficult.[14,15] This limited the surgical intervention to drainage alone and interval appendicectomy was done to ensure safety to the patients.[16,17]

In our institute we prefer conservative management followed by interval appendicectomy as it avoids difficult surgery, morbidity, prolonged hospital stay, high economic loss and stress to the patients.[18]

CONCLUSION

On comparing the different modalities of intervention, Conservative management followed by Interval Appendicectomy is quite effective and safe method of treatment, with less operative difficulties and better outcome.

Based on our study, patients presenting with appendicular mass can be first recommended the option of conservative management followed by interval appendicectomy. Emergency surgery can be proceeded only in those patients where it is inevitable.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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