

Unusual causes of acute abdomen in a Nigerian hospital

*A. R. K. Adesunkanmi and O. Ogunrombi

Department of Surgery, College of Health Sciences,
Obafemi Awolowo University, Ile Ife

Summary

Acute abdomen is the most common abdominal emergency associated with high morbidity and mortality in General surgical practice. Over a 7-year period, a study of unusual causes of acute abdomen was undertaken, with the aim of identifying these causes and outcome of operative management.

Eleven cases were identified accounting for 4% of cases of acute abdomen seen during the period of the study. Four cases of liver diseases (33.3%) comprising 2 patients (16.7%) with ruptured primary liver cell carcinoma, 1 (one) case each of haemoperitoneum due to ruptured liver haemangioma and haemorrhagic disorders from liver cirrhosis. One patient had acute leukaemia with massive haemoperitoneum and acute abdomen. Five (45.5%) had gastrointestinal perforations; 1 patient (9%) each had multiple jejunal perforations, perforation of stomal ulcer at gastrojejunostomy site, perforation of gastric cancer; perforated carcinoid tumour of sigmoid colon and idiopathic perforation of the caecum. There was also a case of caecal volvulus. Mortality was 7 patients (63.6%). All patients with liver pathology and acute leukaemia died. The cases of malignant tumour perforation were well and alive 4-6 years after the operation.

Conclusion: Operation could have been avoided in 45.5% of these cases if the appropriate investigations, had been available and carried out.

Keywords: Acute abdomen, Unusual causes, Tropics.

Résumé

Abdomen aigu est un cas d'abdominal d'urgence le plus fréquent associé avec un taux élevé de la morbidité et de la mortalité dans l'exercice général chirurgical. Pendant plus d'une période de 7 ans, on a effectué une étude sur des causes peu ordinaires d'abdomen aigu dans le but d'identifier les causes et les résultats de la prise en charge opératoire.

Onze cas ont été identifiés ce qui constituent 4% des cas d'abdomen aigu vus pendant la période de cet étude. Quatre cas des maladies du colin foie soit 33,3% composé de 2 patients soit 16,7% atteints du carcinome cellule du colin foie primaire hernié, un cas chacun d'hémoperitoneum attribuable au colin foie hernié hémangiome et désordres hémorragique à partir du cirrhose du foie. Un patient atteint de la leucémie aigue avec l'hémopéritoneum enorme et abdomen aigu. Cinq soit 45,5% avaient des perforations gastrointestinales, 1 patient soit 9% chacun avait des perforations multiples jéjunums multiples, la perforation d'ulcère d'estomac dans le siège gastrojejunostomie, perforation du cancer gastrique, tumeur carcinomateuse perforée du côlon de la sigmoïde et perforation idiopathique du caecum. Mortalité était 7 patients soit 63,6%.

Tous les patients atteints de la pathologie du foie et la leucémie aigu sont mort. Les cas de la perforation malignante de la tumeur étaient en bonne santé et vivant de 4 à 6 ans après la chirurgie.

Conclusion: On pourrait éviter la chirurgie dans 45,5% de ces cas si des investigations nécessaires étaient disponibles et si on avait suivi de plus près ces investigations.

Introduction

Acute abdomen is a common surgical emergency, the causes are often determined by ethnic, environmental and sometimes clearly geographically defined factors.¹ Typhoid perforation and perforated acute appendicitis are two common causes of generalized surgical acute abdomen in this environment.^{3,4,5} However, some

rare causes of surgical acute abdomen do occur^{1,6} also some advanced medical conditions sometimes simulate surgical acute abdomen, which in the heat of emergency situation may lead to unnecessary surgical intervention with associated complications.

The aim of this study is to highlight the unusual causes of acute abdominal conditions presenting as surgical acute abdomen in our environment. It is hoped that reporting these cases will guide surgeons working in conditions similar to ours in avoiding some of the pitfalls encountered in the management of these cases.

