ORIGINAL RESEARCH ARTICLE

A Study on Need of Emergency Laparascopic Appendicectomy for Appendiceal Masses

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A B S T R A C T

Introduction: Appendiceal mass management is a controversial; Immediate appendicectomy is taking a surge over traditional interval appendicectomy. This study was conducted with an aim to know the study various clinical presentations of appendiceal mass and to know the efficacy of surgery among patients presenting with appendiceal mass.

Material and Methods: This study is a prospective, clinical study conducted from June 2017 to September 2018 on 118 patients. After taking history and examination of study population, advised to undergo haematological & radiological investigations.

Results: 65.2% had simple mass, 17.7% showed adhesions, 10.1% showed perforated appendix and 6.7% showed loculated abscess. Intra operative difficulties faced were 20.3% difficulty in localization of appendix, 15.2% difficulty in adhesiolysis, 5.9% minor trauma to bowel, 1.6% minor bleeding and no intestinal perforations happened. Among Post operative complications observed, 16.9% patients had infection, 15.2% had delayed bowel recovery, 5.9% had faecal fistula.

Conclusion: For management of appendicular mass, emergency surgery helps to reduce large financial costs at healthcare centres and reduce economic burden on patients and their families.

Keywords: Appendicular Mass, Surgery, **Appendicectomy**

INTRODUCTION

Appendicular mass is an inflammatory mass constituting of localization of inflamed appendix, adjacent viscera and greater omentum. This mass occurs after 3 to 5 days after an attack of acute appendicitis.

This complication occurs in 2-6% of population presenting with acute appendicitis.[1] During acute appendicitis inflammation may sometimes fixed as a inflammatory mass (inflammatory phlegmon) or Loculated pus due to persons own defence mechanisms. It can present as a palpable mass few days after the onset of symptoms.[2]

Appendiceal mass management is a controversial; Immediate appendicectomy is taking a surge over traditional interval appendicectomy, however it has some difficulties during operation due to distorted inflamed tissues. So, it is not accepted by few surgeons, still they continue to perform interval appendicectomy.[3]

Interval appendicectomy has resulted in 10-20% of failures and resulted in complications such as abscess, perforation peritonitis, abscess.[4] Disadvantages of this traditional approach are need for readmission for another acute episode and increased chance of misdiagnosis which is adding considerable morbidity.[5]

Early surgical intervention of appendiceal mass is a safe method, reduce hospital stay, readmission in hospitals.[6] Laprascopic invention is a great step among new technologies, it is a safe, feasible method and also reduce economic burden on patients; now a day's large number of surgeons prefer lap appendicectomy for acute appendicitis and appendicular mass.

This study is conducted with an aim to know the study various clinical presentations of appendicular mass and to know the efficacy of surgery among patients presenting with appendicular mass.

MATERIAL AND METHODS

This study was a prospective, clinical study conducted from June 2017 to September 2018 on 118 patients presenting to Outpatient or emergency departments in the Department of General Surgery in Government Medical College, Anantapuram.

Inclusion Criteria

Patients of all age groups and both sexes

Presenting with signs and symptoms of Appendicular mass

Appendicular mass diagnosed by radiology imaging either USG or CT

Exclusion criteria

Patients unfit for surgery

Patients with signs of diffuse peritonitis

Study population clinical history pertaining to age, sex, personal habits, family history, socioeconomic status, presenting complaints was recorded. After taking history, patient is examined for general physical examination and systemic examination.

Patients were advised to undergo preliminary haematological and urine investigations and Confirmation of diagnosis was done by clinical findings and radiological investigations. These patients were followed up by a variable period of time.

STATISTICAL ANALYSIS

This full data related to study subjects was entered into spread excel sheet. Results were analysed and tabulated. Statistical analyses were expressed as numbers, percentages.

RESULTS

In the present study, out of 118 patients with appendiceal mass, majority of them were observed in the age group of 21-30 years i.e., 49.1% (58/118), followed by 31-40 years of age i.e., 22.03% (26/118), <20 years of age i.e., 20.3% (24/118) and >40 years i.e., 8.4% (10/118). Out of 118 patients 76 (64.4%) were males and 42 (35.5%) were females.

All the patients presented with abdominal pain (100%), followed 87.2% had anorexia, 72.03% had nausea/vomiting, 46.6% had fever, 18.6% suffered with altered bowel habits and 2.5% complained of abdominal distension. On clinical assessment 100% patients had RIF tenderness, 64.4% showed rebound tenderness and 54.2% had palpable mass (Table 1).

65.2% had simple mass, 17.7% showed adhesions, 10.1% showed perforated appendix and 6.7% showed loculated abscess (Table 2 & Fig 1).

Intra operative difficulties faced were 20.3% difficulty in localization of appendix, 15.2% difficulty in adhesiolysis, 5.9% minor trauma to bowel, 1.6% minor bleeding and no intestinal perforations happened (Fig 2).

