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Original Article

Retained Rectal Foreign Bodies in Adult and Elderly Patients: A 10-Year Review

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SUMMARY

Background: Retained rectal foreign body (RFB) is not an uncommon presentation in modern society, but no reviews have yet studied elderly specifically.
Methods: An 10-year retrospective review was performed for all adult patients at MacKay Memorial Hospital with RFBs. All patients' demographic and clinical data were analyzed for differences between adult and elderly patients.
Results: A total of 32 patients participated in the study. The mean age was 43.8 years and the majority were male. Foreign bodies other than vibrator were the most common foreign bodies retracted. Half of the patients refused to describe the reason for insertion. Radiologic examination was the primary diagnostic tool to detect RFBs, followed by digital rectal examination. RFBs could be extracted manually with or without local anesthesia in 75% of patients. Colorectal surgeons performed most of the extractions, followed by emergency physicians. After extraction, most patients (75%) were not admitted to the hospital and 65.6% did not attend a follow-up appointment at the surgical clinic. Adult and elderly patients differed only in age and reason for insertion. Transanal medication administration, anal medication and its accessory were more often found in the elderly group.
Conclusion: Clinicians must speak respectfully and candidly with patients in order to build a trust-based relationship. Clinicians must provide patients with detailed instruction on the proper use of transanal medication. Emergency physicians must be familiar with the surgical and non-surgical management of RFBs. No clinical difference was found between adult and elderly patients except for the reason for insertion of RFB.

1. Introduction

Retained rectal foreign body (RFB) is not an uncommon presentation in modern society. The first case report was published by Smiley in 1919.[1] Many reports on this subject have since been published. Although no reliable epidemiological data are available, Cawich et al. reported an annual incidence rate of rectal foreign bodies of about 0.13 per 100,000 in Trinidad and Tobago.[2] Other authors have reported similar incidence rates in different countries. RFBs are usually found in adults, primarily in males.[3] The reasons for insertion are diagnostic and therapeutic procedures, transanal medication administration, anal eroticism, accidental introduction and criminal assault.[4] Numerous objects, including vibrator, glass bottle, dildo, vegetable, glycerin ball and hemorrhoid ointment cap have been described as RFBs.[5,6] Most can be successfully extracted transanally under appropriate sedation or anesthesia, with only a minority of patients requiring transabdominal surgery (laparotomy or laparoscopy).[7] Despite the publication of case reports and reviews of RFBs, no reviews have included elderly subjects (65 years and older). Therefore, we retrospectively reviewed the clinical features of adult (age 18–64 years) and elderly patients with RFBs to determine the significant differences between these two groups.

2. Materials and methods

2.1. Study design

A retrospectively review of medical records was performed of all patients with the initial diagnosis of International Classification of Diseases, 9th Revision (ICD9) code 937, foreign body in anus and rectum, or ICD 10th Revision (ICD10 code) T185.XXA, foreign body in anus and rectum, during an initial encounter at Mackay Memorial Hospital, from January 2007 to December 2017. Each patient's gender, age, reason for insertion, type of foreign body, primary diagnostic tool, extraction method, anesthesia used during extraction, type of physician who performed removal, admission status and attendance at outpatient clinic follow-up appointment were recorded and analyzed. This study was approved by the hospital Institutional Review Board (18MMHIS061), which waived the requirement for informed consent.

2.2. Statistical analysis

Patients were divided into adult (age 18–64 years) and elderly

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(65 years and older) groups. Continuous variables were presented as mean and standard deviations (SDs), tested using the Mann-Whitney U test; categorical variables were presented as count and percentages, tested using Fisher's Exact Tests. Two-sided analyses were performed and evaluated at the 0.05 level of significance. All statistical analyses were performed using IBM SPSS statistical software version 22 for Windows (IBM Corp., Armonk, New York, USA).

