



Review Article

EARLY APPENDICECTOMY IN APPENDICULAR MASS- REVIEW OF LITERATURE

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Abstract

The management of appendicular mass is a matter of controversy. Traditional management has been conservative, with interval appendicectomy performed weeks after the mass had resolved. The need for interval appendicectomy (I.A) after successful conservative management of appendicular mass has recently been questioned. Furthermore, emergency appendicectomy for appendicular mass is increasingly performed with equal success and safety to that performed in non-mass forming acute appendicitis. The routine adoption of emergency appendicectomy in patients presenting with appendicular mass obviates the need for a second admission and an operation for I.A. It also abolishes misdiagnoses and deals promptly with any unexpected ileo-cecal pathology. Early emergency appendicectomy is becoming the standard of care for appendicular mass.

Keywords: Acute appendicitis, appendicular mass, conservative management, appendicectomy.

Introduction

Acute appendicitis remains the commonest cause of acute abdomen in teenagers requiring surgical intervention. Patients presenting late in the course of acute appendicitis are complicated by the development of an inflammatory mass in right iliac fossa in 2%-10% of cases¹. The mass usually forms 48-72 hours after the first symptoms of acute appendicitis. This mass results from a walled-off appendicular perforation. As a natural protective mechanism, the omentum and small bowel wrap up the inflamed appendix in an attempt to prevent infection from spreading by isolating the inflamed organ from rest of the abdominal cavity.

Ultrasonography has been advocated as the diagnostic modality of choice, revealing the diagnosis in 70% of cases, however, contrast-enhanced computerized tomography (CT) scanning is far superior¹. The treatment which was introduced by Ochsner in 1901 advocating a conservative regimen has proved popular over the years and has been shown to be safe and effective¹. It allows the acute inflammatory process to subside in more than 80% of cases before interval

appendicectomy (I.A) is performed some 8-12 week later. However, some management issues of appendicular mass such as the need for I.A after successful conservative treatment, and emergency appendicectomy for a 'hot' appendix mass have recently surfaced with no general agreement on the appropriate line of management.

Discussion

For appendicular mass, a number of treatment options ranging from conservative to aggressive approaches are available. Currently there are four modes of treatment practiced all over the world -

1. The conventional mode of management includes an initial conservative treatment assuming the patient is well and settles, followed by an interval appendectomy after a period of 8-12 weeks.
2. A totally conservative treatment without interval appendectomy. This approach was introduced after the need for an interval appendectomy was questioned in a number of reports.
3. An early and aggressive approach favouring early appendicectomy in appendicular mass.

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4. Laparoscopic management of the appendicular mass is the most recent advancement in the treatment of appendicular mass.

Traditionally it was believed that surgery during the phase of acute appendicitis with a mass was potentially dangerous and could lead to life threatening complications because of oedema and the fragility of important structures like the terminal ileum and caecum⁴. The surgeon may do more harm than good considering the fact that the problem was contained and resolution might follow. The Ochsner-Sherren regime was popularized by Oschner². The concept has enjoyed a unique position over many years as the standard treatment for the appendicular mass.

The essential components are as follows:

- ◆ Nothing by mouth for an initial 24-48 hours while the patient is kept on intravenous fluids.
- ◆ Intravenous antibiotics are administered.
- ◆ Regular monitoring of vital signs as well as measurement of the size of the mass.
- ◆ If the patient's general condition improves, the size of the mass reduces and the fever and anorexia subside, the patient is usually allowed liquids orally and then soft diet. If this is tolerated discharge home is considered. After 8-12 weeks an interval appendicectomy is performed.
- ◆ On the other hand, if the condition of the patient deteriorates, the size of the mass increases, pulse rate increases or general peritonitis develops then the conservative management is curtailed and the patient is considered for operation.

One of the controversial management issues is the need for I.A after successful conservative treatment. A survey of 663 surgeons in North America revealed that I.A is routinely performed by 86% of the surveyed surgeons³. The most cited reason is the risk of recurrent appendicitis which is reported to occur in 21%-37% of cases³. Another questionnaire survey of 90 consultant general surgeons in England (response rate: 78%) revealed that 53% of surgeons perform I.A routinely some 6-8 weeks after resolution of the mass; mainly because of concerns about symptom recurrence⁴. The specialist registrars are less likely to offer patients routine I.A after successful conservative management than their consultants ($P < 0.05$) which may reflect a change in the attitude of younger surgeons towards I.A⁵.

Dixon et al⁶ reviewed the characteristics of patients who had recurrence of symptoms following conservative management⁶. Mean time to recurrence was five months following the initial episode. They demonstrated that when recurrence of appendicitis occurs this followed a milder clinical course. The recurrences

were treated successfully with both operative and non-operative approaches and were not associated with any significant mortality or morbidity. There is, therefore, good evidence, that the risk of recurrent acute appendicitis following successful conservative management is low; between 5% and 14%. In the minority of patients whose symptoms do recur, this usually occurs within one year. They concluded that conservative management without interval appendicectomy was the most appropriate management for appendix mass and that immediate appendicectomy should only be used when initial conservative management fails^{7,8}.

Misdiagnosis of appendicular tumor or colonic tumor can be disastrous in patients with appendicular mass. If I.A is not performed after successful conservative treatment, the fear of missing hidden pathologies such as cecal cancer, Crohn's disease and ileo-caecal tuberculosis masquerading as an appendicular mass becomes an important issue. Thus early surgery for appendicular mass also has the added advantage of avoiding delays in diagnosing other hidden pathologies masquerading as appendix mass⁹. In a recent retrospective review of 106 patients, 17 (10.3%) patients had their diagnosis changed during follow-up; 5 patients (3%) were found to have colon cancer¹⁰.

Furthermore, this emergency approach obviates the need for another hospital admission for interval appendicectomy some 8-12 weeks later. In a prospective nonrandomized study, it has been shown that early surgical intervention to be more beneficial over the conservative approach in a cohort of 82 patients especially in term of hospital stay which was significantly shorter in the emergency group (4.8 vs. 13.2 days; $p < 0.05$)¹¹.

It was found that early emergency appendicectomy for appendicular mass is feasible and safe; moreover, its operative time and hospital stay are comparable to those of appendicectomy performed for non-mass forming appendicitis. Another major advantage of emergency surgery is that it obviates the need for a second hospital admission. Early appendicectomy in appendicular mass is cost-effective as it is associated with shorter hospital stay, shorter duration of iv antibiotic. With the advent of antibiotics designed to prevent the growth of anaerobes, early appendectomy can now be carried out without complication.

Conclusions

Emergency appendicectomy for appendicular mass is emerging as an alternative to conventional conservative treatment. It is feasible, safe, and cost-effective, eliminates risk of recurrent appendicitis and eliminates the need for re-admission for interval appendectomy thus reduce total hospital stay, allowing early diagnosis and treatment of unexpected pathology.

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