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# Huge rectovesical fistula due to long-term retention of a rectal foreign body: A case report and review of the literature



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## ABSTRACT

**INTRODUCTION:** Most patients with foreign bodies in their rectums present to medical institutions within a few days. In this report, we describe a foreign body in the rectum in situ for 5 months that resulted in a huge rectovesical fistula 4 cm in diameter, requiring emergency laparotomy.

**PRESENTATION OF CASE:** A 59-year-old man, who had undergone rectal foreign body extraction via the anal canal without any complications 7 years previously, presented with abdominal pain and diarrhea. Computed tomography revealed a cup-shaped rectal foreign body and huge rectovesical fistula. We performed an emergency laparotomy. There was no contaminated ascites. The adhesion around the fistula was too stiff to be dissected. We incised the rectal wall, excised the ceramic cup-shaped foreign body, and detected a fistula approximately 4 cm in diameter. We performed sigmoid colostomy, and the incised rectal wall and the bladder wall were sutured, and the residual rectum was supposed to function as a part of the bladder. After the surgery, no severe complications occurred. The patient told us that he inserted the foreign body himself 5 months earlier, and urine had appeared in the stool in the previous month.

**DISCUSSION:** A long-term retained rectal foreign body is very rare and could create an abnormal huge fistula between the pelvic organs because of prolonged pressure on the walls of the pelvic organs.

**CONCLUSION:** In patients with a long-term retained rectal foreign body, we should prepare for surgical treatment of not only the rectum but also the other pelvic organs.

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## 1. Introduction

Most patients with foreign bodies in their rectums present to medical institutions within a few days, and they sometimes have serious complications such as perforation [1]. In this report, we describe a foreign body in the rectum in situ for 5 months that finally resulted in a rectovesical fistula and required emergency laparotomy.

## 2. Case presentation

A 59-year-old man, who had undergone rectal foreign body extraction via the anal canal without any complications 7 years previously, presented to another hospital complaining of abdominal pain and diarrhea for 10 days. He was diagnosed with acute enteritis and dehydration and was hospitalized. On the next day, his percutaneous oxygen saturation dropped to 90%, and severe metabolic acidosis (pH 7.26) was noted. He was transferred to our emergency department. On arrival, he was in a state of semi-

consciousness and had difficulty breathing. Physical examination revealed semiconsciousness, a body temperature of 97.5F (36.4 °C) degrees, a blood pressure of 107/91 mmHg, a heart rate of 104/min, a respiratory rate of 30/min, and a percutaneous oxygen saturation of 92% with 15 L/min oxygen administration. His abdomen was soft and flat. He had no abdominal pain, but a stiff foreign body was palpable in his pelvis. Rectal examination revealed a fistula in the anterior wall of the rectum 5 cm from the anal verge with tenderness around the fistula. His urine was contaminated with stool. Hematological and biochemical testing showed a white blood cell count of 16,500/ $\mu$ L and a C-reactive protein level of 18.0 mg/dL. An abdominal radiograph revealed a cup-shaped foreign body in the pelvis, approximately 8 cm in width and 10 cm in length (Fig. 1). Computed tomography revealed scattered infiltrative shadow throughout both his lungs, and it also revealed a foreign body in the rectum protruding into the bladder through a huge rectovesical fistula (Fig. 2).

He was diagnosed with a recto-vesical fistula due to the foreign body and secondary acute respiratory distress syndrome and sepsis. We performed an emergency laparotomy. There was no contaminated ascites. In his pelvis, the foreign body was palpable in the rectum, but it was not able to be mobilized. Part of the small intestine was adhered to the fistula on the anterior rectal wall, and the adhesion around the fistula was too stiff to be dissected. The

