

Original Article

Surgical Management of Anorectal Foreign Bodies

H Cinar, M Berkesoglu¹, M Derebey², E Karadeniz³, C Yildirim⁴, K Karabulut², T Kesicioglu⁵, K Erzurumlu²

Department of General Surgery, Faculty of Medicine, Ordu University, Ordu, ¹Department of General Surgery, Mersin University, Mersin, ²Department of General Surgery, Ondokuz Mayıs University, Samsun, ³Department of General Surgery, Atatürk University, Erzurum, ⁴Department of General Surgery, Ordu Public Hospital, Ordu, ⁵Department of General Surgery, Faculty of Medicine, Giresun University, Giresun, Turkey

ABSTRACT

Purpose: Anorectal foreign bodies (AFBs) inserted into anus constitute one of the most important problems needing surgical emergency due to its complications. We describe our experience in the diagnosis and treatment of AFBs retained in the rectosigmoid colon. **Materials and Methods:** Between the years 2006 and 2015, a total of 11 patients diagnosed with AFBs were admitted to an emergency room and general surgery clinics. They were diagnosed and treated in four different hospitals in four different cities in Turkey. Information on the AFBs, clinical presentation, treatment strategies, and outcomes were documented. We retrospectively reviewed the medical records of these unusual patients. **Results:** Eleven patients were involved in this study. All patients were male with their mean age was 49.81 (range, 23–71) years. The time of the presentation to the removal of the foreign bodies ranged between 2 h and 96 h with a mean of 19.72 h. Ten patients inserted AFBs in the anus with the purpose of eroticism but one patient's reason to relieve constipation. The objects were one body spray can, two bottles, three dildos, two sticks, one water hose, one corncob, and one pointed squash. Three objects were removed transanally after anal dilatation under general anesthesia. Eight of the patients required laparotomy (milking, primary suture, and colostomy). Five of the patients had perforation of the rectosigmoid colon. Abdominal abscess complicated extraction in one patient after the postoperative period. The hospitalization time of the patients was 6.18 (1–16) days. None of the patients died. **Conclusions:** A careful assessment is a key point for the correct diagnosis and treatment of AFBs. Clinical conditions of patients and type of AFBs are important in the choice of treatment strategy. If the AFBs are large, proximally migrated or the patients with an AFB have acute abdomen due to perforation, pelvic abscess, obstruction, or bleeding, surgery is needed as soon as possible. There are different types of surgical approaches such as less invasive transanal extraction under anesthesia and more invasive abdominal routes such as laparotomy or laparoscopy. The stoma can be done if there is colonic perforation. In the management of AFBs, the priority must be less invasive methods as possible.

KEYWORDS: Acute abdomen, anorectal foreign body, eroticism, surgical treatment

Date of Acceptance:
14-Nov-2017

INTRODUCTION

Anorectal foreign bodies (AFBs) are sometimes seen in the emergency room or general surgery clinics. AFB is an important cause of emergency surgery. Majority of foreign bodies are introduced through the anus, but sometimes, a foreign body may be swallowed accidentally and get stucked in the rectum.^[1] Foreign body insertion in the anorectal region has been extensively described in the literature, with the earliest

reports dating back to the 16th century.^[2] The transanal introduction of foreign body can be observed in prisoners, psychiatric patients, homosexuals, drug traffickers, cases of rape, people who uses drugs or alcohol, suicide attempts, and people purposed eroticism.^[3-7] The main

Address for correspondence: Dr. H Cinar, Department of General Surgery, Faculty of Medicine, Ordu University, Ordu, Turkey.
E-mail: drhamzacinar@gmail.com

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: reprints@medknow.com

How to cite this article: Cinar H, Berkesoglu M, Derebey M, Karadeniz E, Yildirim Ç, Karabulut K, et al. Surgical management of anorectal foreign bodies. *Niger J Clin Pract* 2017;XX:XX-XX.

Access this article online	
Quick Response Code: 	Website: www.njcponline.com
	DOI: 10.4103/njcp.njcp_172_17
	PMID: *****

purpose of AFB is for eroticism.^[7] In these cases, admission to the hospital is nearly always delayed due to the embarrassment, and a wide spectrum of injuries are associated.^[2,8] It is important for the emergency room physicians and general surgeons to be familiar with the foreign bodies, the variety of the extraction techniques and management of colorectal injuries resulting from the insertion or extraction of the foreign body. In this study, we present our experience in the diagnosis and surgical treatment of AFBs inserted in the rectosigmoid colon.