Illustrative cases

Case 1

A 64-year-old man presented with a week history of gradual onset of abdominal pain, which gradually worsened. There were no associated fever and no constipation. He was known to be a peptic ulcer patient on mist magnesium trisilicate and cimetidine prescribed at a private hospital. The significant findings at physical examinations were pallor, generalized abdominal tenderness, guarding and rebound tenderness. Diagnosis of acute abdomen was made, plain radiograph was not immediately available but paracentesis abdominis yielded frank, free flowing and non-clotting blood, diagnosis of ruptured viscus probably diseased spleen was entertained. At laparotomy, about 1 litre of blood was drained from the peritoneal cavity. The bleeding emanated from advanced ruptured primary liver cell carcinoma. The tumour was not tampered with, peritoneal irrigation done and abdominal wound closed. Patient recovered from the operation, he was, however, readmitted a month after discharge in hepatic failure and died soon after admission.

Case 2

A 23-year-old school leaver was admitted with a week history of fever, that did not respond to anti-malarials. Apart from fever and vague abdominal tenderness no other abnormality was found. Management as a case of typhoid enteric fever was commenced with intravenous fluids and amoxicillin. Forty-eight hours after admission he developed sudden abdominal distension and the abdominal tenderness worsened. Abdominal ultrasound showed fluid in the peritoneal cavity and paracentesis abdominis showed frank non-clotting blood. At operation 3 litres of blood was drained and blood was oozing from abdominal wall. There were multiple petechial haemorrhages involving the intestine and peritoneal cavity. Patient had multiple transfusion of fresh blood without any effect. Abdomen was closed and patient died 6 hours after the operation. The result of white blood count came back to be 85,000/cmm³ with many blast cells, this was diagnostic of acute leukaemia.

Case 3

A 23 year old female student was seen in surgical out-patient clinic with 1 week history of abdominal pain that was getting worse, associated with fever. There was no abdominal distension, but there was guarding, tenderness and rebound tenderness. Diagnosis of acute abdomen was made and gut perforation was suspected. There was delay in getting plain radiograph of the abdomen, thus she had laparotomy during which perforated sigmoid tumour was discovered. There was about 500ml of pus. She had anterior resection and double barrel colostomy. Wound was closed and patient recovered well and was discharged with colostomy. The histology of surgical specimen showed a malignant carcinoid tumour. Colostomy was closed after 3 months. The patient has been followed

* Correspondence

up for 6 years during which she remained clinically well. The family of this patient was not available for any investigation to rule out familial tumour syndrome.

Case 4

A 38-year-old female hospital worker presented with a 14-day history of abdominal pain and vomiting, she was admitted for peptic ulcer disease and commenced on cimetidine 400mg twice daily. Her abdominal pain was gradually getting worse. On re-examination by the surgical team, a diagnosis of peritonitis with possibility of peptic ulcer perforation was made. Plain radiograph of abdomen was not immediately possible, thus, she had exploratory laparotomy carried out by the surgical residents and perforation of the antrum was identified. This was closed with omental patch.

After the operation the patient was not improving and abdominal pain persisted, radiating to the back. On re-assessment by the consultant surgeon, patient was re-explored, during which a huge antral carcinoma plastered to the pancreas was found. Subtotal gastrectomy and antecolic gastrojejunostomy was done. Patient recovered well and she was discharged home 15th postoperative day. She had courses of intravenous 5-fluorouracil 500mg for 5 days, then monthly for 6 months. She did well apart from occasional abdominal pain radiating to the back; this is being treated as acute relapsing pancreatitis. The patient has been followed-up for 3 years

Case 5

A 16-year-old female student presented with 7-day history of abdominal pain, vomiting and abdominal distention. Physical examination revealed fever, abdominal tenderness, guarding and rebound tenderness. Diagnosis of acute peritonitis due to typhoid perforation was made. Patients had packed cell volume of 31% and plain chest and abdominal x-ray revealed air under the diaphragm. At exploratory laparotomy, multiple jejunal perforations were found and 200ml of pus drained. No ascaris worm was found in intestine or in the peritoneal cavity. The cause or causes of these jejunal perforations could not be determined at operation. She had resection of the 20cm of jejunum; patient recovered from anaesthesia but died 24 hours after the surgery.

