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CASE REPORTS

Forgotten foreign bodies in the abdomen

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Abstract
In order to study the pattern, clinical presentation and management outcome of forgotten foreign bodies in the abdomen, we prospectively studied seven cases managed at the Surgical Service of Jos University Teaching Hospital, Jos between January 1997 and December 2003. The age ranged from 10 to 63 years with a mean of 33 years. There was no sex predilection as the male/female ratio was 1:1.3. The commonest complaints were abdominal pain in all the cases and fever in majority (86%) of the cases. The foreign bodies were textile materials in the form of gauze and abdominal packs in 6(85.7 %) cases and metal artery forceps in one (14.3%) case. The surgical operations involved were laparotomy in 5(71.4%), open prostatectomy in one (14.3%) and appendicectomy in one (14.3%). There was no mortality but there were 6(85.7%) complications. The significance of this study is to create awareness of this ever present danger at every laparotomy and to emphasize the need for the operating surgeon to remain meticulous, diligent and to supervise every aspect of the operation including taking good note of the instrument counts at both elective and emergency surgical procedures.

Key words: Forgotten foreign bodies, abdominal surgery, diligence, surgical supervisor

Introduction

Forgotten foreign bodies in the abdomen constitute an uncommon surgical problem, which is associated with high mortality and morbidity. [1 - 3] It occurs in every clime and even in tertiary hospitals with all the modern ancillary aids. [1-6] The foreign bodies are commonly textile materials (gauze and abdominal packs), [1,2,4,5] metal instruments such as artery forceps[3] or rubber/tube drains. [6]The incidence is commoner in emergency than elective cases. [1] The clinical presentation may be asymptomatic and discovered during routine investigations for other conditions, or it may present in any one or more of these forms: a pseudotumour, an obstructive lesion or a septic focus. [1, 4,5,7] A detailed history and physical examination as well as plain abdominal x-rays, ultrasonography, CT scan and magnetic resonance imaging are diagnostic. [5]

The commonest characteristic of the surgeon who forgets foreign bodies in the abdomen of his patients is his tendency to neglect important issues that would impact on outcome as he operates. [1] Other important characteristics include poor training and inadequate surgical skills, loss of control in the face of unexpected findings at surgery, relegation of duties to his inappropriate subordinates, undue haste and disregard for the principles of surgery. Forgotten foreign bodies in the abdomen could lead to litigations in the form of surgical malpractice with negative impact on the surgeon and the hospital where he practices. [8] We therefore undertook a prospective study of all the iatrogenic foreign bodies in the abdomen of patients managed at the Jos University Teaching Hospital, Jos, Nigeria between January 1997 and December 2003 with a view to determine the pattern, mode of presentation and management outcome.

Case reports

Case 1
A 12 years old pupil was referred to the Accident and Emergency Unit of the Jos University Teaching Hospital ten days after appendicectomy in a private clinic with pain, fever, constipation, mild abdominal distension and purulent discharge from her appendicectomy wound. She was febrile and wasted with tender, doughy swelling in the right iliac fossa. Her wound culture yielded gram-negative bacilli sensitive to genticin and ceftriaxone. She was promptly resuscitated and at laparotomy two pieces of

gauze swabs bathed in pus were removed from the right iliac fossa. Though she had post-operative wound infection, she made remarkable progress, was discharged and followed up for six months in good health.

Case 2

A 63 years old farmer was referred to the Surgery Clinic of Jos University Teaching Hospital six months after transvesical prostatectomy at a Cottage hospital. He was febrile with chills and rigors, pain in the suprapubic region and had been passing fowl smelling urine since surgery. He was promptly resuscitated and was given a third generation cephalosporin based on culture and sensitivity. Abdominal ultrasonography showed a free, mobile foreign body in the urinary bladder. At exploration, four pieces of gauze were found packed in the prostatic bed and a free gauze was found in the urinary bladder – all the pieces of gauze encrusted with greenish, offensive purulent material which culture yielded E. coli and Pseudomonas species sensitive to ceftriaxone and gentamycin. He has remained well at 9 months of follow up.

