

### Appendicitis in Pregnancy: A report from Zaria, Nigeria.

L. Khalid, \*D.I. Ifenne, \*\*S.M. Shehu and \*\* A.H. Rafindadi

*Departments of Surgery, \*Obstetrics & Gynaecology and \*\* Pathology,  
Ahmadu Bello University Teaching Hospital, Zaria, Nigeria*

#### ABSTRACT

In a retrospective review of 21 pregnant patients who had appendicectomy for suspicion of appendicitis, 18 had histological confirmation while 2 had lymphoid hyperplasia and 1 was normal, giving a negative appendicectomy rate of 14.3%. The incidence of confirmed appendicitis in pregnancy was 1:1,236 deliveries. Of the 18 patients, 5 had complications of the disease (mass 3, perforation 2), while 13 were uncomplicated. The age range was 16-40 years (mean 26.8 years). The disease was more common in patients with high parity of 3 and above and one-half were in the second trimester. The common features were right iliac fossa and right flank pain and tenderness; nausea, anorexia and fever were less frequent. There was an average delay of 2.7 days between admission and surgical consult, due mostly to a suspicion of urinary tract infection. Three patients, including the 2 with perforation developed superficial wound infection. There was no maternal or perinatal mortality. Hospital stay was 7-14 days (mean 10.2 days). Negative appendicectomy was not associated with any complications (*Nig J Surg Res 2000; 2:52-56*)

*KEY WORDS: Appendicitis, Pregnancy*

#### Introduction

Acute appendicitis is reported to be the most common extra-uterine complication of pregnancy requiring surgery.<sup>1</sup> The incidence of pathologically confirmed appendicitis in pregnancy is thought to vary from 1:350-1:10,000-deliveries.<sup>1</sup> One report of 'normal' appendices removed at elective caesarean section showed 51% to be truly normal while 49% showed varying degrees of inflammation and its sequelae<sup>2</sup> suggesting that appendicitis in pregnancy is frequently under diagnosed. The features of appendicitis in the non-pregnant female in Zaria, Northern Nigeria

has been previously documented.<sup>3</sup> In these patients gynaecological conditions are a frequent cause of negative appendicectomy<sup>4</sup> This is a report of the experience with appendicitis in pregnancy in Zaria, northern Nigeria.

#### Materials and Methods

A retrospective study of all patients treated for appendicitis in pregnancy at the Ahmadu

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*Reprint Requests to: Dr. L. Khalid,  
Department of Surgery, A.B.U. Teaching  
Hospital, Zaria, Nigeria.*

Bello University (ABU) Teaching Hospital Zaria between January 1987 and December 1996 was done. The case notes and operation notes were reviewed to determine the mode of referral to the surgeon, clinical features, surgical approach, operative findings, post operative complications, effect of surgery on pregnancy and duration of hospital stay. The histology slides of all the appendices removed were also reviewed. The total number of female patients within the reproductive age who had appendicectomy for appendicitis, as well as the number of deliveries in the study period were also ascertained

## Results

During the study period, there were 22,254 deliveries recorded, while 318 females within the reproductive age had appendicectomy for appendicitis. Twenty one patients had appendicectomy done in pregnancy. Eighteen of the 21 patients had histological confirmation of appendicitis giving an incidence of 1:1,236 deliveries.

The features of appendicitis in pregnancy in Zaria are summarized in Table 1. The disease was uncomplicated in 13 patients, 3 presented with appendix mass and 2 had perforation. Fourteen of the patients with confirmed appendicitis were in the age range 16-40 years (mean 26.8 years). Parity was 3 and above in 12 patients and 2 were primiparous. Four patients were in the first trimester, 7 second trimester, and 3 third trimester. The duration of symptoms was 2-14 days (mean 6 days). Right iliac fossa and right flank pain and tenderness were common and nausea, anorexia and fever were less frequent (Table 2). One patient had recurrent right iliac fossa for 4 months before pregnancy. The interval between admission

and surgical consult was 4 hours – 7 days (mean 2.7 days).