MATERIALS AND METHODS

We collected the medical records of the patients admitted with AFB inserted in the anus between the years 2006 and 2015 in four different hospitals in four different cities in Turkey. Information relating to the AFB, clinical presentation, laboratory, and radiologic evaluation, treatment strategies, surgical approach, and postextraction follow-up and complications were collected. Approval for the study was obtained from the Ethics Committee of Ordu University, Turkey.

RESULTS

All 11 patients were male and the median age of the patients was 49.81 (23–71) years. The time for presentation to the removal of the AFB is a range of 2–96 h with a mean of 19.72 h. The purpose of inserting AFB was to stimulate erotic feeling in 10 patients, and one patient had inserted it for the treatment of constipation [Table 1]. The AFBs were one body spray can, two bottles, three dildos, two sticks, one water hose, one cornocop, and one pointed squash. Anorectal bleeding, anal pain, abdominal distention, abdominal pain, and tenderness were the common complaint in majority of the patients. According to the abdominal physical examination in five patients, abdominal tenderness, rebound, and muscle rigidity in lower abdomen were seen because of colonic perforation. In two patients, abdominal physical examination revealed abdominal distention and pain relating to subileus. The abdominal physical examination was normal in the other four patients. Six patients had anorectal pain and bleeding and five patients had normal anal examination. Ten patients tried to remove the AFBs before coming to the hospital.

Six patients of eleven (54.5%) had elevated white blood cell count. Abdominal roentgenograms were used to show the location of AFB in all patients [Figures 1 and 2]. In five patients, computerized tomography (CT) scans were performed for the perforation suspicion.

In this study, the patients except the five who had acute abdomen, we primarily tried to remove the AFB through

Table 1: Informations about the patients

Variable	Number
Number of patients	11
Median age	49.81 (23-71) years
Male/female	11/0
Purpose of the patients with AFB	Eroticism: 10 patients Constipation treatment: 1 patient
Trying to remove the AFB before admitting to hospital	10 patients
AFB removing through laparotomy	8 patients
AFB removing through transanally	3 patients
Median presentation time/h	19.72 (2-96) h
Median hospitalization time/day	6.18 (1-16) days

AFB=Anorectal foreign bodies

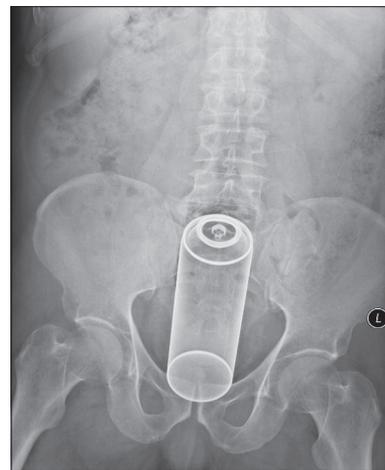


Figure 1: An abdominopelvic roentgenogram showed a bottle of deodorant

anal route in the clinic without anesthesia, but we failed in all patients because of the shape and location of the objects and limited dilatation capacity of the anus. AFBs in three patients were removed transanally by anal dilatation under general anesthesia. In eight patients, we needed laparotomy for the treatment. The objects removed from the patients were one body spray can, two bottles, three dildos, two sticks, one water hose, one cornocop, and one pointed squash.

Three patients had low located AFBs, and transanal extraction under anesthesia was enough for the treatment. In two of the three patients, the objects could be removed by digital examination, but in one patient, endoscopy was used to reach the foreign body. Routine rectosigmoidoscopic examination and postextraction abdominal roentgenograms were performed in the patients to rule out pneumoperitoneum, retained foreign body, and mucosal injury. There were no pneumoperitoneum, retained foreign body, mucosal injury, and free air.

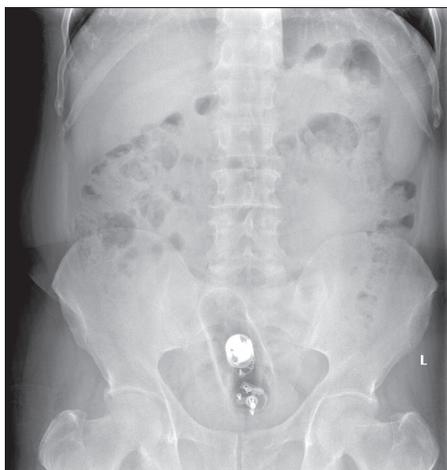


Figure 2: An abdominopelvic roentgenogram showed a vibrator

Eight patients needed laparotomy for extraction of foreign objects and seven of them, the AFBs were situated high above in the rectosigmoid junction and in remain. One was lying low in the rectosigmoid junction with perforation. Five patients with acute abdomen due to perforation underwent to surgical emergency. The perforations were treated by primary suture/proximal colostomy in four patients and primary suture/loop ileostomy in one patient. In three patients, rectosigmoidoscopy was performed, but foreign body could not be removed so the patients underwent surgery. Three AFBs were removed transanally by abdominal manipulation (milking) during surgery. The hospitalization time of the patients was changed 1–16 days with a mean of 6.18 days. One patient had abdominal abscess treated with antibiotics. There was no mortality in the study.

