

## Appendicular Mass at El Obeid Hospital, Western Sudan

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### ABSTRACT

**Background:** Acute appendicitis is a common disease but some patients were only diagnosed after they develop serious complications like appendicular mass.

**Objectives:** The objective was to study the clinical presentations, treatment and outcomes of patients with appendicular mass seen at El Obeid Hospital, Western Sudan.

**Materials and Methods:** In a prospective study the information about all patients with appendicular mass who were admitted to the wards of the University Surgical Unit at El Obeid Teaching Hospital, Western Sudan during the year 2012 were collected in a pre-designed questionnaire. The data were analyzed using SPSS PC packages version 17.5.

**Results:** There were one hundred and three patients; 58 males and 45 females. The mean age was 29.5 years  $\pm$  S.D. 17.8. Most of the patients (76%) came from rural areas. The delay in time of presentation varied from 3 days to two weeks, but the majority (93%) visited a clinical setting where misdiagnosed or mismanaged. 85% of the patients had appendicectomy (emergency or elective), 10% had drainage of appendicular abscess and 2% underwent right hemi-colectomy. 3% of the patients failed to re-appear for elective operation. Post-operative complications were fever (4.8%), wound infection (5.8%), paralytic ileus (1.9%) and faecal fistula (0.9%). There was no mortality among this series.

**Conclusions:** Most of the patients with appendicular mass were misdiagnosed or mismanaged before being admitted to the surgical wards. Awareness of the health providers in this community about acute appendicitis, its complications and its management needs to be revised.

**Key words:** Acute appendicitis, missed diagnosis, appendicular mass.

Acute appendicitis is a common surgical emergency in our community; accounting for 63% of young patients with acute abdominal pain seen in the hospital emergency rooms<sup>1</sup>. It was reported that appendicular mass which is the result of a walled-off perforation of the appendix, develops in 2-6% of cases following acute appendicitis<sup>2</sup>. However; in a previous study from this community it was found that appendicular mass accounted for one third of the patients admitted as acute appendicitis<sup>3</sup>. Regrettably these patients face higher rate of morbidity and even mortality. In this study we report our local experience in the management of patients admitted with appendicular mass and discuss their outcomes.

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### MATERIALS AND METHODS:

This was a prospective study in which all patients with the diagnosis of appendicular mass who were seen in the emergency wards of the University Surgical Unit at El Obeid Hospital during the year 2012 were included. The clinical data of the patients were entered into a pre-designed questionnaire sheet. The diagnosis was clinical. Investigations for the patients were complete blood counts (CBC), blood urea level and urinalysis. In obese, elderly patients or multiparous ladies abdominal ultra-sound scan or computerized tomography (CT) scans were done. Also, in such patients thorough abdominal palpation under general anaesthesia was practiced before commencing for appendicectomy.

All the patients were put on conservative treatment according to following guidelines;

1. Initial fasting on intravenous fluids and only allowed oral intake after nausea, pain and fever subside.

2. Intravenous antibiotics (metronidazole 7.5mg/kg body weight and cefuroxime 30 mg/kg body weight each 8 hourly).

3. Patients who continued on symptoms or showed clinical signs of local or generalized peritonitis were offered emergency operations.

4. Patients who respond to treatment were discharged with a card and a phone number to review for elective appendicectomy after six weeks.

Most of the patients were followed up from six months to one year after discharge. The data were later analyzed with SPSS PC Packages version 17.5. Exclusion criteria were patients who had gynaecological pathology or those whose records were deficient.

### RESULTS:

During the study period there were 103 patients admitted with the diagnosis of appendicular mass. Fifty eight (56%) were males. The mean age was 29.5 years  $\pm$  S.D. 17.8. Most of the patients (76%) came from rural areas. Ninety three percent of patients received anti-malaria and or anti-biotic before seen at our unit. The delay in time of presentation varied from 3 days to two weeks and the presenting symptoms were lower abdominal pain, vomiting, fever and diarrhea. On physical examination the findings were ill looking patient (98%), right iliac fossa mass (82%), abdominal tenderness (78%), and rigidity (4%).

Eighty five percent of the patients had appendicectomy, 10% had drainage of appendicular abscess, 2% underwent right hemi-colectomy and 3% of the patients failed to re-appear for elective appendicectomy. Post-operative complications were fever (5 cases), paralytic ileus (two cases), wound infection (six cases) and faecal fistula (one case). There was no recurrence or mortality among this series.

### DISCUSSION:

In this study three out of every four patients were from distant rural areas and the delay in presentation to our unit varied from three days to two weeks. Most of the patients

presented to the emergency room with critical clinical situation at odd times of the day when only junior staff with limited surgical experience and little backup in the field of general anaesthesia or intensive care units were available. Hence the traditional conservative approach of Ostein Sherrin regimen was adopted<sup>5</sup>. This delay in presentation is partly due to the wide practice of self medication<sup>6</sup>, the irrational use of over counter antibiotics<sup>7</sup> and the assumption among inhabitants that a febrile condition is often malaria. In our study many patients (93%) visited a rural primary health setting (medical assistant or nurse) but due to the poor awareness about acute appendicitis and its seriousness among the health providers in this area, the diagnosis was missed or the patients were mismanaged<sup>3</sup>. In a similar study at a rural hospital in Nigeria 43% of the patients presented more than a week from the onset of symptoms and conservative treatment followed by interval appendicectomy was adopted in 70% of the patients with good outcomes<sup>8</sup>.

The situation is different in the developed countries or where the health delivery system is more advanced. In a report from Netherlands it was concluded that interval appendicectomy was found unnecessary in patients who responded well to initial conservative treatment with recurrence rate of 3%<sup>9</sup>. The role of interval appendicectomy was questioned in another study from Turkey where a recurrence rate of 14.6% after conservative treatment was reported<sup>10</sup>. These findings were later supported from a study from Taiwan, although their recurrence rate after conservative treatment was 25.5%, mostly (83.3%) recurred within six months after discharge<sup>11</sup>. The early surgical intervention in patients of appendicular mass we were practicing in our unit (within six weeks) was not associated with any recurrence. The same procedure was also adopted in other similar centres in the developing world<sup>12-14</sup>. In their review Garba and Ahmed concluded that initial conservative approach with interval appendicectomy was found to be the best

management to recommend in a developing African community<sup>15</sup>. Due to the expected future exacerbations or relapses or the remote possibility of caecal malignancy (2% in this series), meticulous follow up is needed till interval appendicectomy is performed six weeks later. Although abdominal ultrasound scan can be useful in the hands of expert operators, more sophisticated investigations to exclude malignancy like computerized tomography scan or magnetic resonance have better diagnostic yield but they were not easily accessible in our environment.

Immediate emergency appendicectomy for appendicular mass was described to be even more useful and appropriate but always needs the availability of experienced surgeons<sup>16-19</sup>. However, the current best practice for asymptomatic patients is not well agreed on<sup>20</sup>, due to differences in the health facilities in different communities. A study carried out in an advanced health delivery system in the United Kingdom failed to explore a definite evidence for a specific protocol for the management of appendicular mass<sup>21</sup>.

#### CONCLUSIONS:

Appendicular mass in our community develops mainly due to mis-diagnosed or mis-managed acute appendicitis. The wide variety of health providers practicing within our catchment area need to be re-educated and their performance need to be closely observed regarding adherence to national protocols and guidelines governing the management of such a common clinical problem. Nevertheless conservative management for the appendicular mass with interval appendicectomy within six weeks is a safe and wise approach in our developing rural society.

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