



## Successful Osmotic Reduction of Prolapsed Stoma Using Table Sugar: A Case Report

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### **Authors' contributions**

This work was carried out in collaboration among all authors. Author MB designed the study, collected all information, wrote the first draft of the manuscript and the end manuscript. Authors KY, AE, KE, FB and AF managed the literature searches and aided with the final manuscript. All authors read and approved the final manuscript.

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Case Study

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### **ABSTRACT**

Stoma prolapse is a well-described complication after ileostomy or colostomy, it is typically asymptomatic and easily reduced. Acute incarceration of a prolapsed stoma is a rare event and a surgical emergency. In the presence of a prolapse, a very edematous one, the application of table sugar on the prolapsed segment for a few minutes reduces the edema by osmotic effect and causes or facilitates the reduction.

This case reports the successful application of sugar to a 45-year-old woman to reduce a prolapsed colostomy, eliminating the need for urgent surgery.

Successful reduction can prevent an emergent operation, allowing for medical optimization and elective surgical treatment if necessary.

**Keywords:** Sugar; incarcerated; colostomy; stomal prolapse.

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## 1. INTRODUCTION

Stoma prolapse is a well-described complication after ileostomy or colostomy, it is typically asymptomatic and easily reduced, acute incarceration of a prolapsed stoma is a rare event [1]. In cases of prolapse where manual reduction is difficult due to edema, local osmotic therapy using sugar can reduce edema and facilitate reduction of the prolapsed segment.

Successful reduction can avoid urgent surgery, allowing medical optimization and elective surgical treatment if necessary [2].

This case reports the successful application of sugar to a 45-year-old woman to reduce a prolapsed colostomy, eliminating the need for emergency surgery.

## 2. CASE REPORT

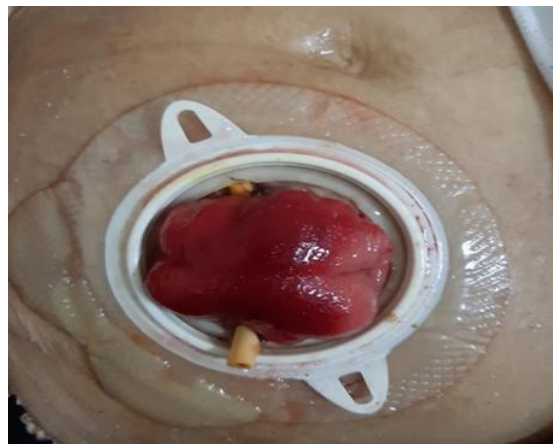
A 45-year-old woman, followed in the oncology department for adenocarcinoma of the lower rectum under radiotherapy and chemotherapy, operated 5 months ago for a lateral sigmoid colostomy discharge following an occlusive syndrome. The patient presented to the surgical emergency room for irreducible stoma prolapse that had appeared 3 days ago, an intestinal prolapse of about 20 cm, highly edematous (Fig. 1), without signs of necrosis with intermittent abdominal pain without vomiting. Manual reduction of the initial prolapse was attempted several times and failed. Sugar sachets (500g) applied to the prolapsed stoma for 30 minutes (Fig. 2) reduced the edema after a few minutes and allowed easy manual reduction (Fig. 3) and no further treatment was necessary.



**Fig. 1. Prolapsed colostomy**



**Fig. 2. Granulated sugar on prolapsed colostomy**



**Fig. 3. Colostomy reduced**

## 3. DISCUSSION

Stoma prolapse is an intussusception of the bowel through a mature stoma [3], it can be mucosal (simple eversion of the mucosa) or total, with unwinding of the entire digestive wall. The edema that results from the venous stasis setting in after the eversion of the digestive loop through the stoma can make manual reduction impossible [2]. It can lead to strangulation of the prolapse and leads to necrosis of the intestinal loop. It is one of the most common late complications after stoma placement. The incidence of stomal prolapse is 2-26% [3], the high variability rates may result from 3 main variables: the variations in anatomical site (ileostomy, transverse or sigmoid colostomy), stoma formation technique (loop vs end stoma) and disease process (benign, malignant, inflammatory) [4].

Loop ileostomy has a reduced incidence of stoma prolapse compared to loop colostomy, the distal limb of loop colostomies prolapses more frequently than the proximal limb due to bowel atrophy and shrinkage that result from a defunctionalized state [1,5]. Massive prolapse is less common and can lead to significant edema or ulceration, leading to strangulation that requires surgical correction, which is associated to risks and morbidities: mucosal ulcerations, incarceration, and eventual ischemia [6].

Many etiologies exist for the stoma prolapse, including increased intra-abdominal pressure caused, for example, by obesity, ascites, pregnancy, constipation, chronic cough or intracavitary expansive lesions [3]. Other risk factors include: advanced age, bowel obstruction at the time of stoma creation, and lack of preoperative colostomy site marking [1]. The main theory is related to unfixed mesentery that leads to protrusion of the mobile intestine along with its mesentery via the stoma. Patients who underwent adjuvant chemotherapy have a higher rate of stoma complications in comparison with patients who did not receive any chemotherapy [3].

The treatment varies according to the type of the prolapse and consists of conservative management or surgical modification. The use of a local osmotic agent aiming to reduce the mucosa edema was then opted, as a therapeutic strategy to avoid open surgery [2,7].

The sprinkling of the edematous irreducible prolapsed bowel with table sugar, results in a significant decrease in bowel edema and the incarcerated segment reduced [8]. Granulated sugar is used to create a desiccant effect, as well as a fluid shift across the edematous bowel wall, this is dictated by osmotic gradient where a fluid movement is initiated, when a low-concentrated solvent in the edematous bowel wall shift into a region of higher concentration due to granulated sugar poured around the prolapsed bowel. This reduction in bowel caliber, owing to fluid shift, makes bowel reduction easier [8].

When stoma prolapse happens repeatedly despite manual reduction, surgical treatment is necessary to fit the stoma and avoid bowel incarceration and strangulation. Surgical treatment options for stoma prolapse include stoma reversal, local resection or relocation [9,10].

Conservative management of incarcerated prolapsed stoma eliminates the urge for an urgent surgery. Although evidence suggesting that the use of granulated sugar is not always efficient, it should be attempted at the earliest before irreversible mucosal ischemia sets in [9].

#### 4. CONCLUSION

Stoma prolapse is a common late complication of ileostomy or colostomy. The drying effects of table sugar should be kept in mind when dealing with viable incarcerated and prolapsed intestines. Successful reduction can prevent an urgent surgery, allowing for medical optimization and elective surgical treatment if necessary.

#### CONSENT

As per international standard or University standard written patient consent has been collected and preserved by the authors.

#### ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the authors.

#### COMPETING INTERESTS

Authors have declared that no competing interests exist.

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