

Sucrose as an Aid to Manual Reduction of Incarcerated Rectal Prolapse

From the Departments of Emergency Medicine* and Surgery,* Los Angeles County—University of Southern California Medical Center, Los Angeles, CA.

Received for publication December 10, 1996. Revision received March 7, 1997. Accepted for publication March 19, 1997.

Copyright © by the American College of Emergency Physicians.

William M Coburn III, DO*

Marie A Russell, MD*

Wayne L Hofstetter, MD†

Incarcerated rectal prolapse is a potential surgical emergency. We report a case in which a simple but effective technique involving the desiccating effect of granulated sugar (sucrose) was used to aid the manual reduction of prolapsed but viable rectal tissue.

[Coburn WM III, Russell MA, Hofstetter WL: Sucrose as an aid to manual reduction of incarcerated rectal prolapse. *Ann Emerg Med* September 1997;30:347-349.]

INTRODUCTION

Rectal prolapse is sometimes associated with incarceration and ischemia requiring emergency bowel resection. Every attempt should be made to manually reduce persistently prolapsed but viable rectum to avoid complications such as strangulation, ulceration, bleeding, and perforation.¹

The development of progressive edema may make attempts at manual reduction difficult or unsuccessful. We report a case of incarcerated rectal prolapse in which a simple but effective technique, never before reported in the emergency medicine literature, was used. The technique involved the application of granulated table sugar (sucrose) to the mucosal surface of the prolapsed segment, resulting in a dramatic decrease in bowel edema that facilitated manual reduction.

CASE REPORT

A 32-year-old man presented to our ED with the complaint of rectal pain of 1 day's duration, moderate at the time of presentation. He gave a history of chronic constipation and painful defecation and noted that after straining at stool earlier in the day he had noted a large tissue mass in the rectal area. He said a similar event had occurred approximately 1 year earlier, at which time he had manually reduced a much smaller mass but had sought no medical attention. The patient denied trauma, anal intercourse, or insertion of a foreign body. The patient's medical history was otherwise

unremarkable. He denied allergies, medication, and the use of tobacco, ethanol, or illicit drugs.

Blood pressure was 129/64 mm Hg, pulse 100, respirations 18, and temperature of 37° C (98.6° F). Physical examination revealed a complete circumferential rectal prolapse extending 9 to 10 cm from the anus. No gross bleeding or mass was noted. The prolapsed section was severely edematous but grossly viable (Figure).

The patient was given intramuscular meperidine 100 mg and hydroxyzine 50 mg. Several subsequent attempts at manual reduction by ED and surgical staff were unsuccessful. At this time approximately half a cup of granulated table sugar was applied directly to the mucosal surface of the prolapsed segment. The sugar quickly absorbed fluid, reducing the edema and allowing the protruding rectal tissue to be manually pushed proximally through the anal sphincter.

Figure.

Complete circumferential rectal prolapse.



The patient was admitted to the surgical service. After colonoscopy revealed essentially normal findings, surgical rectopexy was performed, with no complications.

DISCUSSION

Complete rectal prolapse, or procidentia, is described classically as circumferential protrusion of all layers of rectum visibly descending through the anus. Although the terminology in the literature varies, three types of rectal prolapse are generally recognized: complete, incomplete (an internal prolapse or intussusception of the upper rectum that does not reach the anal orifice), and mucosal (characterized by radial rectal folds prolapsing through the rectum).²

Rectal prolapse is seen most often in older women; the female/male ratio is 6:1. Its cause is not clearly understood.³ Pelvic floor laxity with associated pelvic neuropathy, persistent straining, chronic constipation, rectal tumors, and anal sphincter dysfunction have been implicated. Theories explaining rectal prolapse as a sliding hernia or intussusception have been proposed. In no single theory have all the varied causes of this disorder been united. In most cases the prolapse is considered idiopathic.⁴ Contrary to earlier belief, increased parity and birth trauma do not seem to be predisposing factors; childless women represent 40% to 60% of patients in most studies.^{1,3,5}

Actual protrusion of the rectum is the most common presenting complaint. Other symptoms include anorectal pain or discomfort during defecation, sensation of incomplete evacuation, rectal and urinary incontinence, and rectal bleeding or discharge.