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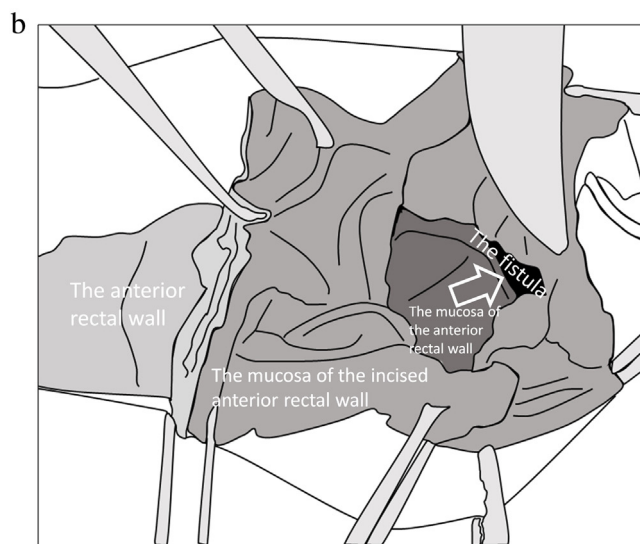
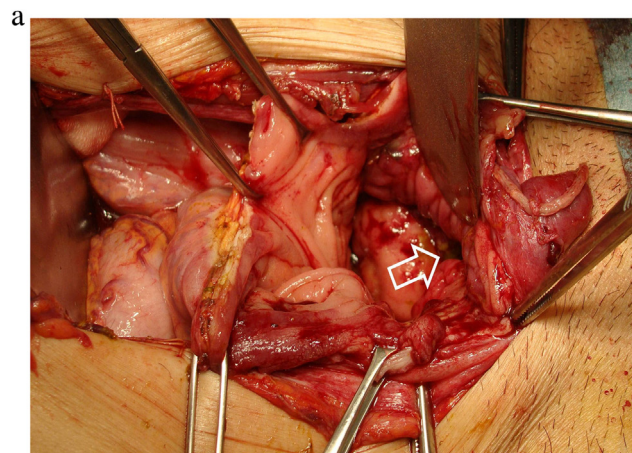


**Fig. 1.** An abdominal radiograph revealed a cup-shaped foreign body stuck in the pelvis.



**Fig. 2.** A coronal section of abdominal computed tomography showed that a foreign body in the rectum protruded into the bladder through a huge rectovesical fistula. Irregular thickening of the wall of the fistula (white arrow) was pathologically diagnosed as being due to inflammation. R: rectum, B: bladder.

adhered part of the small intestine was resected, and the cut ends of the intestine were connected afterward. We incised the rectal wall, excised a ceramic cup-shaped foreign body (Fig. 3), and identified the fistula, which was approximately 4 cm in diameter (Fig. 4). We made a decision to perform sigmoid colostomy. The sigmoid colon and the rectum were dissected, and a single-barrel sigmoid stoma was created from the oral end. The rectovesical fistula was considered to be too large to close. The incised rectal wall and the bladder wall were sutured, and the rectum and the bladder together were supposed to function as the bladder (Fig. 5). After the surgery, he recovered without any severe complications.



**Fig. 3.** Surgical findings (a) and schematic drawing (b) of the operation. Through the incised anterior rectal wall, a 4 cm fistula between the anterior rectal wall and the posterior bladder above the peritoneal reflection was detected (white arrow).

In the interview afterward, he told us that he inserted the foreign body by himself 5 months earlier and had not been able to extract it, but he had not visited any medical institutions. He had diarrhea and abdominal pain two months prior to presentation, and urine appeared in the stool in the previous month.

He was discharged on the 17th day after the surgery. However, he did not return for outpatient follow-up postoperatively.

**3. Discussion**

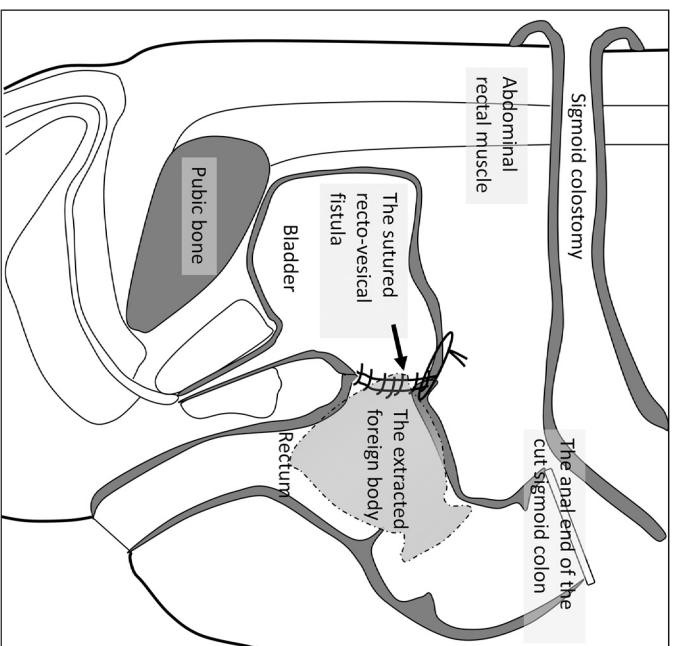
Major complications of rectal foreign bodies are rectal wall injuries due to the foreign bodies themselves or manipulations intended to extract them [1]. In case they are not able to be extracted through the anus or perforations are revealed, laparotomy is performed, and in cases of severe inflammation, sigmoidectomy is performed [1].

