

ACUTE APPENDICITIS IN INFANTS: A CASE REPORT

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SUMMARY

A case of acute appendicitis occurring in a 10-month-old infant is reported. The difficulties of an early preoperative diagnosis are highlighted. Perforation has usually occurred on presentation. However, prognosis may not necessarily be poor if active measures are instituted soon after perforation. The importance of active and aggressive preoperative resuscitation with fluids and electrolyte and intravenous antibiotics is stressed.

INTRODUCTION

Acute appendicitis is one of the commonest causes of an acute abdomen seen in surgical practice. However, it is extremely rare in infants. Less than 2% of children with appendicitis are under two-years of age.¹ This should not, however, deter one from keeping this diagnosis in mind, because of the high incidence of perforation and associated high morbidity and mortality.²

CASE HISTORY

A 10-month-old Malay, male infant was

referred for complaints of fever and loose stools for three days, vomiting for two days and abdominal distension one day prior to admission. He was noted to be about 10% dehydrated and in a moribund condition. His peripheries were cold; he was febrile with a pulse rate of 140/min and respiratory rate of 40/min. His abdomen was distended but soft. It was difficult to elicit any tenderness. Bowel sounds were present. A rectal examination showed some blood-stained mucus. A provisional diagnosis of intussusception was made.

Immediate resuscitation with 1/2N saline and plasma was carried out. He developed some generalised fits which responded to intravenous phenobarbitone. A blood-gas examination showed severe metabolic acidosis. Abdominal X-rays showed dilated loops of bowel and multiple fluid levels suggestive of intestinal obstruction. The bowel was decompressed with a Ryle's tube and intravenous netilmicin and metronidazole were commenced. He was subsequently transferred to the Intensive Care Unit (ICU) where he was ventilated.

About 16 hours after admission, when the patient was adequately stabilised, a laparotomy was performed. The small bowel was grossly distended with marked adhesions. There was free pus in the peritoneal cavity with fibrinous plaques. There was an adhesive band around the terminal ileum causing obstruction. The appendix was

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grossly inflamed and perforated at its tip. The adhesions were released and the bowel decompressed retrogradely into the stomach and aspirated. Intraoperative replacement of fluids was carried out. The appendix was removed and the peritoneal cavity thoroughly washed out with warm saline.

In the postoperative period, he was ventilated in the ICU, and fluid and electrolyte replacement continued. He responded well to this management and was extubated and returned to the general ward after two days. His subsequent progress was uneventful and he was discharged well after 12 days in hospital.

DISCUSSION

The diagnosis of acute appendicitis in children is always difficult. The rarity and the atypical presentation in infants make it an even more difficult problem to arrive at an early diagnosis in this age group. Abdominal pain is not a feature, but irritability and constant crying should be taken as indirect indicators of it. Physical signs can also be very nonspecific in the early stages. Tenderness, guarding and rebound tenderness are extremely difficult to elicit in the infant especially one who is crying incessantly. It is also not unusual that this diagnosis is not thought of because of its rarity in this age group. These all add up to a high incidence of late diagnosis and perforation (about 80%).^{2,3} The mortality in children over two-years-old is less than 0.1%, but it increases to 10% in infants.² This increases dramatically to about 80% in appendicitis in the neonatal period.

How then can one overcome this problem? Adopting a high index of suspicion is a useful first step. Persisting fever and diarrhoea should alert one to a condition of a more serious nature. An irritable infant may make one think of intussusception, a far commoner condition in this age group. This may not necessarily be too bad because then the infant will receive immediate attention. It is also a wise rule to refer or admit the patient for observations or further investigations when in doubt.

An abdominal X-ray, which may be helpful in the older child, assumes a more significant role in the infant.³ In about 80% of cases, the abdominal X-ray was found to be helpful in the diagnosis.³ The presence of a faecolith is very suggestive of acute appendicitis. Thickening of the abdominal wall on the right side is also a helpful radiological sign. A localised ileus or "sentinel loop" on the right side may point one to the diagnosis. The presence of free peritoneal fluid radiologically, is very suggestive of perforation. Because of the high incidence of perforation, diffuse dilatation of the small bowel with air-fluid levels is a common radiological sign.

Initial resuscitation should be aggressive because the majority of these patients are severely dehydrated with gross electrolyte imbalance and metabolic acidosis. Wide spectrum intravenous antibiotics should be started as soon as possible and continued for at least a week. Fluid therapy should be continued throughout surgery and in the postoperative period.

Laparotomy, rather than a lesser procedure, is preferable, because the diagnosis is usually in doubt preoperatively. The treatment of the appendicitis does not differ from the standard method. However, the peritoneal cavity should be thoroughly washed out with warm saline and as much as possible of the fibrinous plaques are to be removed.

The high mortality rate² has been attributed to: delay in diagnosis; the mobility of the underdeveloped omentum to isolate and wall-off intra-abdominal infection; underdevelopment of the baby's immune system; increased mobility of the caecum; and the relatively large size of the appendix.

The need for artificial ventilation in this case just goes to show how severely ill these patients can be. However, the prognosis may not necessarily be bad, even in the presence of perforation, if treatment is instituted early. The importance of

active and aggressive resuscitation cannot be overly stressed. A reasonable state of stabilisation must be achieved before subjecting the patient to surgery.

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