DISCUSSION

AFBs are important emergency surgery reasons due to the complications which are related with the objects. The incidence of AFBs is increasing, specifically in urban population.^[8,9] The majority of cases are male in their third and fourth decades.^[2,8,9] There is a bimodal age distribution with peaks in patients with AFB, and purpose of anorectal eroticism was seen in the twenties, and purpose of constipation treatment and prostatic massage was seen in the sixties.^[1]

In these cases, the patients usually present late to the hospital because of shame with incomplete medical history including the presence of the object.^[10,11] The patients usually try to remove the AFB at home. The efforts may damage to anorectal region of the patients and usually cause delay in presentation. A study by Kurer *et al.* found that 58.5% of the cases were admitted to the hospital on the same day and 32.1% of the cases 2–7 days after the event. Just one patient waited for

6 months after the event.^[2] In our study, 81.8% of the cases were admitted to the hospital on the same day and 18.2% of the cases 2–4 days after the event. The use of various instruments for removing the AFB before presenting in the hospital increases the risk for laceration and perforation of colon. The trials may push the foreign body further into the colon and may cause peritonitis, pelvic abscess, sepsis, anal sphincter damage, and anal bleeding.^[12]

AFBs can be introduced into the anus for sexual eroticism, self-treatment of anorectal disease, and constipation, during rape or accidents and drug smuggling.^[8,13,14] In the literature, 80% of cases with AFB occur for the purpose of anorectal eroticism, and 10% of cases occur for sexual assaults.^[14] Another interesting type of AFB is body packing which is used by drug traffickers.^[8] In our study, 90.9% of the cases with an AFB occurred for purpose of eroticism, and 9.1% of the cases with an AFB occurred for resolving the constipation problem. The objects which were inserted to anus are sex toys, bottles, cans, sticks, jars, pipes, tubes, fruits, vegetables, and stones.^[15] We can classify AFBs as high lying and low lying depending on their locations in relation to the rectosigmoid junction.^[16] Hard AFBs may cause perianal fissure, fistula, or abscess due to contact with anorectum.^[17]

Diagnosis of foreign body in the anorectal region depends on detailed clinical history, physical examination of anus and abdomen, abdominopelvic radiographies, CT, and rectosigmoidoscopy. The symptoms of foreign body in anorectal region are lower abdominal pain, anorectal pain, and bleeding.^[18] Majority of AFBs can be detected using lateral and anteroposterior plain X-ray film of the abdomen and pelvis.^[8,19,20] Chest radiographies should be performed to detect air under the diaphragm from perforation of the colon.^[21] We can see AFBs with plain radiographies, but nonvisualization of any material with X-rays does not rule out the presence of objects such as plastic material, candles, very thin glasses, fruits, and vegetables.^[8,19] The radiological visualization of a foreign body depends on its radiopacity.^[22,23] If the patient has a perforation suspicion or pelvic abscess, a CT scan is indicated.^[24,25] Laboratory tests in the patients with an AFB are not useful for the diagnosis but may be used in the patients with an AFB who have a perforation, and the white blood cell count may be elevated in these patients. It is important to note that physical examination is more useful than laboratory tests for detecting the extent of injury.^[26]

The therapeutical approach of AFB depends on the type of the object, the patient's clinical situation, and the location of the object inside the anorectal area.^[27] The location of AFBs is an important factor for therapeutical

management. If AFBs are above the rectosigmoid junction, they are often unreachable with fingers and rigid rectosigmoidoscopy, but if the AFBs are low lying from the rectosigmoid junction, they are palpable with digital examination and are candidates for clinic removal either manual manipulation or endoscopic extraction through anus. A lot of surgical and nonsurgical techniques have been defined to remove AFBs in the literature.^[28] In the majority of cases, AFB can be removed transanally with/without anesthesia, but if it fails, then, a transabdominal procedure should be used.^[1,8,29]