Case 6

A 23-year-old man presented with 2 week history of fever and generalized abdominal pain. No mucoid bloody stool suggestive of amoebiasis. He was found to be ill-looking, toxic and febrile, he was not pale. The chest was clinically clear, but abdomen was distended, generalised tenderness, guarding and rebound tenderness. Diagnosis of generalized peritonitis due to typhoid ileal perforation was made. Packed cell volume was found to be 35% and plain radiographic investigation was not immediately available. After initial resuscitation, he had exploratory laparotomy. Large quantity of air escaped from the peritoneal cavity indicating massive pneumoperitoneum and about 1.5litres of pus was drained. The other parts of the intestines were essentially normal apart from inflammatory reactions. No large bowel dilatation suggestive of Ogilvie's syndrome. No intestinal perforation was discovered. Apart from generally inflamed intestines and fibrinous adhesions; other organs were essentially normal. The patient developed abdominal distention, with persistent fever and toxemia on the 4th postoperative day. Diagnostic tap yielded pus, diagnosis of post-operative intraabdominal pus collection was made and patient taken to theatre for drainage, 5 litres of pus was drained. A ragged perforation of the caecum about 0.5 cm in diameter was found. Thorough peritoneal lavage was repeated and wound closed in layers with peritoneal drain. After an initial improvement, patient's condition deteriorated and died second day after re-exploration.

Results

There were 275 cases of acute abdominal emergency during the period of the study 11 cases were unusual causes of acute abdomen accounting 4%. The age ranged from 7 - 70years, mean of 35 years $SD \pm 6.5$, there were 9 males (75%) and 2 female patients. There were 5 cases (45.5%) of gastrointestinal perforations; 1 patient each (9%) had perforation of gastric carcinoma, perforation of stomal ulcer of gastrojejunal anastomosis, perforation of the caecum, and malignant carcinoid tumour of the sigmoid colon. Four cases (36%) were due of liver diseases; 2 cases (18%) of ruptured advanced primary liver cell carcinoma, 1 case (9%) of ruptured hepatic haemangioma, 1 case (9%) of bleeding due to liver cirrhosis and hepatic failure. There was a case each of acute lymphoblastic leukaemia and volvulus of the caecum.

The mortality occurred in 7 patients (63.6%); these were all the patients with liver diseases, the patient with acute leukemia, 1 patient each with idiopathic perforation of the jejunum and caecum.

Comments

Operative interventions could have been avoided in those 4 patients with ruptured liver tumours and a patient with acute leukaemia with coagulopathy if the appropriate diagnostic facilities were available; these cases accounted for (45.6%) of the total number of cases in this review. However, it is often difficult especially in our type of setting to be able to carry out essential investigations in patients presenting with surgical acute abdomen without resulting to unnecessary delay before surgical intervention. Delay necessitated by insisting on some of the investigations could result in an unnecessary delay in initiating management; this may result in high morbidity and mortality in otherwise clinically clear and treatable surgical acute abdomen. The decision for surgical intervention was determined clinically in most of the patients in this study. This is based on experience in our environment where most of the cases operated upon this way eventually turn out to be surgically correctable conditions. Although, the operations did not contribute to the incidence of mortality in this group, they were, however, unnecessary efforts.

Perforation of the jejunum accounted for 9%, the jejunum is an unusual site of typhoid intestinal perforation, although there was copious purulent exudates.^{1,3-6} Perforation of the caecum is also an unusual condition, it may follow distal large bowel obstruction but this was not the case in the patient been reviewed. Although, escape of copious gas from peritoneal cavity in this patient was a clear indication of perforation this should have alerted the surgeon, missing this perforation contributed enormously to the poor outcome of this case. It is possible that due to the small size of the perforation, it could have been hidden by fibrinous exudates and adhesions, and only became clear at the second exploration. The lesson to be learnt in this case is that pneumoperitoneum indicates bowel perforation and all attempts should be made to locate this and treat accordingly before closing the abdomen. Also, when there is perforation of the caecum, obstruction at the left side of the colon especially recto-sigmoid junction should be excluded.

Although, ascaris worm has been implicated in the aetiopathogenesis of some of these unexplained perforation but ascaris worms were neither present in the intestines nor in the peritoneal cavity of this patient. Although, there was no unanimous support for the claims that *Ascaris lumbricoides* could be responsible for this unexplained intestinal perforations. Dickson⁷ supported by Olurin et al⁸ presumed that, worms wandered out following perforation by other means. It was assumed by some authors that ascaris worms may cause intestinal perforation by pressure necrosis.⁹⁻¹¹

Stomal ulceration is a known complication of a gastrojejunos-

tomy, although a rare complication, its perforation is even a more rare occurrence. The cases of perforation of malignant tumours of stomach and sigmoid colon were probably due late presentation and diagnosis, a common phenomenon in our environment.

In conclusion, operation could have been avoided in about half of the cases in this study with appropriate diagnostic measures.

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