

Irreducible Rectal Prolapse: Emergency Surgical Management of Eight Cases and A Review of the Literature

T Seenivasagam, MMed*, H Gerald, FRCS*, N Ghassan, FRCS, FICS*, T Vivek, MS, MCh**, A S Bedi, MS**, S Suneet, MS, MAMS*

*The Division of Colorectal Surgery, Hospital Selayang and associated Faculty of Medicine, Universiti Teknologi MARA, **Metro Institute of Digestive Diseases, Noida (India)

SUMMARY

The management of irreducible rectal prolapse is controversial. Surgeons may attempt conservative management by application of sugar. When surgery becomes inevitable the choice of procedure varies. We reviewed eight cases and noted the clinical findings and the results of conservative and surgical management. In four cases sugar was applied first, and failed. Emergency surgery always gave good outcomes. The procedures included simple reduction, rectopexy, laparotomy with resection, Delorme's repair, and perineal resection. Our experience and review of the literature indicate that surgery should be performed early in irreducible prolapse. Perineal resection may be the most suitable emergency procedure.

KEY WORDS:

Rectal prolapse, Emergencies, Surgery

INTRODUCTION

Rectal prolapse on rare occasions becomes complicated by irreducibility¹. The organ becomes edematous, and begins to ulcerate. In this setting, the patient cannot reduce the prolapse manually. All too often, even the surgeon is unable to reduce the prolapse manually, and needs to take the patient to the operation theater for a procedure under general anesthesia. Since irreducible prolapse is rare, there is no agreement on its management. The literature describes several methods for reducing an incarcerated rectal prolapse. The many methods actually bear testimony to the fact that no single method is very attractive. In this paper we describe the management of some cases of irreducible rectal prolapse needing a procedure under anesthesia, and review the literature briefly, with a view to making a suggestion for the management of this condition.

MATERIALS AND METHODS

The authors, who are directly or indirectly affiliated to Hospital Selayang, contributed detailed notes of cases seen by them in the last five years. These case notes were compiled with particular attention to the established irreducibility, the patient demographics, the management, and the follow up. Of the patients who had an emergency presentation due to irreducible rectal prolapse, we reviewed those who needed a procedure under general anesthesia. The typical initial

management of irreducible prolapse was an attempted manual reduction under cover of an injectable analgesic such as diclofenac or tramadol. If this failed, some surgeons preferred to try sugar application. They used 20 grams of finely powdered sugar sprinkled evenly over the prolapsed area, and retried manual reduction after 24 hours. If all attempts at reduction failed, the patient was taken to the operation theater for a procedure under general anesthesia. The choice of procedure depended on the surgeon's preference.

RESULTS

In the period 2006 till 2010, our records show that fifteen patients presented with a diagnosis of irreducible rectal prolapse. Of these patients, reduction of the prolapse was possible in five, using gentle manipulation under cover of an injectable analgesic such as diclofenac or tramadol. Two patients underwent successful reduction using sugar application. We reviewed the records of the remaining eight cases who required general anesthesia (Table I). The median age of these patients was 45 years, and six patients were male. At presentation, the duration of the irreducible prolapse varied from 6 hours to 7 days. In five cases, application of sugar was attempted without success. In two patients sugar was not applied, according to the surgeon's preference. One patient had patches of gangrene and therefore sugar application was not attempted. Seven patients underwent surgery; the procedures varied. One patient underwent reduction under anesthesia, and one underwent a Delorme's procedure. In two patients, the surgeon carried out a laparotomy and Wells' repair. The remaining cases underwent resection, which was carried through an abdominal incision, or via a perineal approach. In all eight cases the patient remained well.

DISCUSSION

Rectal prolapse is a not uncommon disorder, and is usually treated electively by resection of the redundant sigmoid colon. The other common forms of repair include the transabdominal Wells' rectopexy and the perineal Delorme's operation (perineal mucosectomy with plication of prolapsed muscle). Some operations can now be carried out laparoscopically. Incarceration is an uncommon complication, and requires emergency management^{2,3}.

This article was accepted: 29 May 2011

Corresponding Author: Gerald Henry, Hospital Selayang Surgery, Hospital Selayang, Selayang Kepong Road, Selayang, Batu Caves, 68000, Selangor, Malaysia Email: GeraldH@selayanghospital.gov.my

Table I: List of cases and procedures carried out (“yr” = years of follow up, rounded off)

