

Case Analysis

Management of Retained Rectal Foreign Bodies: Case Series

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Key Words

Rectal;
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Background. The purpose of this study was to review the experience with retained colorectal foreign bodies at our hospital.

Material and Methods. We retrospectively reviewed the medical records with a diagnosis of ICD9 code 937 at the emergency department of the Tri-service General Hospital from July 1990 through April 2010. Collected data, including patient demographics, extraction method, anesthesia method, and treatment, were analyzed.

Results. Retained colorectal foreign bodies were observed in 19 patients, including 14 males and 5 females. Among the foreign bodies extracted, vibrators were the most common object encountered. A large number of our patients refused to explain why the foreign body had been inserted into the rectum. In most patients, the foreign body was removed manually by topical anesthesia. Most patients were discharged without requiring hospital admission.

Conclusion. The technique for the safe extraction of a rectal foreign body usually depends on the size, shape, and contours of the foreign body. Prompt appropriate treatment by manual extraction, colonoscopy, or even surgery improves prognosis and prevents further complications.

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Retained rectal foreign bodies are a common presentation worldwide, and various shapes and sizes of rectal foreign bodies have been described in the literature. Low-lying rectal foreign bodies can sometimes be manipulated and extracted in the emergency department, whereas high-lying foreign bodies may pose a challenge and require hospital admission and removal under anesthesia. This study was designed to review the experience at our hospital with retained colorectal foreign bodies.

Material and Methods

We retrospectively reviewed the medical records with a diagnosis of ICD9 code 937 at the emergency department of the Tri-service General Hospital from July 1990 through April 2010. Finally, 19 cases of transanally introduced, retained foreign bodies were identified. Data collected included patient demographics, extraction method, anesthesia method, and treatment (Table 1). All patient data were de-linked, and the privacy of the patients was protected.

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Results

Retained colorectal foreign bodies were observed in 19 patients (Table 1), including 14 males (73.7%; mean age at time of presentation 42.5 years, range 0.8-87 years) and 5 females (26.3%; mean age at time of presentation 42.8 years, range 25-85 years). The clinical characteristics of the patients are summarized in Table 1. Among the foreign bodies extracted, vibrators were the most common (n = 7, 36.8%), followed by bottle caps (n = 4, 21.1%) and glycerin balls (n = 2, 10.5%). We also encountered a glass bottle, thermometer, pseudo-penis, plastic bar, iron wire, and soap (n = 1 for each, 5.3%). A large number of our patients refused to explain why the foreign body had been inserted into the rectum (n = 7, 36.8%). Six patients (31.6%) conceded reasons of sexual behavior. Other reasons included accidental insertion when using a

glycerin ball for treating constipation (n = 2, 10.5%), medicine for treating hemorrhoids (n = 2, 10.5%), and falling down (n = 1, 5.3%). For most patients, the foreign body could be removed manually by topical anesthesia (n = 5, 26.3%), but some required colonoscopy under heavy sedation (n = 4, 21.1%) or topical anesthesia (n = 3, 15.8%). Two patients underwent exploratory laparotomy under general anesthesia due to rectum perforation related to the foreign body. Topical anesthesia was most commonly used (n = 8, 42.1%), followed by heavy sedation (n = 5, 26.3%), general anesthesia (n = 3, 15.8%), intravenous anesthesia (n = 2, 10.5%), and spinal anesthesia (n = 1, 5.3%). Most patients were discharged after removal of the foreign body (n = 13, 68.4%); 6 patients (31.6%) were advised to admit themselves to hospital, however, 1 patient insisted on being discharged against medical advice.