If the diagnosis of AFB is confirmed, the treatment strategy must be to remove it through the anal way, but this method can be difficult because of the shape of the foreign body, anorectal anatomy, sacral curvature, and anal sphincter spasm. If sufficient sphincter relaxation and anal dilatation cannot be obtained with proper anesthesia, lateral internal sphincterotomy can be done to remove the AFB.^[30] If the AFB is located high in the rectum or even in colon, colonoscopy or rectosigmoidoscopy is mostly helpful to withdraw and remove the foreign body. Direct vision of endoscopy protects the patients from iatrogenic injuries.^[9,31]

Depending on the size and shape of the objects, a lot of less invasive approaches have been defined in the literature to remove AFBs from anal route using foley catheter, Sengstaken–Blakemore tube, obstetrical forceps, and vacuum extractor.^[32] Direct visualization with rigid or flexible rectosigmoidoscopy is recommended in all cases, in whom AFBs are removed from anus to evaluate the status of the anorectum and rule out ischemia, wall perforation, and sphincter damage.^[8] For detecting the possible complications after the trials, patients should be kept under observation for at least 12–24 h.^[33]

If conservative methods fail, surgical approaches are indicated. More invasive procedures of AFB management are laparoscopy and laparotomy. Laparoscopic milking (withdrawing the proximally migrating AFB into the rectum with gentle transperitoneal pressure) method for transanal removal of AFB has been described in the literature.^[34,35] Laparotomy is the last treatment option and may be needed when removing the AFBs using the transanal approach failed or the presence of complications such as pelvic abscess, intraabdominal bleeding, and perforation. In laparotomy, milking is the first step, so the object pushes distally into the rectum and removal of objects through anal route. If the shape of the object is unfavorable for milking, we need a colotomy for the removal of the AFB. The colotomy can be primarily repaired with or without a stoma. If there is damage on the colonic wall, segmental colonic resection and anastomosis with/without a stoma can be done.

Stoma is essential for patients who have perforation with extensive fecal peritoneal contamination, signs of sepsis, and hemodynamic instability.^[1,8]

CONCLUSIONS

A careful assessment is the key point for the correct diagnosis and treatment of AFBs. Clinical conditions of patients and type of AFBs are important in the choice of treatment strategy. If the AFBs are large or proximally migrated or the patients with an AFB have acute abdomen due to perforation, pelvic abscess, obstruction, or bleeding, surgery is needed as soon as possible. There are different types of surgical approaches such as less invasive transanal extraction under anesthesia and more invasive abdominal routes such as laparotomy or laparoscopy. Stoma can be done if there is colonic perforation. In the management of AFBs, the first priority must be less invasive methods as possible.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

REFERENCES

1. Akhtar MA, Arora PK. Case of unusual foreign body in the rectum. *Saudi J Gastroenterol* 2009;15:131-2.
2. Kurer MA, Davey C, Khan S, Chintapatla S. Colorectal foreign bodies: A systematic review. *Colorectal Dis* 2010;12:851-61.
3. Cohen JS, Sackier JM. Management of colorectal foreign bodies. *J R Coll Surg Edinb* 1996;41:312-5.
4. Rodríguez-Hermosa JI, Codina A, Alayrach J, García Oriá MJ, Pont Vallés J, Farrés Coll R, *et al.* Management of foreign bodies in the rectum. *Cir Esp* 2001;69:404-7.
5. Lledo S, Roig JV. Anorectal trauma and their sequelae. *Cir Esp* 1991;50:472-9.
6. Fry RD. Anorectal trauma and foreign bodies. *Surg Clin North Am* 1994;74:1491-505.
7. Busch DB, Starling JR. Rectal foreign bodies: Case reports and a comprehensive review of the world's literature. *Surgery* 1986;100:512-9.
8. Goldberg JE, Steele SR. Rectal foreign bodies. *Surg Clin North Am* 2010;90:173-84.
9. Lake JP, Essani R, Petrone P, Kaiser AM, Asensio J, Beart RW Jr. Management of retained colorectal foreign bodies: Predictors of operative intervention. *Dis Colon Rectum* 2004;47:1694-8.
10. Alonzo Aguirre PA. Colorectal foreign bodies: A complex medical problem. *Rev Esp Enferm Dig* 2001;93:627-30.
11. Clarke DL, Buccimazza I, Anderson FA, Thomson SR. Colorectal foreign bodies. *Colorectal Dis* 2005;7:98-103.
12. Munter DW, Dronen SC. Rectal Foreign Bodies, *Rectum Emergency Medicine* web site. Available from: <http://www.emedicine.medscape.com/article/776795>. [Last updated on 2015 Dec 28].
13. Koornstra JJ, Weersma RK. Management of rectal foreign bodies: Description of a new technique and clinical practice guidelines. *World J Gastroenterol* 2008;14:4403-6.