Case number	Age/sex	Size of prolapse	Findings	Sugar application attempted?	Definitive treatment	Result
1	18 M	15 cm	Edema. No ulceration or gangrene	Yes, failed	Anal dilatation, reduction, Wells’ repair	Patient well. No recurrence (1yr)
2	40 M	12 cm	Edema. No ulceration or gangrene	Yes, failed	Anal dilatation, reduction, Wells’ repair	Patient well. No recurrence (1yr)
3	40F	7 cm	Edema. No ulceration or gangrene	Not attempted	Laparotomy, sigmoid colectomy	Patient well. No recurrence (5yr)
4	58M	10 cm	Edema. No ulceration or gangrene	Not attempted	Perineal resection with ileostomy	Patient well. No recurrence (2yr)
5	37 M	45 cm	Edema, ulceration. No gangrene (Fig 1)	Yes, failed	Reduction only, under anesthesia	Patient well, no recurrence (0.5yr)
6	60F	10 cm	Edema, ulceration. No gangrene	Yes, failed	Delorme’s operation	Patient well. No recurrence (0.5yr)
7	83M	8 cm	Edema, ulceration, gangrene	Not attempted	Perineal resection with colostomy	Patient well. No recurrence (3yr*)
8	50 M	20 cm	Edema, ulceration, gangrene	Yes, failed	Laparotomy, sigmoid colectomy, colostomy	Wound infection, no recurrence (0.5yr)



Legend to Fig. 1: Picture of prolapsed rectum showing marked edema, and scattered small superficial ulcers.

Irreducible prolapse is rare. Consequently, surgeons have little experience, management is controversial, and literature is scanty⁴. If surgery is unavoidable, the procedure should be safe and effective. Unfortunately, no treatment fulfils all criteria.

Conservative management. Conservative management is the instinctive choice in an emergency. These conservative methods aim to reduce the edema and allow reduction of the prolapse, with a later planned definitive surgery. Edema may be reduced by the application of sugar⁵, by the injection of hyaluronidase⁶, or by applying an elastic compression wrap⁷. Other than the use of sugar, most methods are supported only by anecdotal reports.

Sugar application, however, finds favor more widely. Demirel and coworkers⁸ reported that 20 grams of sugar applied to the prolapse quickly dissolved, and led to reduction of edema and spontaneous reduction. Other authors⁹⁻¹¹ reported similar success. However, there are reports of complications. Hovey

and Metcalf¹² reported a case in which application of sugar and gentle pressure failed to reduce the prolapse; instead the patient developed a perforation. In our cases application of sugar usually failed to help reduce the prolapse. Voulimeneas *et al* used mannitol¹³ but without success, and had to resort to surgery. In the absence of proper trials, one must conclude that sugar application is usually unsuccessful.

Emergency surgery. Surgeons may need to resort to surgery after a failed trial of sugar application.

For elective operation on a reducible prolapse the options include the Thiersch stitch, laparotomy and Wells’ rectopexy or resection, and perineal resection^{2,3}. In an irreducible prolapse, however, the Thiersch repair³ and its modification, the Gant-Miwa procedure¹⁴ are obviously not feasible.

One feasible surgical option in an emergency is a laparotomy with resection or a laparotomy with a Wells’ repair. Both abdominal resection^{15,16} and rectopexy¹⁷ have occasionally been carried out in the emergency setting. These operations may be associated with low recurrence rates, but carry the morbidity of an emergency laparotomy. It is difficult to reliably determine the safety or the recurrence rates of transabdominal procedures, since so few have been reported in the literature.

The other surgical option is the perineal rectosigmoidectomy, also called Altemeier’s operation^{1,18}. It can be carried out under spinal anesthesia, and the surgeon avoids a laparotomy. Unfortunately, perineal rectosigmoidectomy is associated with high postoperative recurrence rates. Friedman and coworkers reported that over a third of patients would develop a recurrence following this procedure¹⁹. This is only to be expected, since the procedure allows neither proper resection of redundant large bowel, nor allows a proper fixation to the sacrum.

In this controversy, surgeons seem to somewhat prefer the perineal approach despite the drawbacks. There are no large series. Ramanujam *et al*²⁰ described the findings in twelve cases of incarcerated prolapse in elderly women. The patients

did well, though two developed anastomotic leaks requiring colostomy. Aziz and Mbembati²¹. reported that the procedure of choice in their experience was a perineal proctosigmoidectomy for irreducible prolapse. Yuzbasioglu *et al*²² also reported on successful treatment by perineal resection using locoregional anesthesia. Voulimeneas *et al*¹³ have recently reported a case of gangrenous rectal prolapse treated in this way and have reviewed the literature. The procedure has very high recurrence rates, and continence may also be an issue. Despite the high recurrence rates, the authors recommend perineal proctosigmoidectomy in this difficult setting¹³. The other perineal operation, the Delorme repair, carried out in one of our patients, has even higher recurrence rates²³.

In the absence of a formal trial, it is difficult to be certain which procedure is best in the emergency setting. Is it the safer perineal proctosigmoidectomy with its high recurrence rate, or the more effective but potentially risky transabdominal procedures: the resection or the Wells' repair? Surgeons seem to favor the safety of a perineal approach, although the literature at present is far from conclusive.