3. Results

A total of 32 patients with RFBs participated in the study. Of these, 27 patients were in the adult group and five in the elderly group. Baseline demographic and clinical data of all patients are shown in Table 1. The mean age of all patients was 43.8 years (range, 18–82 years). The majority of patients were male (n = 29, 90.6%). Of the types of foreign bodies extracted, foreign bodies other than vibrator (including steel ball, screwdriver, cotton balls and gauze, eye drops, plastic rod and glass cup) were most common (n = 14, 43.8%), followed by vibrator (n = 8, 25%) and anal medication and its accessory (including cap of hemorrhoid ointment, package of hemorrhoid suppository, glycerin ball, n = 6, 18.8%). Transanal medication administration (including treatment for hemorrhoid, constipation, pre-radiologic examination preparation) was reported as the reason for insertion in eight patients (25%) and anal eroticism in another eight (25%). However, 16 patients (50%) refused to describe the reason for insertion. Besides careful history taking and physical examination, x-ray examination (including pelvis x-ray; abdominal x-ray; and kidney, ureter and bladder x-ray) was the primary diagnostic tool to detect RFBs (n = 19, 59.4%) (Fig. 1 & Fig. 2). Digital rectal examination (DRE) was the primary diagnostic tool in 13 patients (40.6%).

Table 1
Baseline characteristics of study population.

	Total (n = 32)
Age, years	
Gender	
Female	3 (9.4%)
Male	29 (90.6%)
Type of foreign body	
Anal medication and its accessory^	6 (18.8%)
RFB other than vibrator†	14 (43.8%)
Vibrator	8 (25.0%)
Unknown	4 (12.5%)
Reason for insertion	
Self-administered treatmentx	8 (25%)
Anal eroticism	8 (25%)
Unknown	16 (50%)
Primary diagnostic tool	
DRE	13 (40.6%)
X-ray	19 (59.4%)
Removal method	
Transanal manual removal°	24 (75%)
Sigmoidscopy	3 (9.4%)
Colonscopy	2 (6.3%)
Laparotomy	3 (9.4%)
Type of anesthesia	
No/LA	21 (65.6%)
Spinal anesthesia	2 (6.3%)
General anesthesia	9 (28.1%)
Type of physician who perform the removal	
Colorectal surgeon	20 (62.5%)
Emergency physician	12 (37.5%)
Hospitalization	
No	21 (65.6%)
Yes	11 (34.4%)
Follow-up appointment kept	
No	24 (75%)
Yes	8 (25%)

DRE: digital rectal examination; LA: local anesthesia; GA: general anesthesia.
^ Anal medication and its accessory including cap of hemorrhoid ointment, package of hemorrhoid suppository, glycerine ball.
† Rectal foreign bodies (RFBs) other than vibrator including steel ball, screwdriver, cotton balls and gauze, eye drops, plastic rod and glass cup.
x Self-administered treatment including treatment for hemorrhoid, constipation and pre-radiologic examination preparation.
° Transanal manual removal including the aid of anoscopy.

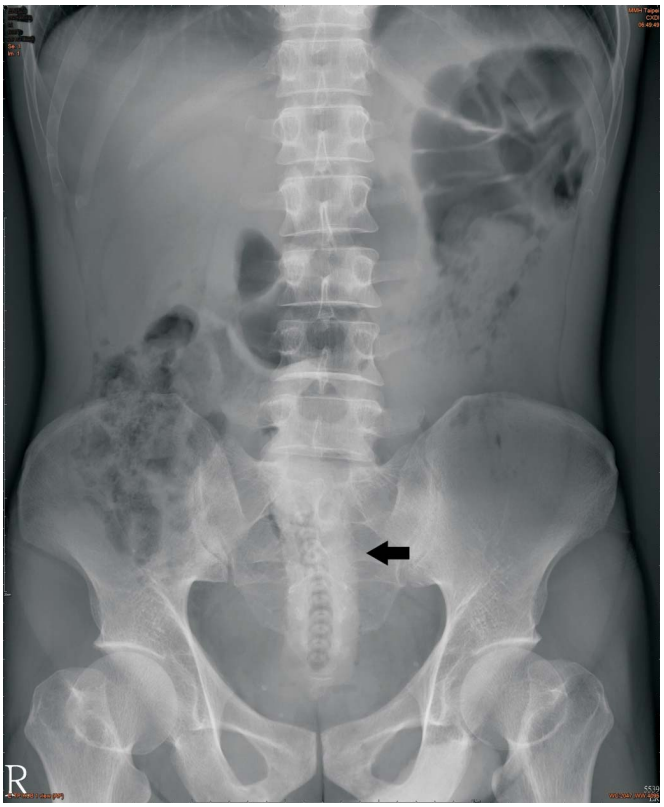

Fig. 1. Kidney, ureter and bladder x-ray demonstrated a 12.4 cm radiopaque retained rectal foreign body superimposed onto pelvic cavity.

