Difficulties in Diagnosis of Acute Appendicitis in Pregnancy

Pages with reference to book, From 282 To 285

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Summary

This series of five cases of acute appendicitis during different stages of pregnancy highlights the difficulties surrounding the diagnosis of acute appendicitis in pregnancy, especially during the late second and third trimesters. All these cases illustrate the need for a high index of suspicion so that laparotomy is performed at an early stage of the disease. Delay in management results in increased morbidity complications and prolonged hospital stay. (JPMA 35 280, 1985).

Introduction

Acute appendicitis in pregnancy is no more common than in the non pregnant population, but as it occurs more frequently in the 20 - 30 years age group, child bearing women are commonly affected. Acute appendicitis in pregnancy may present with a confusing clinical and laboratory picture which often delays diagnosis. The five cases of histologically confirmed acute appendicitis described ip this report occurred over a 12-month period in our hospital, during which there were 2,485 deliveries. The present incidence of 1 in 414 deliveries is much greater than that previously reported. [1] There was no corresponding increase in the incidence of acute appendicitis in the rest of the hospital population during the period in question.

Case 1

A 25-year old primigravida at 11 weeks gestation presented with a two-day history of pain in the right side of abdomen. A severe acute episode of pain resulted in a fainting attack. She also complained of nausea and vomiting. There were no urinary symptoms.

On examination the patient was afebrile and had a normal pulse and blood pressure. There was tenderness and guarding in the right iliac fossa. No tenderness was elicited on pelvic examination but a mass was palpable in the right adnexal region.

Ectopic pregnancy was excluded on the basis of a demonstrable intrauterine pregnancy on Ultrasonic examination. On admission her Haemoglobin was 13 .8gms/dl., and white cell count was 13,800/mm^3. Urinalysis was clear. A clinical diagnosis of acute appendicitis was made.

Appendicectomy was performed through a grid iron incision and subsequent histology confirmed the diagnosis of acute appendicitis. Post operative recovery was uneventful.

The remainder of her pregnancy was normal and she delivered a healthy infant at term by Ventouse extraction.

Case 2

A 41-year old woman para 5 + 0 was admitted at 34 weeks gestation complaining of severe backache and urinary frequency, for 12 hours. This was associated with nausea and vomiting.

At admission she looked distressed but her temperature, pulse and blood pressure were normal. There was no rebound tenderness on guarding. No abnormality was found on pelvic examination.

The differential diagnosis was urinary tract infection or sacroiliac strain. A mid stream specimen of urine was normal, haemaglobulin was 9.5 gms/dl with white cell count of 13,900/mm^3. She required

Pethidine for pain relief, and was kept under close review. Six hours later she was still complaining of pain with no physical signs other than a tachycardia of 100 per minute. A normal tochograph confirmed feotal wellbeing.
The following day she was still complaining of pain. The possibility of accidental haemorrhage was considered but was excluded but ultrasonic examination and her coagulation screen was normal. She was transfused with 2 units blood to correct her anaemia. The patient improved over the next 3 days and was discharged with an appointment to attend the antenatal clinic.
She was readmitted three days later with backache, lower abdominal discomfort persistent nausea and occasional vomiting. She was not in labour and her abdomen was soft. She was afebrile with a normal pulse and blood pressure. Two days later the patient developed slight tenderness in right iliac fossa. Her haemglobin was 12.lgms/dl and white cell count was 10,900/mm^3 at this time. Temperature, pulse and blood pressure remained within normal limits during the night. The following morning the tenderness in the right iliac fossa was constant. She .developed a temperature of 101 F with pulse 142 per mmute and she vomited twice. She looked ill and a laparotomy was decided upon. A right para median incision was made and an appendicular abscess was found and drained. She was started on parenteral antibiotics. Two days later she went into premature labour and delivered a male baby vaginally. The patient convalesced very well apart from a superficial wound infection. She underwent elective appendicectomy three months later.

Case 3

A 25-year old woman, para 1+0, presented with generalised abdominal pain at 31 weeks gestation. She had nausea and vomiting twenty-four hours prior to the onset of pain and had no urinary complaints. On examination the patient was afebrile with a normal pulse and blood pressure. Her abdomen was soft with no direct or rebound tenderness. Pelvic examination was not performed. Immediate laboratory investigations showed a haemoglobin of 12.1 grns/dl and white cell count 19,100/mm^3. Urine bacteriology was positive.
A provisional diagnosis of urinary tract infection was made and an antibiotic commenced. She remained afebrile but developed definite tenderness in the right lower quadrant. A diagnosis of acute appendicitis could not be excluded. Within two days however the pain had subsided and the patient was discharged with an appointment for the antenatal clinic. The patient readmitted herself five days afterwards with severe pain in the right iliac fossa. On examination she was afebrile and had a normal pulse rate. Local tenderness, guarding and rebound tenderness were present in the right iliac fossa this time. Her white cell count was 9,200/mm3. Her mid stream specimen of urine remained positive for bacterial growth. A diagnosis of acute appendicitis was made and the surgical team consulted.
The patient was operated upon on the same day and an appendicular abscess was found and drained. No attempt was made to remove the appendix. Post operative recovery was uneventful. The patient was discharged and seen in the antenatal clinic. She was subsequently admitted at 37 weeks gestation with spontaneous onset of labour and normal vaginal delivery achieved. An interval appendicectomy was performed six weeks after delivery. Histology showed serosal fibrosis as a result of previous inflammation.