Case 3

A 35 years old civil servant was referred to our Emergency Unit with features of intestinal obstruction and excruciating periumbilical pain thirteen days after a segmental resection and anastomosis for a strangulated incisional hernia. Her features were suggestive of intestinal obstruction secondary to strangulation of the small intestine. She was referred with plain abdominal x-rays, which showed the presence of a long artery forceps in the peritoneum. Repeat plain abdominal x-rays re-confirmed the presence of the foreign body in the abdomen. At exploration a 20-cm artery forceps was found clamped on the mesentery of a strangulated loop of the ileum. Resection and anastomosis were effected. Her post-operative wound infection was controlled. She is well at 8 months of follow up.

Case 4

A 10-year-old boy was referred to us two weeks after bowel resection for typhoid perforation of the ileum at an out station General Hospital. He was referred with complaints of abdominal pain, fever, nausea and vomiting. He came along with an ultrasound report showing an ill-defined mass in the left iliac fossa. He was febrile with features of intestinal obstruction and a tender ill-defined swelling in the left iliac fossa. He was resuscitated and at laparotomy, a medium size abdominal pack without a radio-opaque marker was removed from the abdomen. His wound was infected post-operatively. The patient is well at 6 months of follow up.

Case 5

A 50 years old civil servant was referred to the Accident & Emergency Unit with severe right hypochondrial pain, fever and tenderness in the right upper abdomen six months after open cholecystectomy in a private clinic. She was promptly resuscitated and the abdominal ultrasonographic report she was referred with showed a complex mass in the right upper abdomen. At laparotomy, an abdominal pack without a marker was removed. She made remarkable progress with no complication during the two months follow up.

Case 6

A 39 years old teacher was referred to the surgical unit ten days after tubal surgery for primary infertility in a private clinic. She presented with abdominal pain, fever, loss of weight, constipation and leakage of bile stained intestinal fluid from the surgical scar. She was promptly resuscitated and at laparotomy, two perforations of the ileum leaking copious amount of intestinal fluid, interloop abscesses as well as two free pieces of gauze bathed in pus were found. The pieces of gauze were extracted and resection and anastomosis and peritoneal lavage were effected. She survived with wound infection and superficial wound dehiscence. She has been followed up for two years without further complaints.

Case 7

A 23 years old student was referred to Jos University Teaching Hospital with left hypochondrial pain and heaviness following splenectomy three weeks before at a Cottage Hospital where a postoperative abdominal ultrasonography showed an ill defined complex mass in the left upper abdomen. Abdominal x-rays did not give further information. At laparotomy, a gauze pack was removed from the area of the splenic bed. The pack had no radio-opaque marker. The patient recovered with mild wound infection, which was controlled.. He remained in good health during his six months follow up.

Table 1: Summary of 7 patients with forgotten abdominal foreign bodies

Case	Age (years)	Sex	Type of surgery	Duration of symptoms	Foreign body extracted	Complications
1.	12	F	Appendicectomy	10 days	Free gauze	Wound infection.
2.	63	M	Prostatectomy	6 months	Free gauze	Wound infection
3.	35	F	Bowel resection	13 days	Artery forceps	Wound infection
4.	10	M	Bowel resection	2 weeks	Gauze pack	Wound infection
5.	50	F	Cholecystectomy	6 months	Gauze pack	Nil
6.	39	F	Tubal surgery	10 days	Free gauze	Superficial wound dehiscence
7.	23	M	Splenectomy	3 weeks	Gauze pack	Wound infection

Discussion

The incidence of forgotten foreign bodies in the abdomen is low constituting about 0.03% of all laparotomies but it is associated with high mortality rates of up to 26% and complications are many[1]. In this study, there were no deaths but the morbidity rate was 86%. It occurs in both developing and the industrialized countries as cases have been reported in Germany, [4] Belgium, [5]Tunis, [7] Russia, [1] Turkey, [2,6] Saudi Arabia, [3] Denmark, [9] Bulgaria[10] and the United States of America.[11] This study therefore adds a tropical perspective to world literature on the subject.