Nineteen patients had appendicectomy via gridiron incision (extended upwards as necessary) and 2 with general peritonitis had laparotomy through midline incisions. The appendix appeared inflamed to the naked eye in 11, equivocal in 7, perforated in 2 and obviously inflamed in 1, this latter patient had an uncomplicated right ovarian cyst, which was biopsied. Intravenous antibiotics were given to all patients (given orally later). Post operatively, only 3 patients (2 with perforation and 1 with severe acute appendicitis) had tocolytic drugs (salbutamol 2, aminophylline 1) for 24 hours to seven days.

## Histology

Acute appendicitis was confirmed in 18 patients, in 2 only lymphoid hyperplasia was found. The appendix was normal in the patient who actually had ovarian cyst, which proved to be a luteal cyst.

## Outcome

One patient with uncomplicated appendicitis and 2 with perforation had superficial wound infection, which was controlled by local wound care, but they had prolonged hospital stay. The duration of hospital stay was 7-12 days (means 10.2 days). There was no fetal loss or maternal mortality.

## Discussion

The incidence of acute appendicitis in pregnancy in Zaria Northern Nigeria is 1:1,236 deliveries compared to 1:833 and 1:680 in reports from North America and

Table 1: Features of Appendicitis in Pregnancy in Zaria

Features	Number
Surgery for Appendicitis	21
Confirmed Appendicitis	18
Mean age	26.8 years
Total Deliveries	22,254
Incidence of Appendicitis	1.1,236 deliveries

Table 2: Clinical Features of Appendicitis in Pregnancy in 14 Patients

Symptoms	Number	Percentage
Abdominal pain	14	100
• Right iliac fossa	8	57
• Right flank	6	43
Nausea	6	43
Anorexia	4	29
Fever	4	29
Dysuria	4	29
Vomiting	2	15
Past history of right iliac fossa pain	2	15
SIGNS		
Tenderness	14	100
• Right iliac fossa	6	43
• Right flank	6	43
• Generalized	2	14
Mass.	3	21

Table 3: Complications of Appendicitis in Pregnancy

Complication	No. (%)
Appendix Mass	3 (17)
Perforation	2 (11)
Wound infection	3 (17)

Saudi Arabia<sup>1,5</sup> and 1:2,188 in another American report.<sup>6</sup> Appendicectomy in pregnancy accounts for 6.6% of all appendicectomy in females in the reproductive age in Zaria. The negative appendicectomy rate in pregnancy is 14.3%

similar to that in non-pregnant females,<sup>3</sup> but lower than rates of 19.4% and 22.6% in other reports.<sup>1,7</sup> While in our young females the causes of negative appendicectomy are a varying range of gynaecological conditions,<sup>4</sup> lymphoid hyperplasia was the usual cause in

pregnancy.

In all the patients who had negative appendicectomy in pregnancy the symptoms disappeared thereafter and none developed a complication.

The average age of 26.8 years in the present report is similar to other reports in which the disease is more common in the third decade.<sup>5,6</sup> One-half of our patients were in the second trimester. Right iliac fossa or right flank pain were common features, the later occurring mostly in the later part of the second trimester and third trimester, thus raising the suspicion of urinary tract infection. Nausea and anorexia were less frequent as in other reports.<sup>1,5,7</sup> The risk of complications of appendicitis in this review was 28% (5 of 18) with an appendix mass forming in 3 patients (17%) and perforation in 2(11%). A perforation rate of 6.5% to 41% has been reported<sup>1,5,7</sup> and is often associated with fetal loss or preterm labour. In the present report, perforation was not associated with perinatal problems but both patients developed superficial wound infection, which prolonged hospital stay. The average hospital stay was 10.2 days. Where hospital stay was prolonged, it was due to wound infection or delay in surgical consult. Delayed surgical consultation was due to initial suspicious of urinary tract infection in some patients. Despite this delay, the outcome of appendicectomy in our pregnant patients was largely uneventful. It is not clear whether routine use of antibiotics before and after surgical intervention has influenced this outcome.

Acute appendicitis in pregnancy may be difficult to diagnose due to the physiological changes that occur during this period. The risk of complication, especially perforation and peritonitis is high if operation is delayed<sup>9</sup> with attendant wound complications and

danger to maternal and fetal well being. Negative appendicectomy may be safer than risking missed or delayed diagnosis. Where diagnosis is in doubt, laparoscopy may be helpful<sup>6</sup> and abdominal ultrasonography has been found to be a useful aid in diagnosing appendicitis of recent.<sup>8</sup>

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