Appendicular Mass - Our Experience in a Tertiary Care Hospital, Andhra Pradesh, India

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ABSTRACT

BACKGROUND
Appendicular mass is a well-known complication of acute appendicitis. It is conventionally treated conservatively followed by interval appendectomy. This prospective clinical study was done to evaluate the various ways of presentation, etiological evaluation and management of appendicular mass.

METHODS
A prospective, nonrandomized study was conducted over a 3-year period evaluating 272 cases of appendicular masses. All cases were evaluated from their first appearance in emergency department till the end of appropriate treatment. They were subjected to early resuscitation, laboratory evaluation and imaging of condition with ultrasound abdomen.

RESULTS
Among the 272 cases, 39 were diagnosed as abscess for which emergency drainage was done. One forty-two cases were managed by conservative management followed by interval appendicectomy. Non resolving appendicular masses were evaluated for tuberculosis or malignancy by CECT abdomen, colonoscopy. Among these non-resolving masses, 67 were diagnosed to have tuberculosis of ileocecal junction leading to appendicular mass, 23 were diagnosed to have adenocarcinoma of cecum and appendix. We noticed only one case of carcinoid tumour which belonged to non-resolved group. Mortality is zero.

CONCLUSIONS
Appendicular mass is one of the commonest presentations of various aetiologies that affect ileocecal junction. Because of endemicity of tuberculosis and risk of malignancy in certain age groups, these should be kept in mind while evaluating these patients.

KEYWORDS
Appendicular Mass, Conservative Management, Interval Appendicectomy, Tuberculosis of Ileocecal Junction
BACKGROUND

Acute appendicitis i.e. acute inflammation of the appendix from mild inflammation of mucous membrane to gangrene, perforation and peritonitis is the most common acute surgical condition. 1,2,3 Regardless of the cause it is associated with definite morbidity and mortality if not managed properly. These complications are more at the extremes of age and in immunocompromised patients. 3,4 The definite treatment of acute appendicitis is appendicectomy to avoid complications. 4 If timely appendicectomy is not done due to any reason 2-6% of the patients develop a mass as one of the early complications. 4 On the third day (rarely sooner) of commencement of acute appendicitis, a tender mass can frequently be felt in right iliac fossa. This mass is composed of omentum, oedematous caecal wall and oedematous loop of ileum. The treatment of this appendicular mass is controversial and there are several management options. 5 Traditionally, those patients are managed conservatively followed by interval appendicectomy 4 to 6 weeks later, believing that an early appendicectomy in these cases is hazardous, time consuming and may lead to life threatening complications such as faecal fistula. 6 Others prefer an operative intervention, including the drainage of the mass and conservative treatment, and later an interval appendicectomy depending on the results of colonoscopy or barium enema which could help in excluding other underlying lesions. 7

The purpose of this study is to highlight the salient causes of appendicular masses and its outcome in terms of morbidity and mortality.

METHODS

This study was conducted at King George Hospital (KGH) in Visakhapatnam, the capital of North Coastal Andhra Pradesh, during the calendar years 2013-2015. KGH is a 1085 bedded tertiary care hospital rendering services to the people of North Coastal Andhra Pradesh and adjacent districts of Orissa and Chhattisgarh. The hospital has a 24 hours casualty department, 20-bedded surgical intensive care unit, several open wards with capacity for around 250 surgical patients, and equipped with two emergency operating rooms. 8 A retrospective study of 272 patients of appendicular mass was done over a period of last two years (September 2016 - August 2019).

Patients diagnosed to have acute appendicitis which is complicated by appendicular mass diagnosed by clinical examination and abdominal ultrasound examination were included. Patients with acute appendicitis in its early stages without mass were not included. Other causes of right iliac fossa masses were excluded.

All cases were studied in terms of clinical presentation, radiological evaluation, operative findings and postoperative course. Data was collected from outpatient department, casualty records, emergency operation theatre, postoperative ward records, and death records. Data includes gender, age, date of admission, date of surgery, date of discharge or death, date of onset, and type of symptoms, presence of guarding, rebound tenderness, or rigidity, abdominal quadrant (s) affected, vital signs on presentation including heart rate, blood pressure, and respiratory rate, operative diagnosis, and surgical procedure. The results of initial complete blood counts, results of abdominal ultrasound, x-ray erect abdomen, biochemical values (creatinine and potassium values) were also taken into consideration. Cases not resolved by initial non operative management were evaluated by CECT abdomen and colonoscopy in view of malignancy and tuberculosis.

RESULTS

Of the 272 cases that were studied, mean age of presentation was 29.35 years (range from 7 to 89 years) with majority of patients being males 152 (55.88%) and the remaining 120 (47.61%) being females. The male predominance over female in ratio of male/female-1:2: 1. Majority of the patients 131/272 were in 21-30 years age group (48.16%) followed by 74/272(29.36%) in >40 years age group and 37/272 (13.60%) were in age group 10-20 years. (Figure 1).

Majority of the patients (218/272) presented with classical pain of acute appendicitis, 154 patients with vomiting, fever in 218, abdominal distension in 180 and altered bowel habits in 42, and 12 patients presented with shock due to septicemia. 11 patients gave past history of tuberculosis all are which is treated according principles of RNTCP.

