CASE REPORT

A play that went wrong: Unique presentation of bowel perforation from an unusually large per-rectal foreign body

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SUMMARY

Colorectal foreign bodies (FBs) are not unheard of in the province of surgery. They are commonly seen in men ranging from 20 to 90 years of age with a bimodal age distribution. A variety of objects have been described and reported in literature. Management involves a complete history and examination followed by the necessary investigations. Most of the time they can be removed at bedside with some manipulation techniques employing the use of some ingenious devices and/or endoscopy for adamant objects. But persistent FBs or those that are high in the rectum or those that present with complications will require operative management. We present a case of a 77 cm long FB inserted rectally for sexual gratification in a male patient, which caused a large bowel perforation, ending high intra-abdominally at the level of the spleen and diaphragm after traversing the entire abdominal cavity and requiring a laparotomy for removal.

BACKGROUND

Colorectal foreign bodies (FBs) are not an uncommon presentation and occur most commonly for sexual purposes, but cases of them resulting from medical and criminal purposes have been reported in the literature. They pose a varying degree of dilemma when it comes to management protocols. Management largely depends on the size, type and position of the FB and whether it has caused any associated complications and should always be carried out in a systematic way. To our knowledge, this case is the first of its kind and exclusive due to the enormous size and the position of the FB involved leading to a major laparotomy.

CASE PRESENTATION

A 53-year-old male patient presented to the accident and emergency (A&E) department with complaints of severe lower abdominal pain and gave a history of intentional non-battery-operated sex toy insertion into the rectum under heavy alcohol influence, which led to loss of control on the toy and losing it inside the rectum.

On initial examination, the patient had mild tachycardia, tachypnoea, a stable blood pressure and tender in the left iliac fossa. A digital rectal examination was performed, which revealed an empty collapsed rectum with some blood; however, the FB was not felt.

He was stabilised initially in the A&E department and underwent a plain abdominal X-ray film (figure 1), which showed a smooth shadow traversing the right side of the abdomen. An erect chest X-ray did not show any free air under the diaphragm. The surgeons were called in for further evaluation when he informed the team that the toy he used was almost three-quarters of a metre. He underwent a CT scan which showed a large FB with its lower end in the upper part of the rectum, which had perforated the rectosigmoid junction (figures 2 and 3) and went up the abdomen on the right side, curving to the left near the hepatic flexure and ending between the spleen and the abdominal wall (figure 4). There were no signs of localised peritoneal irritation or any other intra-abdominal visceral injury.

OUTCOME AND FOLLOW-UP

Patient was consented and prepared for surgery and underwent an exploratory midline laparotomy for removal of the FB (figure 5). During the surgery, a near total transection was identified at the rectosigmoid junction at the level of the sacral promontory,

Figure 1 Abdominal X-ray showing foreign body (arrow).

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Figure 2 CT scan coronal section showing site of perforation(arrow).

involving 75% of circumference of the bowel. The FB was seen entering the peritoneal cavity at that point and lying freely inside. A small serosal tear almost 10 cm proximal to the perforation was also identified (figure 6). There was minimal faecal contamination as the FB had completely sealed the perforation site, and hence anterior resection was performed. Approximately 20 cm of sigmoid colon with the perforated segment was excised and the bowel repaired with primary anastomosis. A diverting loop ileostomy was created. The abdominal cavity was washed and closed.

Figure 3 CT scan transverse section showing site of perforation(arrow).

Figure 4 CT scan transverse section showing foreign body lying freely in the abdomen(arrow).

A course of antibiotics was given in the postoperative period along with other supportive management. He remained in postoperative ileus for 9 days, which was managed by nasogastric tube and total parenteral nutrition. The stoma started to function with a normal output on the 10th postoperative day when nasogastric tube was removed and enteral feeding was started. The patient was deemed stable for discharge on the 11th postoperative day with plans for follow-up in 6–8 weeks to discuss reversal of ileostomy and plans for outpatient psychiatric evaluation.

DISCUSSION

When it comes to colorectal FBs, many cases have been reported in medical literature, signifying that this situation is not unheard of. Those involved are more commonly male with ages ranging from 16 to 90 years in the literature,^{1–3} with most cases seen in patients aged between 20 and 40 years. The mean age was reported as ranging between 41 and 44 years.³

The most common cause for FB insertion is for sexual purposes, followed by criminal purposes including but not limited to assault, rape, abuse and drug trafficking. They were also seen in some patients where FB was used for medical purposes, and

Figure 5 The foreign body, removed intraoperatively.

Figure 6 Diagrammatic representation of intraoperative findings.

hence the bimodal age distribution depending on the cause was noticed in the studies. The sexual and criminal causes are being more common in the early ages, and medical causes such as relief of constipation and prostatic massage are seen more commonly in the elderly.² A vast variety of objects have been reported in case studies, for example, glass bottles, cans, aerosol sprays, candles, bulbs, sports goods, wooden rods, food items, Hoover extensions, broomsticks and sexual toys including vibrators and dildos.¹⁻⁷

The literature review revealed a few methods of classification of such retained foreign objects. One such classification method, which seems to be of any practical importance, is the one which classifies these FBs into low lying and high lying.⁸ The low-lying FBs are the ones found retained beneath the rectosigmoid junction, whereas the high-lying FBs are those retained above it.⁸ Some authors have reported that the low-lying FBs are easy to remove at bedside, while the high-lying ones require the use of local, regional or general anaesthesia to aid their removal either transanally or through laparotomy. The most significant problem encountered with such cases is the delay in presentation due to embarrassment and the fact that usually these patients often first try to retrieve the object themselves which often causes migration of these objects further proximally and can induce damage to the bowel wall.

