

East African Medical Journal Vol. 89 No. 10 October 2012

APPENDICITIS IN UNIVERSITY OF PORT HARCOURT TEACHING HOSPITAL, NIGERIA

A. Dodiya-Manuel, FWACS, Lecturer and O. F. Koroye, FWACS, Lecturer, Department of Surgery, University of Port Harcourt Teaching Hospital, River State, Nigeria.

## APPENDICITIS IN UNIVERSITY OF PORT HARCOURT TEACHING HOSPITAL, NIGERIA

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### ABSTRACT

**Background:** Acute appendicitis is the most common cause of acute abdomen worldwide with increasing incidence in developing countries. The diagnosis is mainly clinical and wound infection remains the most common post-operative complication.

**Objective:** To determine the pattern of presentation of acute appendicitis.

**Design:** Hospital based retrospective study.

**Setting:** Department of Surgery, University of Port Harcourt Teaching Hospital, Nigeria.

**Subjects:** Patients with histologically confirmed acute appendicitis.

**Results:** A total of 130 patients who had appendectomy for acute appendicitis were included in the study. There were 62 males and 68 females (M:F 1:1.1). Their ages ranged from 14 to 67 years with a peak age incidence of 21-30 years. The highest incidence was in the month of July while the lowest was in February. All the patients presented with right iliac fossa pain and tenderness. Post-operative complication rate was 10% and wound infection was the most common (7.7%).

**Conclusion:** The presentation of acute appendicitis in UPTH is similar to that in other parts of the West African sub-region but with a slight female preponderance in our centre. Early diagnosis and prompt surgical intervention is the key to successful management.

### INTRODUCTION

Acute appendicitis is the most common cause of acute surgical abdomen worldwide (1). Differences in sex, age, seasonal variations and incidences have been reported widely but with little information from Nigeria. The incidence is higher but declining among the Caucasians and people living in the developed world while found to be increasing in most urban centers in developing countries like Nigeria, probably due to adoption of western diet (2). Diagnosis is mainly clinical. However, some other studies have supported the clinical findings with the use of abdominal ultrasound scan and computerised tomography (CT) scan to make a correct pre-operative diagnosis in 90-95% of cases (3).

The major causes of morbidity and mortality are perforation and gangrene. Wound infection remains the most common post-operative complication and is seen mostly in perforated appendix (4). This study was carried out to determine the pattern of presentation of acute appendicitis in UPTH.

### MATERIALS AND METHODS

This was a retrospective study of all patients with histologically confirmed acute appendicitis seen at UPTH over a two-year period (from 1<sup>st</sup> January 2008 to 31<sup>st</sup> December 2009). Relevant data which included age, sex, symptoms and signs, month of presentation, duration of illness before presentation, intra-operative findings, post-operative complications and outcome of surgery were extracted from the folders and analysed.

### RESULTS

During the study period, a total of 130 patients who had appendectomy for acute appendicitis were seen. There were 62 males and 68 females making a male to female ratio of 1:1.1.

The ages ranged from 14 to 67 years with a peak age incidence in the third decade, that is, 21-30 years (50%). About 79% of the patients were in the 21-40 year age range. The age and sex distribution is shown in Figure 1.

The incidence was higher between May and August (48.5%) with a peak in July. The lowest incidence was observed in February (Figure 2).

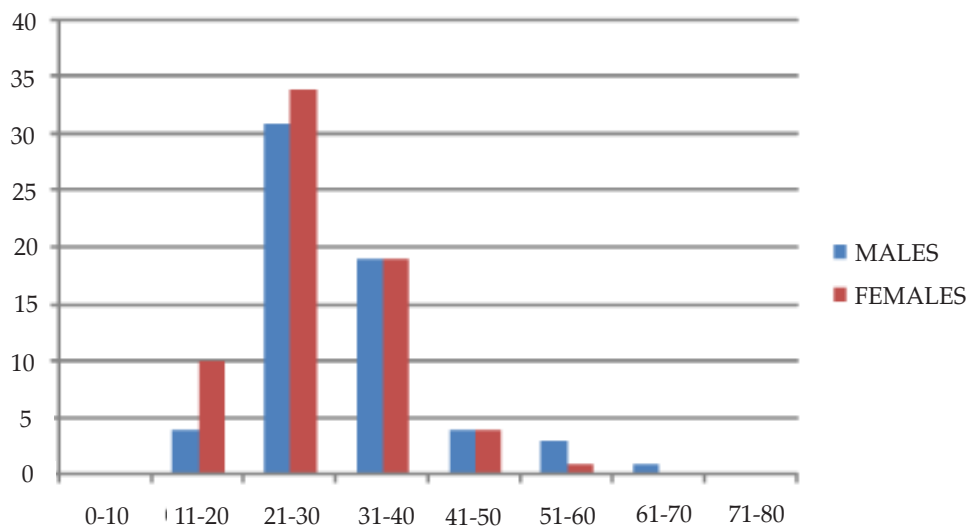
The symptoms and signs are shown in Table 1. All the patients presented with right iliac fossa pain and tenderness. The duration of symptoms before surgical intervention for uncomplicated acute appendicitis ranged from eight hours to eight days with a mean of  $3 \pm 0.8$  days while that of complicated appendicitis was from one to 21 days with a mean

of  $6 \pm 1.3$  days.