Among Post operative complications observed, 16.9% patients had infection, 15.2% had delayed bowel recovery, 5.9% had faecal fistula. No failure in treatment noted in these cases (Fig 3).

DISCUSSION

After acute attack of appendicitis, a tender mass form in the right iliac fossa on 3rd day. This mass is composed of greater omentum, edematous caecal wall, and edematous portions of small intestine. Mass becomes circumscribed on 4th or 5th day, as rigidity passes off its periphery it can be defined clearly Between 5th to 10th day, the swelling becomes larger and can result in abscess collection. Slowly this mass becomes smaller and subsides as the inflammation resolves.[7]

Treatment of appendicular mass is controversial; however, there are several management options like non surgical treatment, interval appendicectomy, and emergency appendicectomy. Each management option has its own advantage and disadvantage. Successful Non surgical treatment of appendicular mass helpful to patient as there is no need to undergo surgical intervention; but it may hide true diagnosis in few cases and also the underlying diseases such as cancer or crohn's disease may get delayed.[8]

Interval appendicectomy is a traditional method followed to avoid difficulties during operation due to inflammatory tissues; usually operative finding is normal status of appendix. The Disadvantages are need second admission, more complications, more morbidity and cause economic burden to patient.[9,10] Immediate appendicectomy maybe technically little problematic due to distorted inflammed tissues, adhesions of adjacent viscera and difficulty in closure of damaged tissues; however, it is a safe, feasible, less complications and helps for final diagnosis.[11,12]

In the present study, out of 118 patients with appendicular mass, majority of them were observed in the age group of 21-30 years i.e., 49.1% (58/118). Out of 118 patients 76 (64.4%) were males and 42 (35.5%) were females. Bahram MA et al[13] did a 4 year period randomized study, reported the mean age patient as 24±8.76. Bulent Kaya et al[14] observed the mean age of patient is 37.23±15.60 and male predominance observed (53.2%). Al- Samarrai et al[15] documented 68% of males had appendicular mass.

65.2% had simple mass, 17.7% showed adhesions, 10.1% showed perforated appendix and 6.7% showed loculated

Symptoms	No. of patients	Percentage	Signs	No. of patients	Percentage
Abdominal Pain	118	100%	RIF tenderness	118	100
Nausea/Vomiting	85	72.03%	Rebound tenderness	76	64.4
Fever	55	46.6%	Palpable mass	64	54.2
Anorexia	103	87.2%			
Altered bowel habits	22	18.6%			
Abdominal distension	3	2.5%			

Table-1: Clinical features of patients with appendicular mass

Findings	No. of patients	Percentage
Simple mass	77	65.2%
Loculated abscess	8	6.7%
Adhesions	21	17.7%
Perforated appendix	12	10.1%

Table-2: Findings during operation

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abscess as per this study. In similar to this study, Malik Arshad et al[16] observed 72.7% had simple mass, 9.1% perforated appendix, 8% abscess, 5.7% adhesions. Shindholimath VV et al[17] noted 36.8% of perforated appendix, 31.5% appendicular abscess, 26.3% gangrenous appendix and 1 case of Loculated pus (5.2%).Whereas Samuel M et al[18] reported higher percentage of cases had abscess i.e., 79.2% and adhesions in 81.3%.

Among Post operative complications observed, 16.9% patients had infection, 15.2% had delayed bowel recovery, 5.9% had faecal fistula. No failure in treatment noted in these cases in this study. Malik Arshad et al[16] reported 21.6% post operative complications and Samuel M et al[18] reported no post operative complications. Zaza Demetrashvili et al[19] documented out of 48 patients with appendiceal mass and abscess only 4 patients had post operative complication due to infection.