We suggest that patients with irreducible prolapse should be taken quickly for a surgical procedure, such as a perineal proctosigmoidectomy. If the prolapse recurs, a follow up transabdominal open or laparoscopic operation can always be carried out. Sugar application has low efficacy, causes delay, and does not prevent the need for a subsequent operation.

REFERENCES

1. Senapati A. Rectal prolapse. In: Phillips KS (Editor) *Colorectal Surgery*, Elsevier Saunders, 2005, Philadelphia, p193-210.
2. Goligher JC. Prolapse of the Rectum. In: *Surgery of the Anus, Rectum and Colon*, 5th Edition, WB Saunders Co, 1984, p256-9.
3. Beck DE, Whitlow CB. Rectal Prolapse and intussusception. In: Beck DE. *Handbook of Colorectal Surgery*, 2nd edition, Marcel Dekker, New York, 2003, p301-24.
4. Sadik Y, Koksall HM, Baykan A. Incarcerated and strangulated rectal prolapse. *Int J Colorectal Dis* 2001; 16: 60-1.
5. Coburn WM, Russell MA, Hofstetter WL. Sucrose as an aid to manual reduction of incarcerated rectal prolapse. *Dis Colon Rectum* 1993;36:207.
6. Chaudhuri A. Hyaluronidase in the reduction of incarcerated rectal prolapse: a novel use. *Int J Colorectal Dis* 1999; 14: 264.
7. Sarpel U, Jacob N, Randolph MS. Reduction of a large incarcerated rectal prolapse by use of an elastic compression wrap. *Dis Colon Rectum* 2005; 48: 1320-22.
8. Demirel AH, Ungoren AU, Kapan M, Karaoglu N. Sugar application in reduction of incarcerated prolapsed rectum. *Indian J Gastroenterol* 2007; 26: 196-7.
9. Myers JO, Rothenberger DA. Sugar in the reduction of incarcerated prolapsed bowel. Report of two cases. *Dis Colon Rectum*. 1991; 34: 416-8.
10. Coburn WM, Russell MA, Hofstetter WL. Sucrose as an aid to manual reduction of incarcerated rectal prolapse. *Dis Colon Rectum* 1993; 36: 207.
11. Shapiro R, Chin EH, Steinhagen RM. Reduction of an incarcerated, prolapse ileostomy with the assistance of sugar as a dessiccant. *Tech Coloproctol* 2010; 14: 269-71.
12. Hovey MA, Metcalf AM. Incarcerated rectal prolapse--rupture and ileal evisceration after failed reduction: report of a case. *Dis Colon Rectum*. 1997; 40: 1254-7.
13. Voulimeneas I, Antonopoulos C, Alifierakis E, Ioannides P. Perineal rectosigmoidectomy for gangrenous rectal prolapse. *World J Gastroenterol*. 2010; 16: 2689-91.
14. Yamana T, Iwadare J. Mucosal plication (Gant-Miwa procedure) with anal encircling for rectal prolapse--a review of the Japanese experience. *Surg Today*. 1999; 29: 290-3.
15. Shah PR, Joseph A, Haray PN, Kiberu S. Giant villous adenoma in an incarcerated rectal prolapse: a clinical conundrum! *Indian J Surg* 2005; 67: 100-1.
16. Sakaguchi D, Ishida H, Yamada H, Tsuzuki S, Hayashi Y, Yokoyama M, Hashimoto D. Incarcerated recurrent rectal prolapse with ileal strangulation: report of a case. *Surg Today*. 2005; 35: 415-7.
17. AlGhamdi HM, Parashar SK, Khwaja S, Ismail MH, AlGhamdi ZM. Extensive condyloma presenting with rectal prolapse. *Indian J Sexually Transm Dis* 2008; 29: 34-6.
18. Altemeier WA, Culbertson WR, Alexander JW. One-stage perineal repair of rectal prolapse. Twelve years' experience. *Arch Surg* 1964; 89: 6-16.
19. Friedman R, Muggia-Sulam M, Freund HR. Experience with the one-stage perineal repair of rectal prolapse. *Dis Colon Rectum*. 1983; 26: 789-791.
20. Ramanujam PS, Ventakesh KS, Ramanujam KP. Management of rectal prolapse in elderly women: a study. *The Female Patient* 2006; Nov: 58-61, http://www.femalepatient.com/html/arc/sig/case/articles/031_11_058.asp, accessed 19 April 2010.
21. Aziz MR, Mbembati NA. Complete rectal prolapse in adults: a Tanzanian experience. *Cent Afr J Med*. 1994; 40: 349-52.
22. Yuzbasioglu ME, Bulbuloglu E, Ozkaya M, Oksuz H. A different approach to incarcerated and complicated rectal prolapse. *Med Sci Monit*. 2008; 14: CS60-3.
23. Milito G, Cadeddu F, Selvaggio I, Grande M. The Delorme repair for full-thickness rectal prolapse: A retrospective review. *Am J Surg* 2010; 199: 581-2.