Rectovesical fistula or rectovaginal fistula may occur because of malignant tumors, chronic inflammation such as diverticulitis, sexual intercourse, obstetric origins, medical malpractice, or neglected foreign bodies [2].

The main etiology of this 4 cm fistula between the anterior rectal wall and the posterior bladder just above the peritoneal reflection was presumed to be due to prolonged residence of a rigid object in the rectum, which by chance did not result in complete rectal obstruction. Compared to urogenital foreign bodies,



**Fig. 4.** The extracted foreign body was a ceramic cup 8 cm in diameter and 10 cm in length.



**Fig. 5.** The schema of this surgery. The incised rectal wall and the bladder wall were sutured, and the rectum and the bladder were supposed to function as the bladder.

**Table 1**  
Characteristics of long-term retained rectal foreign body cases.

Patient	Authors	Year	Age at presentation	Sex	Chief complaint	Time between insertion and presentation	Complication due to the long-retained foreign body	Approach	Object	Size
1	A.J. Buzzard et al.	1979	64 y.o.	male	abdominal and anal pain	6 months	N/A	trans-anal extraction under anesthesia	a vaginal vibrator	20 cm in length and 2.5 cm in diameter
2	Mücahit Ozbilgin	2014	22 y.o.	male	anal pain, discharge, and incontinence	5 years	inflammatory changes around the foreign body and perianal fistula	A single-barrel sigmoid colostomy was performed. The foreign body was extracted via the anus with Allis forceps during the surgery.	a glass bottle	not described
3	Sagar Sadhu et al.	2015	64 y.o.	male	constipation and rectal discomfort	35 days	uneventful	trans-anal extraction under anesthesia	a plastic sprinkler	27.5 cm in length and 3.2 cm in diameter
4	current report	2016	59 y.o.	male	abdominal pain and diarrhea	5 months	a 4 cm recto-vesical fistula and a stiff adhesion around the fistula	Partial small bowel resection and a single-barrel sigmoid colostomy. In addition, the residual rectum and the bladder with the huge fistula were sutured to form one bladder.	a ceramic cup	10 cm in length and 8 cm in diameter



most patients with rectal foreign bodies seek medical consultation earlier. According to Kurer et al., over 90% of such cases sought consultation within 7 days after the incident. In contrast, patients with intravesical foreign bodies presented several weeks, months, or years later [3]. As a result, long-term retention of rectal foreign bodies is rare.

There are 3 case reports that have described rectal foreign bodies retained for over a month [3–6] (Table 1). In 2 of these 3 reports, there were no severe complications such as perforation or fistula. However, the other case had diffuse inflammation around the foreign body, as in our case. Lake et al. stated that there was no significant association between the length of time the foreign body was present and operative intervention [7]. However, according to our case and Mücahit's case [6], long-term retained rectal foreign bodies could place prolonged pressure on the walls of pelvic organs and lead to diffuse pelvic inflammation and large fistulas between the pelvic organs. In these cases, we should prepare for surgical treatment of multiple pelvic organs.

#### 4. Conclusion

This case taught us that when we perform the extraction of a long-term retained rectal foreign body, we should consider the possibility of a large fistula or diffuse inflammation and prepare for surgical treatment of not only the rectum but also other pelvic organs.

#### Conflict of interest

All authors declare no relationship with other people and organizations of this work.

#### Funding

All authors declare that there were no sponsors for this work.

#### Ethical approval

This article is not a research study. This is a case report.

#### Consent

Authors obtained from the patient's consent for his data to use publication to case report.

#### Author contributions

YK participated in the surgery. YK analyzed and interpreted the patient data. YK was major contributors in writing the manuscript. NK gave the useful comment of this manuscript. All authors read and approved the final manuscript.

#### Guarantor

Yoshiyuki Kiyasu.

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