Fig. 2. Pelvis x-ray demonstrated a 7.6 × 4.3 cm foreign body superimposed in pelvic cavity.

For 24 patients (75%), RFBs could be extracted manually or with the aid of anosopy. Three patients (9.4%) required sigmoidoscopic extraction, two (6.3%) required colonoscopic extraction and three (9.4%) underwent exploration laparotomy with the use of "milking" the RFB downward to the rectum or colotomy. Most patients (n = 21, 65.6%) required no anesthesia or only local anesthesia. Two patients needed spinal anesthesia and nine needed general anesthesia for extraction of RFBs. Colorectal surgeons performed most of the extractions in our series (n = 20, 62.5%) and emergency physicians performed the rest (12 patients, 37.5%).

After RFBs were removed, 11 patients (34.4%) were admitted to the surgical ward for observation and 21 patients (65.6%) were discharged from the hospital. Most patients (n = 24, 75%) failed to keep their outpatient clinic appointment after extraction.

The demographic and clinical data of the adult (n = 27) and elderly (n = 5) patients were analyzed (Table 2). Only age (38.67 ± 12.75 years vs. 71.40 ± 6.47 years, $p < 0.0001$) and reasons for insertion ($p = 0.03$) were statistically significantly different between the two groups. Transanal medication administration was more often found in the elderly group. Although not statistically significant, anal medication and its accessory were found in higher proportion in the elderly group, and all elderly patients' RFBs were extracted by transanal manual manipulation, with or without the use of local anesthesia.

4. Discussion

RFB is not an uncommon presentation to the emergency room or colorectal surgery clinic in modern society.[6] In the last decade, more articles on RFBs have been reported in western countries[3] but fewer in Asia. Foreign bodies in the rectum are most often found in adults with male preponderance.[8] In the present study, the mean age of the patient was slightly older than in similar articles,[9] but the proportion of male patients seemed quite consistent with similar articles from western countries.

Numerous types of RFBs have been described in the literature (ranging from vibrator, glass bottle, dildo, vegetable, glycerin ball and hemorrhoid ointment cap)[5,6] and all should be regarded as potentially hazardous, capable of causing significant rectal injury.[10] This study had similar results as other articles. Beside vibrator, steel ball, screwdriver, cotton balls and gauze, eye drops, plastic rod, glass cup, hemorrhoid ointment cap, hemorrhoid suppository package

Table 2
Demographic and clinical data of the adult and elderly patients.

	Adult patient (n = 27)	Elderly patients (n = 5)	*p*-value[a]
Age, years	38.67 ± 12.75	71.40 ± 6.47	< 0.0001[b]*
Gender			0.06
Female	1 (3.7%)	2 (40%)	
Male	26 (96.3%)	3 (60%)	
Type of foreign body			0.08
Anal medication and its accessory^	3 (11.1%)	3 (60%)	
RFB other than vibrator[†]	12 (44.4%)	2 (40%)	
Vibrator	8 (29.6%)	0 (0%)	
Unknown	4 (14.8%)	0 (0%)	
Reason for insertion			0.03*
Self-administered treatment[x]	5 (18.5%)	3 (60%)	
Anal eroticism	6 (22.2%)	2 (40%)	
Unknown	16 (59.3%)	0 (0%)	
Primary diagnostic tool			0.13
DRE	9 (33.3%)	4 (80%)	
X-ray	18 (66.7%)	1 (20%)	
Removal method			1.00
Transanal manual removal°	19 (70.4%)	5 (100%)	
Sigmoidscopy	3 (11.1%)	0 (0%)	
Colonscopy	2 (7.4%)	0 (0%)	
Laparotomy	3 (11.1%)	0 (0%)	
Type of anesthesia			0.38
No/LA	16 (59.3%)	5 (100%)	
Spinal anesthesia	2 (7.4%)	0 (0%)	
General anesthesia	9 (33.3%)	0 (0%)	
Type of physician who perform the removal			1.00
Colorectal surgeon	17 (63%)	3 (60%)	
Emergency physician	10 (37%)	2 (40%)	
Hospitalization			1.00
No	18 (66.7%)	3 (60%)	
Yes	9 (33.3%)	2 (40%)	
Follow-up appointment kept			1.00
No	20 (74.1%)	4 (80%)	
Yes	7 (25.9%)	1 (20%)	

