

Pregnancy outcome following non-obstetric abdominal surgery in Jos University Teaching Hospital: A 5-year retrospective study

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Abstract

Background: The need for nonobstetric abdominal surgical interventions in pregnant females arises periodically in practice and can be a source for concern for both the patient and the surgeon because of the risk of adverse outcome.

Aims and Objectives: To determine the indications for, and assess maternal and fetal outcome following nonobstetric abdominal surgeries in Jos University Teaching Hospital.

Materials and Methods: This was a retrospective cross-sectional study analyzing clinical records of pregnant women, who had nonobstetric abdominal surgeries in Jos University Teaching Hospital between January 2007 and December 2011.

Results: Fifty patients had nonobstetric abdominal surgery during the study period (January 2007 to December 2011). The ages of the women ranged 15–49 years with a mean of 29 ± 8.13 years. Intraoperative findings in the patients were consistent with acute appendicitis in 43 (86%) patients, two patients (4%) had ruptured spleen while one patient each (2.0%) had a transverse colon injury, postoperative adhesion bands, ruptured uterus and urinary bladder, and mesenteric injury. One (2.0%) mother died after surgery. 38 (76%) had spontaneous deliveries, and there were 11 miscarriages (22%) and 1 perinatal death. The perinatal mortality rate was 0.093/1000 deliveries. The mean hospital stay was 5.52 days.

Conclusion: Nonobstetric abdominal surgeries in pregnant women are an infrequent occurrence at Jos University Teaching Hospital but when they do occur, they are indicated by acute appendicitis in pregnancy.

Key words: Jos University Teaching Hospital, nonobstetric abdominal surgery, pregnancy

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Introduction

Nonobstetric surgery is an important concern for physicians who care for women; it is not an uncommon event.^[1,2] It is

estimated that 0.5–1% of pregnant women will require surgery for nonobstetric causes.^[3] A study in American population has estimated the rate of abdominal surgery during pregnancy to be 1 in every 527 births.^[1] Data on this subject in this environment are however few; yet, abdominal surgeries are one of the most common surgeries in pregnancy^[4] and despite advances in perinatal, perioperative care and anesthesiology, emergency nonobstetric surgery in particular is an important cause of poor fetal outcome as well as maternal mortality.^[5-7]

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This study sought to determine the pattern of nonobstetric abdominal surgeries in Jos University Teaching Hospital, as well as the maternal and fetal outcomes following nonobstetric abdominal surgery in pregnancy. It was carried out in the Jos University Teaching Hospital, a tertiary health center in North Central Nigeria that provides high-quality care to residents of its host state, Plateau as well as neighboring states such as Nasarawa, Bauchi, Kaduna, Gombe, Taraba, and the Federal capital territory Abuja. It can handle surgical and gynecological emergencies.

Materials and Methods

All consecutive cases of emergency nonobstetric abdominal surgery performed on pregnant women at the Jos University Teaching Hospital from January 2007 to December 2011 were reviewed. The information was collected from the patient's hospital records, such as operative room registers, gynecological emergency unit records, and delivery records. The data collected included sociodemographic characteristics, obstetric history, and diagnosis as well as maternal and fetal outcome. The information gathered was transferred into a questionnaire, stored, and analyzed using the Epi info 3.5.4 software CDC Atlanta 2008 using simple percentages.

Results

A total of 50 patients had nonobstetric abdominal surgery from 2007 to 2011 at Jos University Teaching Hospital during the study period. There were 10,769 births within the study period giving a rate of 4.6 in every 1000 births. Ages ranged from 15 years to 49 years with a mean of 29 ± 8.13 years. Thirteen (26%) patients were primigravida and 27 (54%) were multigravida. Forty-seven (92.2%) had some level of education while three (6.8%) patients did not have any formal education. Thirty-four of the patients (75.6%) booked for antenatal care during the index pregnancy leaving only 11 (24.4%) unbooked. A majority of mothers were in the second trimester of the pregnancy 33 (73.4%). The mean gestational age of the patients was 22.72 ± 7.03 weeks.

At presentation, all the patients complained of abdominal pain at presentation. Other symptoms included vomiting (66%), anorexia (62%), and fever (77.7%). All the patients had generalized abdominal tenderness when examined. The median interval between onset of abdominal pain and presentation was 2.98 days.

Intraoperative findings in the patients were consistent with acute appendicitis in 43 (86%) patients, 2 patients (4%) had ruptured spleen while one patient each (2.0%) had a transverse colon injury, operative adhesion bands, ruptured uterus and urinary bladder, and mesenteric injury. One

patient (2%) had a negative laparotomy. The majority of the patients, i.e., 45 (90%) had no postoperative surgical complications while 4 (8%) suffered from anemia and 1 (2%) had postoperative wound dehiscence.

One mother (2%) died after surgery while 38 (76%) of the pregnant women who had non obstetric abdominal surgeries went on to have spontaneous deliveries at term. There were 11 miscarriages (22%) and 1 perinatal death. The perinatal mortality rate was 0.093/1000 deliveries. The mean hospital stay was 5.52 days.