The assessment of these patients requires a careful and thorough history taking and examination process to rule out the very possible risk of complications such as perforation. The most common signs and symptoms include abdominal pain, per-rectal bleeding and rarely obstruction with or without sepsis that are associated with chronically retained objects or with other complications such as perforation and peritonitis.^{2-4,6} Most of these FBs are ingested and only 15% of patients, like in our case, present with a history of FB insertion through the rectum.⁶ A digital rectal examination (DRE) has been reported to be of paramount

importance in literature.^{3,8} It has also been advised that a DRE examination should only be conducted if the possibility of an FB being a sharp object has been ruled out with relevant investigations to prevent the examiners injuring themselves.

If signs of perforation or peritonitis are noticed on clinical examination, it is advised that assessor should not proceed with any attempts at retrieval of the object and relevant investigations should be carried out (eg, CT), and depending on the investigation's result, the patient should be planned for further management (eg, removal under anaesthesia or laparotomy). A plain X-ray of abdomen and chest will reveal the objects in most instances and sometimes useful to show evidence of perforation. A CT scan has been accurate for determining the exact position of the object and any associated complications.⁴ However, some studies suggest that in stable patients without any signs of perforation and with evidence of the FB lying low, routine investigations are of little importance.⁹ The management of such retained colorectal FBs can pose a significant dilemma and can be a tedious task requiring considerable skills and ingenuity.

The evidence from reported cases and literature review supports the idea of working the way up from non-invasive to invasive methods in retrieving the object, depending largely on the clinical condition of the patient. Studies show that more than 60%–90% of the retained foreign bodies found in the rectum can be removed via a transanal approach at the patient's bedside with some type of regional anaesthesia or conscious sedation.^{3,9,10} Some ingenious techniques are described in literature to deliver such FBs; for example, using a Foley's catheter to go past the retained object has been recommended extensively in literature.^{2,5} Some other examples that are reported include using plaster of Paris, forceps and suction devices. Even use of gimlets for wooden objects and sockets for bulbs had been reported.^{1-3,5,6} Failing such bedside methods, the patient should be taken to theatre for a deeper anaesthesia and manipulation, sometimes with the help of sigmoidoscopy or colonoscopy.¹⁻⁸ It is important to note that attempts made to retrieve the FBs should not be forced and the period of manipulation should not exceed 30 min.¹¹ The premanipulation and postmanipulation assessments of the anal sphincters are vital, and it has been advised that any damage to the anal sphincters should be observed for at least 3 months before deciding to repair.^{3,9} The patients with high-lying FBs, typically more than 10 cm from the anal verge, and those with evidence of perforation will require an operative retrieval.^{8,11,12} In such complicated presentations, that is, with a perforation, after initial stabilisation, management depends on whether the patient is stable, if the perforation is intraperitoneal or extraperitoneal and if there is significant faecal contamination. A good approach is documented as debridement, diversion, distal washout and drainage, with diversion performed for cases where presentation is delayed, in the presence of comorbidities or significant tissue damage.² The use of laparotomy has been reported rarely as definitive management for such patients and only in the presence of clear indications,^{8,11} such as failure of manual evacuation techniques and presence of complications. The laparotomy in such instances is best carried out with a lower midline incision and should involve careful manipulation and repair if required.¹³ In the absence of peritoneal contamination and cases where the colonic laceration is less than three-quarters to half of the circumference of the colon, like in this case, a primary repair can be attempted with a period of postoperative parenteral nutrition.^{4,11} The decision to make a colostomy versus primary repair alone will depend on level of intra-abdominal contamination, extent of rectal injury and chronicity of the case.⁶ The use of colonoscopy and importance of psychiatric evaluation

has been emphasised as a part of postextraction management for uncomplicated cases to rule out any missed bowel injuries and psychiatric problems, respectively.³ To our knowledge, this case is the first of its kind and exclusive due to the enormous size and the position of the FB involved leading to a major laparotomy.

Learning points

- ▶ Rectal foreign bodies (FBs) are no longer a rarity and present a dilemma for management in absence of clear guidelines, which will largely depend on the type, size and position of the FB.
- ▶ The high-lying FBs and those involved with complications usually require operative management.
- ▶ In general, the management of such FBs should be catered to individual patients and the specific scenarios they present with.

Contributors Patient was first seen, clinically assessed and prepared for surgery by SS. RK performed the surgery and was involved in the postoperative care and follow-up. SI was involved in post operative care, conceived the write-up and performed the literature search and manuscript preparation. AD was involved in the radiological findings, images and advice in preparation of the manuscript. All authors read and approved the manuscript for submission.

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