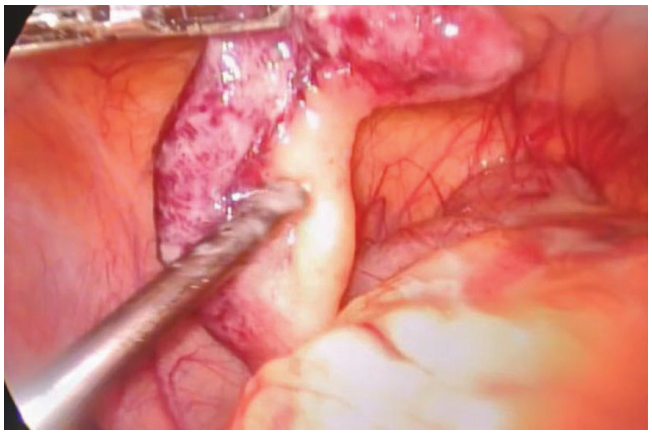

Figure-1: Showing Inflammed appendix with adhesions

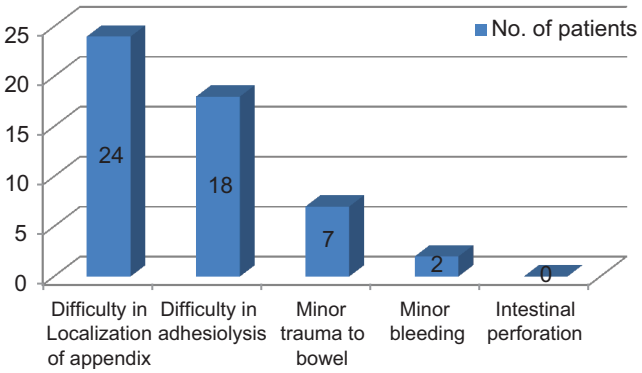

Figure-2: Showing intra operative difficulties

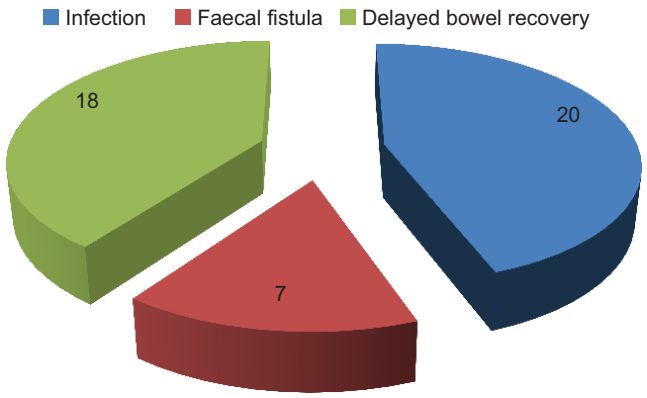

Figure-3: Showing postoperative complications incidence

Chin et al[20] mentioned that in their study they observed morbidity rate of 15.7% and they found laparoscopic appendicectomy is a safe and feasible study. Richards et al[21] did a study on perforated appendicitis, observed as laparoscopic study is a safe method with fewer complications, reduced hospital stay and lower hospital cost than open surgery. Shindholimath VV et al[17] did a study on laparoscopic study, stated that all appendiceal mass patients were treated successfully by laparascopic surgery. In contrast to our study Valla et al[22] recommended open appendicectomy for appendiceal masses.

Bhumika Jayantilal Patel et al[23] stated that among interval appendicectomy patients average length of hospital stay was 11 days whereas in emergency surgery cases hospital stay was 4 days. Poor patient compliance, failure of treatment, residual collections/abscess, readmission and failure to locate appendix on delayed appendicectomy were problems faced in Interval appendicectomy.

Senapathi PS et al[24] opted laparascopic appendicectomy for 10 patients with appendicular mass and 50 patients with appendicitis. They didn't found any statistical difference in terms of operative time (median [interquartile range]: 45 [36-60] vs 40 [25-50] min, p = 0.085) and postoperative hospital stay (median [interquartile range]: 2 [1-2] vs [1-2] days, p = 0.1).

Goh BK et al[25] studied on 88 patients performed LA for 22 patients with appendiceal mass, 36 patients with simple appendicitis, 23 patients with other complicated appendicitis and 7 patients with normal appendix. Patients who underwent early LA for an appendiceal mass had a statistically significant (P < .05) with regards to longer operating time (median, 103 minutes; interquartile range, 90-151 minutes, vs median, 87 minutes; interquartile range, 71-112 minutes), prolonged time to ambulation (median, 2.0 days; interquartile range, 2-2.5 days, vs median, 1.0 days; interquartile, 1-2 days), increased time to resumption of diet (median, 4 days; interquartile, 3-5 days, vs median, 2 days; interquartile, 2-3 days), and longer postoperative stay (median, 6.0 days; interquartile, 5.5-6.5 days, vs median, 4.0 days; interquartile, 3-5.5 days) compared with patients presenting with appendicitis without mass formation.

Zaza Demetrashvili et al[19] did a comparative study of emergency appendicectomy and interval appendicectomy on patients with appendicular mass and abscess. They have observed there is no statistical difference of both groups in terms of operation time without colonic resections, postoperative complications and the post operative hospitalization period. The only parameter found statistically reliable between two groups was operation time with colonic resections (P=0.04).

Garg P et al[26] stated that there is chance of mismanagement conservatively, may miss diagnosis of certain conditions like intussusceptions and carcinoma ceacum.

Most of the studies concluded that immediate appendicectomy and interval appendicectomy have shown the same results, statistically there is no much difference. Selection of procedure depends on clinical situation,

investigation related. In each particular case therapeutic approach is different.

CONCLUSION

For management of appendicular mass, emergency surgery helps to reduce large financial costs at healthcare centres and reduce economic burden on patients and their families. Emergency surgery is a safe, feasible method. CT scan is a useful method to diagnose this condition. Immediate appendicectomy helps to ruel out other diagnoses, alleviates needs for readmission, time saving, shortens hospital stay.

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