Discussion

The total number of pregnant patients who had nonobstetric abdominal surgery in our study was 50 over a period of 5 years (January 2007 to December 2011); this represents a higher number in a shorter study period than a similar study carried out in Obafemi Awolowo University Teaching Hospital, Ife, that reviewed all cases of nonobstetric abdominal surgeries over 15 years (January 1991 to December 2006).^[7] This may suggest a higher patient load in our center.

The mean age of the patients in our study was 29 ± 8.13 years, which is comparable to the study in Ife whose patients had a mean age of 29.33 years. There were 13 primigravida (26%) in our study while the other patients were multigravida. A majority of the patients, i.e., 33 (66%) were booked for antenatal care in the index pregnancy and presented in the second trimester of pregnancy. This differs from the clients in the Ife study where 32 (69.6%) were unbooked in the index pregnancy although similar to our study; also, the patients that presented as emergencies were mostly in their second trimester of pregnancy. This would suggest that the patients in our study booked for antenatal care earlier than in the Ife study even though they had similar levels of formal education. In our study, 42 (84%) of the patients had some level of formal education and 8 (16%) had no formal education compared with 8.7% in the Ife study that had no formal education.^[7]

The majority of the patients in our study were in the second trimester of the pregnancy at presentation (73.4%). Recent studies have shown a preponderance of acute abdominal emergency in pregnancy in the second trimester.^[4-8] This is similar to the study done in Ile Ife Southern Nigeria that reported 70% of patients presenting with acute abdomen in pregnancy to be in the second trimester.^[7,8]

All the patients who presented reported abdominal pain as the main symptom that necessitated their presentation for care. This suggests that although mild abdominal pain may be considered a physiological symptom of pregnancy,^[9] its persistence or severity is an emergency factor in patients presenting in the hospital for consultation for acute abdomen.

The mean duration of hospital stay after surgery was 5.52 days. The mean number of days before presentation was 2.98 days. This was similar to the findings in the Ife study; it is instructive that most of the patients (64%) were presented 48 h after the onset of the symptoms. This implies a poor health care seeking behavior where it concerns symptoms of acute abdomen in spite of the fact that a majority of the patients (66%) had booked for antenatal care.

Appendicitis was the most common cause of nonobstetric surgical abdominal emergencies in our study; this is also noted in previous studies.^[4-10] However, we observed more cases of complicated penetrating gunshot wounds in six patients. This may be attributed to recent communal crisis being experienced in Jos. Maternal and fetal health are in serious jeopardy as a result of generalized peritonitis that set in quickly because of reduced space for the omentum to contain the spread. This might explain maternal and fetal mortality recorded in this study in such clinical scenarios. This finding agrees with the global picture where acute appendicitis in pregnancy is the most common cause of emergency nonobstetric abdominal surgery affecting 1 in 1500 pregnancies.^[6] Gallstone disease and intestinal obstruction are the second and third most common indications, respectively, for nonobstetric abdominal surgeries worldwide.^[11-17] The rare finding in our study which implicated penetrating abdominal injuries and typhoid perforation as causes of nonobstetric abdominal surgeries in pregnancy was at variance with the global picture probably because of the low number of cases reviewed.

The high incidence of complicated cases could be due to late presentation to the health facility. Most women may confuse the symptoms of acute abdomen with the normal symptoms of pregnancy. This may explain why most of the patients (44.4%) presented between 3 and 5 days after the onset of symptoms that later necessitated surgical intervention.

There was a favorable maternal outcome in 49 (98%) of the patients studied with 1 (2%) maternal mortality. The maternal mortality was due a gunshot injury. This is lower than the four maternal mortalities reported in the Ile Ife study. The fetal wastages in our study were accounted for by 6 (12%) cases of first trimester miscarriages while 38 (76%) of the pregnant women had their pregnancies progress to spontaneous deliveries at term. The reason for this may be because most of the pregnant women (84%) presented with uncomplicated acute appendicitis.

A review of negative appendectomies developed at the University of Benin by Okonofua that analyzed the records of 23 pregnant patients with a clinical diagnosis of acute appendicitis showed 18 (78.3%) of the patients with

proven appendicitis and a negative appendectomy rate of 21.7%.^[18] In this study, however, we found intraoperative evidence of inflammation of the appendix in 78% of patients presenting a preoperative diagnosis of acute appendicitis and normal findings in 4.4% of the patients diagnosed with acute appendicitis preoperatively. Unlike the Benin study, however, we were unable to retrieve the histopathological records of our patients and thus had to rely on the surgical records. This finding may, therefore, imply higher rates of appendicitis in the general population in Benin.

A modest tenth (5%) of the patients presented with postoperative complications but most of them included anemia in the patients that suffered abdominal gunshot injuries.

Conclusion

Nonobstetric abdominal surgery in pregnancy occurs with sufficient frequency in Jos University Teaching Hospital to warrant medical interest. Acute appendicitis was the most common indication for nonobstetric abdominal surgeries. Most of the patients had live births after surgery.

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Conflicts of interest

There are no conflicts of interest.

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