<table>
<thead>
<tr>
<th>Clinical Presentation</th>
<th>Patients Affected</th>
</tr>
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<tbody>
<tr>
<td>Classical migratory pain of abdomen</td>
<td>218</td>
</tr>
<tr>
<td>Fever</td>
<td>218</td>
</tr>
<tr>
<td>Vomiting</td>
<td>154</td>
</tr>
<tr>
<td>Altered bowel habits</td>
<td>42</td>
</tr>
<tr>
<td>Abdominal distension</td>
<td>180</td>
</tr>
</tbody>
</table>

Table 1. Clinical Presentation

All cases of appendicular mass were initially treated according Ochsner Sheeren regimen. The regimen includes regular clinical evaluation of symptoms and vitals,
assessment of abdominal lump size. Patient was put on liquid diet and parental broad-spectrum antibiotics covering gram negative and anaerobes.

Among the 272 cases, 142 were successfully treated with Ochsner Sherren regimen alone. And all these patients were undergone interval appendectomy after 6 weeks of resolution. The non-resolving cases (130/272) were further evaluated with ultrasound and CECT abdomen, colonoscopy in view of tuberculosis and malignancy.

Thirty-nine cases (39/130) of non-resolving cases were diagnosed to have appendicular abscess as a complication of appendicitis. These cases were diagnosed with ultrasound abdomen as a failure of non-operative management. All these cases underwent emergency drainage of abscess followed by interval appendicectomy. Emergency appendicectomy was not done in these cases because of high chances of postoperative fistula and other complications.

Sixty-seven cases of appendicular masses which belong to non-resolving group were diagnosed to have tuberculosis as aetiology of mass by CECT abdomen and colonoscopy biopsy. All were put on anti-tubercular regimen for 6 months under RNTCP guidelines. Eleven of these 67 cases were known case of Koch aetiology and were treated for 9 months under category 2 of RNTCP.

Out of these 130 cases of non-resolving group 24 were diagnosed to have malignant pathology on biopsy and imaging. All these underwent right hemicolectomy. Postoperative pathology shows 20 were having adenocarcinoma of cecum and 1 case was diagnosed to have carcinoid tumour and 3 were diagnosed to have chronic inflammatory pathology.

<table>
<thead>
<tr>
<th>Outcomes of Treatment</th>
<th>Number of Patients</th>
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<tbody>
<tr>
<td>Resolved by Conservative Management</td>
<td>142</td>
</tr>
<tr>
<td>Non-Resolving Cases</td>
<td>130</td>
</tr>
<tr>
<td>Appendicular abscess</td>
<td>39</td>
</tr>
<tr>
<td>Tubercular pathology</td>
<td>67</td>
</tr>
<tr>
<td>Malignant pathology</td>
<td>21</td>
</tr>
</tbody>
</table>

**Table 2. Outcomes of Appendicular Masses**

**DISCUSSION**

Acute appendicitis is a very common surgical cause of acute abdomen. With prolongation of duration of symptoms, in some patients, appendicular mass develops. In the present study appendicular mass was found in 11.7% of all cases of acute appendicitis whereas other study conducted in different places the incidence ranges from 2-6%.

The incidence is found to be higher in our study, as reason may be the late presentation of the patients from the areas where emergency medical facilities are not available or may be due to financial problem or ignorance where patients either do not seek medical advice or take the analgesics over the counter. The maximum patients in this study, i.e. 131 (48.16%) were between the age group of 21-30 years, however the age varied from 7-89 years suggesting any age group prone to develop mass. The male to female ratio is 1.26:1 which is similar to other studies where male predominance is found. Majority of the patients who presented with lump had symptoms between 4-10 days. In other studies, it was found to be 3-4 days. Reason might be the patient in our region coming from distant places and habit of getting treatment by local practitioner. During the conservative management, appendicular abscess may develop in few cases. In the present study, appendicular abscess developed in 39(14.3%) of the patients who were managed with either ultrasound guided drainage or laparotomy drainage. In our study, 30(11.02%) cases returned with repeat attack of acute appendicitis and all of them underwent successful appendicectomy. A meta-analysis conducted over a 13 years period, including 1012 patients concluded that the interval appendicectomy was not justified, as the majority (95%) of the patients managed conservatively will not develop recurrence. The success rate of initial conservative management varies between 76-97%.

In our study 142 patients (52.22%) out of 272 were successfully treated conservatively. So our success rate of conservative management was 52.22% was not comparable to other studies because of high incidence of tuberculosis in our area. According to the results of our study, most of the patients were managed successfully by conservative approach with only few needing surgery for complications.

**CONCLUSIONS**

Conservative management of an appendicular mass is a well-known entity. The patient is put on Ochsner Sherren Regime and stays in the hospital for 7 to 10 days. All the patients do not respond uniformly. In a significant number of patients, the regimen fails, and surgical intervention has to be made rather in a difficult situation. Misdiagnosis in the form of ileocaecal tuberculosis, carcinoma of caecum and intussusceptions is another enigma.

**REFERENCES**