Rectal prolapse in children is most often incomplete or mucosal, usually occurs after defecation, and generally reduces spontaneously. It usually affects children aged 3 years and younger and is associated with cystic fibrosis, parasitic infections, and congenital abnormalities of the mesentery and pelvic musculature (eg, myelomeningocele, spina bifida). Worldwide, poor nutrition and frequent childhood diarrhea are the most common causes of prolapse. Because rectal prolapse is self limiting in this age group, treatment centers on correcting constipation, avoiding straining, and reassuring parents and child.

Differentiating complete rectal prolapse from mucosal prolapse is sometimes initially difficult. Grossly, in cases of complete rectal prolapse concentric rings of tissue are visible, whereas in mucosal prolapse radial grooves are present down to the anal skin. Mucosal prolapse, which rarely extends more than 4 cm from the anus, is associated with anal eversion; palpation reveals only double mucosal layers. The full

thickness of double rectal walls are palpated in complete rectal prolapse.²

It is important for the emergency physician to recognize conditions frequently mistaken for rectal prolapse: Prolapsing internal hemorrhoids are differentiated by a definite groove between masses of tissue and the perianal skin, a prolapsing rectal tumor or polyp must be reduced and definitively diagnosed by endoscopy, and abnormal perineal descent includes gross uterine prolapse.

Every attempt should be made to manually reduce a persistently prolapsed rectum to avoid complications such as strangulation, ulceration, bleeding, and perforation. Various methods have been described to reduce the incarcerated rectal prolapse, including ice packs, injection of a mixture of diluted epinephrine and hyaluronidase,⁶ manual reduction while the patient is under general anesthesia, and surgery.

After successful reduction, a digital examination should be conducted to assess rectal tone and the presence of other rectal lesions. In every case endoscopy should be performed to define anatomy and aid differential diagnosis.⁴ Barium studies are technically difficult because of anal sphincter laxity, commonly associated with rectal prolapse. Stool softeners should be initiated and the patient warned against straining at stool. Immediate surgical referral and admission are reserved for those rare cases in which the patient presents with late complications such as ischemia or ulceration or manual reduction has proved unsuccessful.¹

To our knowledge, this is the first description in the emergency medicine literature of a simple but effective technique for the manual reduction of viable incarcerated rectal tissue, with the potential for application to any prolapsed mucosal surface. This technique, which has been in use for years in veterinary medicine,⁷ makes use of the desiccating property of ordinary table sugar. Hypertonic sugar solutions consisting of 50% dextrose or 70% mannitol applied directly to the rectal mucosa have also been used to reduce edema and facilitate reduction. This technique provides the additional benefit of allowing time for elective surgical repair after adequate mechanical and antibiotic bowel preparation.⁸

The effects of this technique on serum glucose level caused by potential systemic absorption are not known. Until further studies are performed, we caution against the use of this technique in patients with known glucose intolerance.

REFERENCES

1. Yamada T, et al: *Textbook of Gastroenterology*, ed 2, vol 2. Philadelphia: Lippincott, 1995:2035-2037.
2. Lowry AC, Goldberg SML: Internal and overt rectal procidentia. *Gastroenterol Clin North Am* 1987;16:47-67.
3. Wassef R, Rothenberger DA, Goldberg SM: Rectal prolapse. *Curr Probl Surg* 1986;23:402-451.

4. Spiro H, et al: *Clinical Gastroenterology*, ed 4. New York: McGraw-Hill, 1993:820-821.

5. Andrews NJ, Jones DJ: Rectal prolapse and associated conditions. *BMJ* 1992;305:243-246.

6. Ramanujam PS, Ven Katesh KS: Management of acute incarcerated rectal prolapse. *Dis Colon Rectum* 1995;35:1154-1156.

7. *Merck Veterinary Manual*, ed 6. Rahway, NJ: Merck & Company, 1986:130-131.

8. Myers JO, Rothenberger DA: Sugar in the reduction of incarcerated prolapsed bowel: Report of two cases. *Dis Colon Rectum* 1991;34:416-418.

Reprint no. 47/1/83926

Address for reprints:

William M Coburn III, DO
Department of Emergency Medicine
LAC+USC Medical Center
1200 North State Street
Los Angeles, CA 90033
213-226-6667
Fax 213-226-6454