14. Barone JE, Sohn N, Nealon TF Jr. Perforations and foreign bodies of the rectum: Report of 28 cases. *Ann Surg* 1976;184:601-4.
15. Memon JM, Memon NA, Solangi RA, Khatri MK. Rectal foreign bodies. *Gomal J Med Sci* 2008;6:1.
16. Hellinger MD. Anal trauma and foreign bodies. *Surg Clin North Am* 2002;82:1253-60.
17. Choi DH. Acute anal pain due to ingested bone fragments. *J Korean Soc Coloproctol* 2008;24:51-7.
18. Yanar H, Yanar F, Ağacaogulu O. Anorectal Foreign Bodies. In: Menten B, Bulut MT, Alabaz Ö, Leventoğlu S, editors. *Anorektal Yabancı Cisimler, Anorektal Bölgenin Selim Hastalıkları [Benign Anorectal Diseases]*. Turkish Colon and Rectum Surgeon Association Publications: Ankara; 2011. p. S329-39.
19. Ayantunde AA, Oke T. A review of gastrointestinal foreign bodies. *Int J Clin Pract* 2006;60:735-9.
20. Huang WC, Jiang JK, Wang HS, Yang SH, Chen WS, Lin TC, *et al.* Retained rectal foreign bodies. *J Chin Med Assoc* 2003;66:607-12.
21. Yıldız SY, Kendirci M, Akbulut S, Ciftci A, Turgut HT, Hengirmen S. Colorectal emergencies associated with penetrating or retained foreign bodies. *World J Emerg Surg* 2013;8:25.
22. Pattamapaspong N, Srisuwan T, Sivasomboon C, Nasuto M, Suwannahoy P, Settakorn J, *et al.* Accuracy of radiography, computed tomography and magnetic resonance imaging in diagnosing foreign bodies in the foot. *Radiol Med* 2013;118:303-10.
23. Pinto A, Brunese L, Daniele S, Faggian A, Guarnieri G, Muto M, *et al.* Role of computed tomography in the assessment of intraorbital foreign bodies. *Semin Ultrasound CT MR* 2012;33:392-5.
24. Rodríguez-Hermosa JI, Codina-Cazador A, Ruiz B, Sirvent JM, Roig J, Farrés R, *et al.* Management of foreign bodies in the rectum. *Colorectal Dis* 2007;9:543-8.
25. Choi PW, Lee JM, Heo TG, Park JH, Lee MS, Kim CN, *et al.* Rectal foreign body (glass cup) extracted by laparotomy. *J Korean Surg Soc* 2008;74:448-51.
26. Coskun A, Erkan N, Yakan S, Yıldırim M, Cengiz F. Management of rectal foreign bodies. *World J Emerg Surg* 2013;8:11.
27. Yaman M, Deitel M, Burul CJ, Shahi B, Hadar B. Foreign bodies in the rectum. *Can J Surg* 1993;36:173-7.
28. Richter RM, Littman L. Endoscopic extraction of an unusual colonic foreign body. *Gastrointest Endosc* 1975;22:40.
29. Nivatvongs S, Metcalf DR, Sawyer MD. A simple technique to remove a large object from the rectum. *J Am Coll Surg* 2006;203:132-3.
30. Arıkan S, Akıncı M, Gülen M. Rectal foreign bodies and treatment. *Turk J Colorectal Dis* 1998;8:38-40.
31. Ahmed A, Cummings SA. Novel endoscopic approach for removal of a rectal foreign body. *Gastrointest Endosc* 1999;50:872-4.
32. Singaporewalla RM, Tan DE, Tan TK. Use of endoscopic snare to extract a large rectosigmoid foreign body with review of literature. *Surg Laparosc Endosc Percutan Tech* 2007;17:145-8.
33. Atıla K, Sökmen S, Astarcioglu H, Canda E. Rectal foreign bodies: A report of four cases. *Ulus Travma Acil Cerrahi Derg* 2004;10:253-6.
34. Berghoff KR, Franklin ME Jr. Laparoscopic-assisted rectal foreign body removal: Report of a case. *Dis Colon Rectum* 2005;48:1975-7.
35. Rispoli G, Esposito C, Monachese TD, Armellino M. Removal of a foreign body from the distal colon using a combined laparoscopic and endoanal approach: Report of a case. *Dis Colon Rectum* 2000;43:1632-4.