Case 4

A 30 years old woman, para 4 + 3, complained of severe pain in her right iliac fossa with nausea and vomiting, at 30 weeks gestation. On examination she was afebrile with a normal pulse and blood pressure. Mid stream specimen of urine was negative. She was treated with bed rest and analgesics. She was examined by a general surgeon who excluded acute appendicitis and she was discharged.
Twenty days later she was readmitted with the same complaints. On examination her temperature was 98.0°F and pulse and blood pressure wexe again within normal limits. Howevertenderness. with guarding and rebound tenderness in her right iliac fossa were present on this occasion. Her haemoglobin was 10.1 gms/dl and white cell count was 10,300/mm^3. Ketonuria was noted.

She was treated symptomatically with analgesics and anti-emetics and intravenous fluids. A surgical opinion was sought again and this resulted in a laparotomy on the following morning.
A large haematoma was found in the right broad ligament with multiple varicosities. A slightly inflammed appendix was also removed. Nothing was done to the haematoma. Acute appendicitis was confirmed' on histology. The patient went into labour three days after the operation and had forceps delivery of a male infant. Both were discharged from hospital after routine post natal stay. At her six weeks, post natal visit the was still complaining of pain in the lower abdomen but ultrasonic examination thowed a satisfactory reduction in the size of the haematoma.

Case 5

A 26 years old primigravida was seen in the antenatal clinic at 10 weeks gestation. Apart from her pregnancy a mass was palpable in the pelvis on vaginal examination and an ovarian cyst was diagnosed. This was confirmed on ultrasonic scan. Routine clinical examination and haematology was performed and the patient was called after four weeks for an Ovarian Cystectomy.
The patient was admitted at 14 weeks gestation for operation. All the vital signs were normal. Eight hours after admission the patient complained of abdominal pain with nausea and vomiting. Her pulse, temperature, and blood pressure were normal and clinical examination was unremarkable. It was therefore thought that the may have been a little anxious on the night prior to surgery.
A laparotomy was performed the following morning and a left ovarian cyst removed. During surgery a long appendix with signs of inflammation was also noted and an appendicectomy was performed.
A diagnosis of acute appendicitis was confirmed by histology. The patient had an uneventful post operative recovery.

Discussion

An accurate diagnosis was made early only in case 1 in this series. In cases 2 and 3 presenting in the last trimester, a diagnosis of acute appendicitis was missed, leading to delay in treatment and abscess formation. This increased the patients morbidity related to surgery and anaesthesia and increased hospital stay. The fourth case has a dual problem which complicated the picture and again led to delayed in diagnosis. The fifth case was admitted for elective cystectomy and developed acute appendicitis the night before operation.

Table I

Summary of Clinical features and provisional diagnosis

Case	Age	Parity	Gest. weeks	Presenting complaint	Nausea vomiting	Abdo. Tend.	Temp.	Pulse	WCC	Urinary complaint	MSU	Prov. Diagnosis
1	25	0 + 0	11	Pain in RIF Fainting	+	+	Norm.	Norm.	13.8	None	Clear	Acute Append.
2	41	5 + 0	32	Backache	+	None	Norm.	Norm.	13.9	Freq.	Clear	U.T.I.
3	25	1 + 0	31	Pain all over abdo.	+	None	Norm	Norm.	19.1	None	Pos.	U.T.I.
4	30	4 + 1	30	Pain in RIF	+	+	Norm.	Norm.	12.8	None	Clear	–
5	26	0 + 0	10	Abdo. pain	+	None	Norm.	Norm.	–	None	Clear	–

Delay in diagnosis of acute appendicitis in pregnancy is probably the result of a change in the physiology and the anatomy of a pregnant woman which masks the diagnostic signs and symptoms of

acute appendicitis. [2] Thus anatomical displacement of the appendix by the enlarging uterus is responsible for the absence of characteristic guarding and rebound tenderness.[3] Nausea, vomiting and abdominal paln which are the cardinal symptoms of acute appendicitis are commonly present in the pregnant woman.[4] It can be very difficult to differentiate the abdominal pain of acute appendicitis from that due to urinary tract infection, especially in the last trimester when the paln tends to occur in a higher and more lateral plane. [5] Pyrexia is not a reliable sign and in one study[6] of acute appendicitis in the non pregnant state and was absent in half the cases. The diagnosis of perforation in acute appendicitis is commonly missed by physicians on first examination.[7]

Babler[8] stated in 1908 that the mortality of appendicitis complicating pregnancy and the puerprium is the mortality of delay this is still true today. Appendicitis during pregnancy carries a maternal mortality of 0.1% . 0.4%[9] Although the incidence of acute appendicitis is higher in first and second trimester as compared with the third the mortality rate is in the last trimester 5 - 10 times higher.[5] The incidence of gangrene and perforation in pregnancy is twice that in non pregnant state[10] and contributes to high maternal mortality.

In view of the reported low incidence of acute appendicitis in pregnancy the occurrence of five cases of this condition in 1424 consecutive deliveries in the present series is an unusual experience. It was observed that the picture of acute appendicitis in the last trimester is very confusing and needs special attention. Early diagnosis and early intervention reduce the morbidity and mortality of both mother and fetus especially in last trimester. [1,5,7,12]

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