The patients in whom foreign bodies were forgotten in their abdomen span both children and adults. In this study, children constituted 29 % while adults made up 71% and there was no gender preference. Dull abdominal pain was the commonest complaint. Majority (71%) of the patients in this report presented early between one and three weeks while 29% presented late after retaining the foreign bodies for up to six months without complaints. There was no patient whose foreign body was discovered accidentally as had been reported by other workers where foreign bodies in the abdomen were asymptomatic for years. [1,3,11] No foreign body is innocuous in the abdomen; over time they are known to become symptomatic. Symptomatic patients with forgotten foreign bodies in their abdomen present as pseudotumour, [4,5] septic mass or as intestinal obstruction in the form of intra-luminal or adhesive obstruction. In this study, 28.6% of the cases presented as pseudotumour, 42.8% % as septic focus while 28.6%% presented as intestinal obstruction as shown in Table 1.

The patients and their relatives as well as the surgeon who forgot the foreign body often suspect that a forgotten foreign body could be the problem of the patient with complaints after initial abdominal surgery. This was evident in this study where 57 % of the patients were referred with radiological and ultrasonic evidence of foreign bodies in the abdomen of the patients. In this tropical series, the abdominal operations in which foreign bodies were forgotten ranged from relatively minor and common procedure like appendicectomy to major abdominal operations quite unlike the experience of workers in industrialized countries where the operations were major abdominal procedures.[1, 4,5,6,11] Sobbotin and co-worker[1] had reported that foreign bodies were forgotten more often in emergency than in elective cases; this is in agreement with our observation in this report.

Plain abdominal radiographs are diagnostic when metal objects and textile gauze and pads with radio-opaque markers are forgotten. None of the gauze or abdominal pad in this report had a radio-opaque marker and so could not be diagnosed by plain abdominal radiographs. This therefore emphasizes the need for every piece of gauze or pad used in abdominal surgery to have radio-opaque markers and so make diagnosis by radiograph easy. Ultrasonographic scans show pseudotumour formed by gauze and pads as a mass with hypoechoic rim and a strong posterior shadow while computed tomographic scan shows the mass with internal heterogenous densities. [5,9,11,12] Textile materials in the form of gauze and abdominal pads were forgotten most commonly constituting 86% of all the foreign bodies. This is in agreement with the observation of other workers. [1,2,4,5,7] In one (14%) patient, an artery forceps was forgotten and it led to strangulation of a loop of small intestine. Awe[3] encountered a forgotten artery forceps in his report and it also led to strangulation of a loop of small bowel. Gokalp and co-worker[6] had reported a forgotten rubber drain in the abdomen – a rare situation, which we did not encounter in this series. Gross negligence of basic principle of surgery and poor training were the commonest reason for a surgeon to forget a foreign body in the abdomen in this series – an observation highlighted by other workers. [1] The status of the surgeon did not exclude the possibility of forgetting foreign bodies in the abdomen. In this report, the operations were carried out by consultant surgeons in 2(29%) cases while registrars and general practitioners carried out the surgery in 5(71%) of the cases.

In view of the medical malpractice suits and the high rates of morbidity and mortality associated with forgotten foreign bodies in the abdomen, [8] whenever a surgeon forgets a foreign body in his patient, it behoves the institution where he works to re-evaluate his ability to offer safe surgery to patients. To successfully prevent foreign bodies being forgotten in the abdomen, the surgeon should be constantly aware of his role as the leader in the operating suite and so should be vigilant, meticulous and supervise every aspect of the operation including gauze counts at the beginning and the end of every elective and emergency abdominal operation.

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