Table 1. Clinical data of patients with retained rectal foreign body

	Admission time	Sex	Age	Admission	Type of foreign body	Purpose	Anesthesia	Treatment
1	1990	M	10 month		Thermometer	Unknown	GA	Rigid sigmoidoscopy
2	1990	M	47 y/o	Y	Vibrator	Sexual behavior	Topical	manual
3	1992	M	35 y/o	Y	Plastic cap	Falling down accidentally	SA	Rigid sigmoidoscopy
4	1996	M	65 y/o	Y	Vibrator	Treat hemorrhoid	GA	Exp. Lap with primary repair of rectum and T-loop
5	2002	M	28 y/o	Y	glass cup	Unknown	GA	Exp. Lap with colostomy
6	2002	F	43 y/o		Vibrator	Sexual behavior	IVG	colonoscopy
7	2002	F	25 y/o	Y	Pseudo-penis	Sexual behavior	IVG	Addis, teeth
8	2003	M	71 y/o		Feeding bottle cap	Unknown	HS	manual
9	2004	M	29 y/o		Vibrator	Unknown	HS	colonoscopy
10	2005	M	87 y/o		Iron wire	Unknown	Topical	manual
11	2006	M	26 y/o	AAD	Plastic bar	Sexual behavior	Topical	colonoscopy
12	2006	F	33 y/o		Glycerin ball	Treatment of Constipation accidentally	Topical	manual
13	2006	F	85 y/o		Soap	Unknown	Topical	colonoscopy
14	2008	F	28 y/o		Vibrator	Sexual behavior	Topical	manual
15	2008	M	58 y/o		Vibrator	Sexual behavior	Topical	Colonoscopy
16	2008	M	17 y/o		Glass bottle cap	Unknown	HS	colonoscopy
17	2009	M	23 y/o		Glycerin ball	Treatment of Constipation accidentally	HS	colonoscopy
18	2009	M	37 y/o		Vibrator	Unknown	HS	colonoscopy
19	2009	M	71 y/o		Hemorrhoid oint cap	Treatment of hemorrhoid	Topical	manual

Note: HS: heavy sedation; GA: general anesthesia; IVG: intravenous anesthesia; SA: spinal anesthesia; Exp.Lap: exploratory laparotomy; AAD: Discharge against medical advice.

Discussion

Foreign bodies in the rectum were infrequently encountered in clinical practice in previous years. However, the number of patients with rectal foreign bodies has increased more recently. For example, there were 15 cases of rectal foreign bodies at our hospital in this decade; in contrast, only 4 cases were reported in the previous decade. A large number of our patients refused to explain why they had a foreign body in their rectum (36.8%), which is because culture in Taiwan is more conservative than that of Western countries. Most patients felt shame on presentation at the hospital. However, 31.6% of our patients admitted that they used a vibrator, plastic bar, or pseudo-penis for sexual activities. Other foreign bodies we encountered included glycerin balls and bottle caps. In contrast, rectal foreign bodies have been shown to be more variable in Western countries, where sexual activities, anal eroticism, and sexual assault were more frequently reported. Clarke et al.¹ conducted a prospective study comprising Caucasian, African, and Asian populations. In this study, the extracted foreign bodies included a hosepipe and wire, aerosol caps, aerosol cans, a plastic tumbler, a primus stove, and a packet containing marijuana, which were found to have been inserted into the anal canal during sexual behaviors or assault. Marks² reported a pair of spectacles in the rectum of a 38-year-old man, probably due to anal eroticism. Black³ described that injury to the anus and rectum is uncommon in children, and that such injury is most often caused by child abuse. However, such child abuse was not observed in our study. None of the children included in our study experienced violence-related retention of rectal foreign bodies. Instead, we came across a baby who accidentally had a thermometer left in the anus during body temperature measurement. Such an accident is preventable today, because mercury thermometers were largely replaced by ear electronic thermometers 4 years ago.

The effect of different locations on treatment

Clarke et al.¹ divided rectal foreign bodies into low-lying foreign bodies and high-lying foreign bo-

dies. Low-lying foreign bodies are positioned distal to the rectosigmoid junction, whereas high-lying foreign bodies are positioned above the rectosigmoid junction. The complete relaxation of the anal sphincter plays an important role in the removal of the foreign body. Anal sphincter spasms may force the foreign body away from the anus, making removal more difficult. Thirteen of our patients (68.4%) underwent either manual extraction or colonoscopy by means of topical anesthesia or heavy sedation. A satisfactory outcome was achieved following sufficient preparation and relaxation of the anus. In contrast, high-lying foreign bodies are difficult to extract manually. Exploratory laparotomy or colonoscopy should be considered in such cases. Huang⁴ reported 4 cases with high-lying foreign bodies; 3 of these were removed by exploratory laparotomy and 1 by colonoscopy. Among our patients, 1 presented with a high-lying foreign body. He had placed a plastic bar in his anus and the bar had migrated to a position 30 cm from the anal verge. The bar was removed by colonoscopy without obvious sequelae.