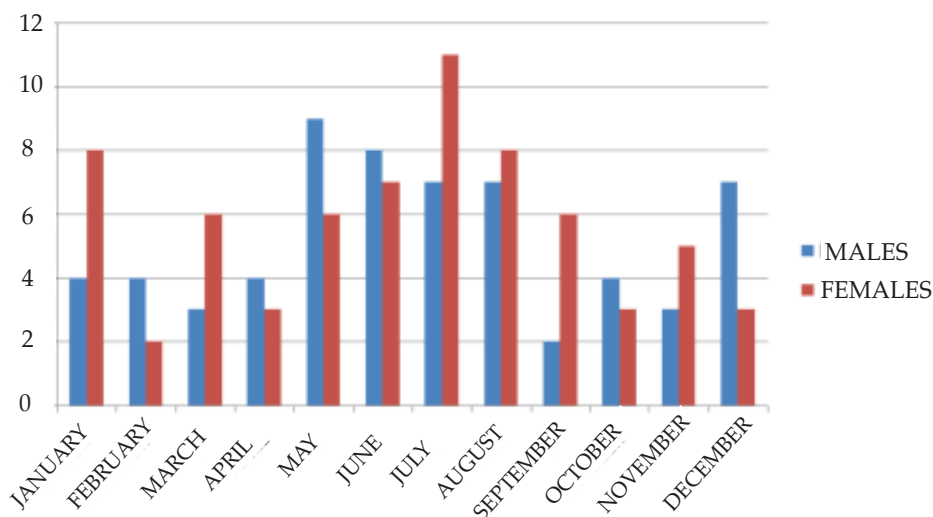
One hundred and three patients (79.2%) had uncomplicated acute appendicitis, 17 patients (13.1%) had perforated appendix. Other operative findings are shown in Table 2.

Wound infection was the most common post-operative complication occurring in ten patients (7.7%). Other post-operative complications are shown in Table 3. No mortality was recorded during the study period.

**Figure 1**  
*Age and Sex Distribution*



**Figure 2**  
*Monthly Incidence*



**Table 1**  
*Symptoms and Signs*

Symptom	No of Patients (%)
Right iliac fossa pain	130(100)
Generalised abdominal pain	14 (10.8)
Fever	47 (36.2)
Anorexia	81 (62.3)
Nausea	43 (33.1)
Vomiting	38 (29.2)
Diarrhoea	13 (10)
Constipation	20 (15.4)
<b>Signs</b>	<b>No Of Patients</b>
Right iliac fossa tenderness	130 (100)
Generalised tenderness	17 (13.1)
Rebound tenderness	87 (66.9)
Guarding	40 (30.8)
Rovsing's sign	41 (31.5)
Psoas sign	18 (13.8)

**Table 2**  
*Operation findings*

Operation Finding	No of Patients
Perforation	15 (11.6)
Gangrene	8 (6.2)
Abscess	2 (1.5)
Mass	2 (1.5)
Uncomplicated	103 (79.2)

**Table 3**  
*Post-operative complications*

Complication	No of Patients
Wound Infection	10 (7.7)
Intra-abdominal abscesses	2 (1.5)
Wound dehiscence	1 (0.8)
None	117 (90)

## DISCUSSION

Variation in incidence of acute appendicitis has been observed among countries, geographical regions, races, sex, age groups and seasons (5,6). There is increasing incidence in the developing countries as compared to developed nations where the incidence is declining(7,8). Westernisation of the indigenous

African diet and the youthful African population have been recognised as some of the possible reasons for the high incidence (9,10).

Many authors have reported a higher incidence in males(11,12). The marginally higher levels in females from this study (M:F 1:1.1) is in keeping with the finding of Ali *et al* from Maiduguri (13). The reason for this observation may be because young females

here tend to have preference for highly refined diet including confectionaries which prolong colonic transit time, with the aim of maintaining a slim stature. This has been found to increase the possibility of developing appendicitis, diverticular disease and even colonic malignancies (14,15).

The finding of 21-30 years as a peak age and 90% of the patients below 40 years is similar to the results from other studies (11,13,16). The progressive decline of the disease after the fourth decade and rarity in the first decade may signify the fact that the peak incidence coincides with the age endowed with the most active lymphoreticular activity in the mucosa associated lymphoid tissues which make up most of the appendix.

Though appendicitis occurs throughout the year, some authors have reported higher incidences in the summer months (17,18). In this study, the months of May to August present a high incidence with a peak in July and this is in keeping with results from other studies (18,19). The presence of seasonal variations shows the possibility of extrinsic factors such as humidity, bacterial and viral factors in the aetiology of appendicitis. The increase in the number of cases between the months of May and August in this study corresponds with the increase intensity of the rainy season. Higher humidity and increase in bacterial and viral infections (causing lymphoid hyperplasia leading to appendix lumen obstruction) seen during this period may contribute to the higher incidence of appendicitis (20,21).

The diagnosis of acute appendicitis is usually clinical and the patient presents with an initial dull peri-umbilical pain that later migrates to the right iliac fossa, with maximum tenderness at the McBurney's point (13). The clinical features in our patients were similar to other reports (11,13). Right iliac fossa pain remains the most common initial symptom and was present in all the patients. Other commonly presenting symptoms were anorexia, fever, nausea and vomiting.

The perforation rate of 13.1% is comparable to other reported rates in Nigeria (22,23). Perforation rates of 6-65% have been quoted in developed countries (23). Delayed presentation, fulminant disease, misdiagnosis and failure to accept medical treatment have been noted as contributory factors to high perforation rates (11). Perforation rates are much higher in the very young and elderly, as much as 80% in some cases because of difficult diagnosis (11). Therefore, the elderly and children would require a more aggressive approach in treatment. As in other reported findings (24), wound infection was the most common post-operative complication (7.7%) and mostly seen in patients with perforated appendix.

In conclusion, the presentation of acute appendicitis in UPTH is similar to what obtains in other parts of

the West African sub region but with a slight female preponderance in our centre. The peak age incidence was the third decade and most cases were seen between the months of May and August (peak in July). Early diagnosis and prompt surgical intervention is the key to successful management.

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