[a] Fisher's exact test; [b] Mann-Whitney U test.
* Statistically significant between groups ($p < 0.05$).
DRE: digital rectal examination; LA: local anesthesia; GA: general anesthesia.
^ Anal medication and its accessory including cap of hemorrhoid ointment, package of hemorrhoid suppository, glycerine ball.
[†] Rectal foreign bodies (RFBs) other than vibrator including steel ball, screwdriver, cotton balls and gauze, eye drops, plastic rod and glass cup.
[x] Self-administered treatment including treatment for hemorrhoid, constipation and pre-radiologic examination preparation.
° Transanal manual removal include the aid of anoscopy.

and glycerin ball have all been found as RFBs. Anal medication and its accessory were found in six patients (three in the adult group and three in the elderly group). Transanal medication administration (including treatment for hemorrhoid, constipatioin, pre-radiologic examination preparation) was reported as the reason for insertion in eight patients. Among these patients, 2 patients had heart disease, 1 patient had minor stroke and coronary heart disease and 5 patients had no major medical disease. All these patients had no cognitive and visual impairment that would prohibit the proper use of transanal medication.[13] Improper anal insertion by patients themselves or their family was the main cause. Transanal medication is a well-known form of medication and its use is increasing. Clinicians (include physicians, nurses and pharmacists) must explain in detail the instruction for use of anal medication to patients and their families.

Half of the patients in this study refused to describe the reason for insertion. Such patients are often embarrassed about their condition and may seek to conceal the true nature of their visit to the emergency department.[11] Clinicians must speak respectfully and candidly with these patients in order to build a trust-based relationship.[2]

A careful DRE is the most informative component of the evaluation process, as it indicates the proximity of the object to the pelvic floor. It also evaluates and documents the functional status of the sphincter complex both by examination and clinical history.[11] In this study, RFBs could be detected by DRE in only 40.6% of patients and radiological examination was necessary in the other 59.4%. Transanal manual extraction with or without local anesthesia is the most common method used to remove RFBs and can be done easily in the emergency department or operating room. If transanal manual extraction fails or a high-lying RFB is found, sigmoidoscopic extraction, colonoscopic extraction or even laparotomy may be used to remove the object, with the use of spinal or general anesthesia. In this study, colorectal surgeons performed more than 60% of RFB extractions. These result differed from another study in which successful bedside removal was performed in about 75% of cases.[11] In our study, only 37.5% patients' RFBs were extracted by an emergency physician in the emergency department. This lower number may be related to the clinical training of emergency physicians, who need to be familiar with the etiology of RFB insertion, as well as the surgical and non-surgical management of RFBs.[6]

Singaporewalla et al. advised using a recheck endoscopy (sigmoidoscopy or flexible sigmoidoscopy) to inspect any mucosal damage and observe these patients for 24 hours after extraction for late bleeding or manifestations of perforation.[12] In the present study, most of the patients did not want to be admitted to the ward and post-extraction observation time was not standardized. Most patient did not follow up at our surgical clinic after the RFB was extracted. Physician must keep in mind that mucosal damage, late rectal bleeding or even rectal perforation can occur after extraction of RFBs. No regular endoscopic examination or standardized post-extraction observation time were recorded in the present study. The emergency and colorectal surgery departments must work together to develop an algorithm for management of RFBs. A management guideline is necessary to improve the quality of care in managing RFBs.

When comparing the adult and elderly groups, only age and reason for insertion were statistically significant between these groups. Transanal medication administration was more often found in the elderly group. Although it was not statistically significant, anal medication and its accessory were more prevalent as RFBs in the elderly group. Because of a general lack of information about mode of insertion, commonsense was the most frequent basis for use of transanal medication.[14] Clinicians must therefore keep in mind when prescribing anal medications in elderly patients, to explain in detail the instruction for use and make sure the patients know how to use the medication correctly. Other clinical features were not different between the adult and elderly patient groups.

4.1. Study limitations

The main limitation of this study is the small sample size of cases, especially in the elderly group.

5. Conclusion

In order to handle the presentation of RFBs, clinician must speak respectfully and candidly with patients in order to build a trust-based relationship. When anal medication is prescribed, especially in elderly patients, clinicians must give detailed instructions and make sure patients know how to use the medication correctly. Emergency physicians must be familiar with the surgical and non-surgical management of RFBs. No clinical difference was found between adult and elderly patients except for the reason for the RFB.

Conflict of interest

The authors have no conflict of interest to declare.

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