The effect of different sizes and shapes on treatment

In our patients, small-sized objects could be removed either manually or by colonoscopy if no associated injury was noted. However, large-sized objects may require more effort and some ingenuity to remove. Lake⁵ concluded that large-sized rectal foreign bodies do not necessitate surgery. Instead, objects in the sigmoid colon were found to require operative intervention at rates higher than that for rectal foreign bodies. Steenvoorde et al.⁶ described the case of a 14-year-old boy who had inserted a soda can with maximal circumference and measuring 16 cm in length into his rectum. The cylindrical shape of the object made it more difficult to remove. Therefore, the treating physician changed the shape of the object by squeezing and twisting the upper end of the empty soda can, as a coned shape can pass through the anus more easily than a cylindrical shape. However, no articles have yet described definite criteria for dealing with different sizes and shapes of rectal foreign bodies. Removal of foreign bodies should therefore be

performed according to the clinician's experience and the presentation of the particular foreign body.

Special considerations

Several reports have described different methods or special tools for the removal of rectal foreign bodies. Manimaran reported the use of "Blow as well as pull"⁷ for the removal of vibrators. He used 3 standard 14 Fr urinary catheters to retain the vibrator over the rectosigmoid colon under sigmoidoscopic control. Each balloon was then inflated with 20 ml of normal saline. Serial inflation of the balloons allowed them to mould circumferentially to the shape of the foreign body and minimized the chances of sliding during attempted traction for removal. van der Wouden described the use of a custom-made giant snare to extract a vibrator.⁸ Andrabi et al. declared that Kielland forceps are a useful instrument in rare circumstances for removing colorectal foreign bodies that are large and difficult to remove by other means.⁹ They used Kielland forceps to remove both a low-lying gel jar and a metal ball. The gel jar was 9 cm in diameter and 7 cm in height, and the metal ball was 4 cm in diameter. The clinician should keep in mind that many common instruments could become useful tools when dealing with rectal foreign bodies. However, the removal of such foreign bodies requires some creativity and ingenuity.

Timing of surgical intervention

Most low-lying rectal foreign bodies can be removed manually due to the anatomy of the rectum. In contrast, surgery may be indicated for high-lying foreign bodies if colonoscopy has failed. High-lying foreign bodies may cause involuntarily anal muscle contracture and subsequently make removal of the foreign body difficult without anesthesia. Jeffrey et al.⁵ proposed that objects in the sigmoid colon require operative intervention at higher rates than rectal foreign bodies. Surgeons should avoid any unnecessary, prolonged attempts to manually remove the foreign body. If repeated attempts have failed, early surgery is indicated. In addition, if the size of the foreign body is very large, the endoscope may not be able to pass the

object, which will occupy the whole bowel lumen due to mucosal edema, thus necessitating surgery. Finally, surgery should be considered if the foreign object has resulted in bowel wall perforation with peritonitis, regardless of the original location of the object. Two patients in our study underwent emergent laparotomy; 1 presented with rectum perforation with peritonitis and the other presented with a broken glass cup in the rectum. The former patient also underwent a temporary T-loop colostomy. Both patients had good outcomes, and no further complications were noted.

Interestingly, we found that most of our patients refused to come back to our clinic after the event. This finding is probably due to the fact that most patients in our country are relatively conservative and are prone to feeling embarrassment about their condition.

Conclusion

The technique for the safe extraction of a rectal foreign body usually depends on the size, shape, and contours of the foreign body. The varied reasons for placement of a rectal foreign body have been well described. These include treatment, sexual behavior, and even occasionally accidents. It is important for the clinician to recognize the kind of foreign body involved to ensure appropriate treatment. Recognition of rectal foreign bodies relies upon appropriate patient history and physical examination and radiologic evaluation as needed. In our experience, many patients will only admit to the existence of a rectal foreign body when repeatedly asked about it. Most importantly, patients should be assessed for signs of perforation. Patients with peritoneal signs or obvious perforation of the rectum or colon wall require emergent surgical intervention. Prompt appropriate treatment by manual extraction, colonoscopy, or even surgery improves prognosis and prevents further complications.

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病例分析

處理肛門異物

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目的 針對本院對於處理肛門異物進行分析探討。

方法 從 1990 年 7 月至 2010 年 4 月，搜尋病歷診斷 ICD9 937 之病患，比較病人年齡及性別分析、肛門異物種類、處理方式及成因進行討論。

結果 共 19 位肛門異物病患至本院求診，共 14 名男性及 5 名女性。其中以按摩棒最為常見。同時，有一大部份病人 (36%) 拒絕透露為何他們把異物放入肛門。大部份病例可以靠局部麻醉以手取出異物。大部份病人不須住院處理。

結論 處理肛門異物的方式須根據物品不同的大小、形狀而有不同處理方式。快速且正確的處理可以改善預後而且避免不必要的併發症。

關鍵詞 肛門、異物、處理。