

The adaptation of Altemeier's procedure to treat end colostomy prolapse: A simple option for day surgery

O. Bulut

Abstract

Aim: A simple technique similar to an Altemeier perineal proctectomy is presented as a localised correction under intravenous sedation.

Methods: Ten patients with prolapse of an end colostomy underwent this modified procedure between October 2010 and November 2011. Standard surgical and anaesthetic protocols were used.

Keywords: Colostomy; stomal prolapse; stoma-related complications; day case; ambulatory surgery.

Author's address: Department of Surgical Gastroenterology, Hvidovre University Hospital, University of Copenhagen, Copenhagen, Denmark.

Corresponding author: Orhan Bulut Tel: +45 3862 6951 Fax: +45 3862 3760 E-mail: Orhan.Bulut@hvh.regionh.dk

Results: Eight of the 10 procedures were performed in outpatient settings and completed within 60 minutes. The postoperative course was uneventful in each patient. The median follow-up was 11 months (range 4–15).

Conclusion: This approach would appear to be a safe and reasonable alternative option for local treatment of a prolapsed colostomy stoma.

This paper was presented at the annual meeting of the Danish Surgical Society, Copenhagen, Denmark, June 13–15, 2012.

Disclosures

Orhan Bulut has no conflicts of interest or financial ties to disclosure.

Introduction

Stoma prolapse is one of the late complications of end colostomies and the estimated incidence is reported as ranging from 2–3% to 12%, dependent upon follow-up [1]. Stomal prolapse interferes with the patient's quality of life and results in peristomal dermatitis, bleeding and difficulty in fitting the stomal appliance. Occasionally, stomal prolapse may lead to incarceration and strangulation requiring surgical correction. In the absence of an associated hernia, revision of the stoma usually does not require a laparotomy [2]. Some minimal invasive techniques including the use of stapling devices have been described for local correction of stomal prolapse [3–5]. However, most of these procedures are challenging on fragile elderly patients, especially in the case of incarceration and strangulation.

We present a simple technique similar to an Altemeier perineal proctectomy for the local surgical treatment of stomal prolapse, under minor sedation in a series of 10 patients.

Methods

Surgical technique

The patient is placed in the supine position and 15 mg pentazocine and 5 mg midazolam are given intravenously for analgesia and sedation, respectively. A full thickness circumferential electrocautery incision is made on the prolapsed bowel approximately 5–7 mm from the mucocutaneous junction (Fig. 1). The space between the 2 layers of the prolapsed bowel wall are identified with the tip of a surgical clamp and circumferentially incised (Fig. 2). The everted colon is dissected, and the feeding vessels immediately adjacent



Figure 1 Circumferential electrocautery incision on the prolapsed bowel.



Figure 2 Identification of the space with the tip of a surgical clamp between the 2 layers of the prolapsed bowel.

to the bowel wall of the elongated section of prolapsed colon are ligated from the inner component of the prolapsed colon, effectively doubling the length of everted segment (Fig. 3). The elongated bowel is drawn out through the colostomy opening. Once, haemostasis has been achieved, the prolapsed colon is resected and the new stoma is fashioned as an end stoma with absorbable eversion sutures (Fig. 4). The sutures incorporate serosa at the base of the stoma including the circumferential mucosal edge. Three or four stay sutures are inserted between the edges of the remaining circular mucosal wound and the open end of bowel. It is important to see that there is an adequate amount of bowel projecting beyond the skin level to avoid stenosis. Further sutures are then placed between the stays to secure an accurate apposition of the two epithelial surfaces. Eversion of the new stoma prevents the development of the stricture at the anastomotic site.



Figure 3 The everted colon segment following the dissection of feeding vessels adjacent to the bowel wall.



Figure 4 The corrected stomal prolapse just after final maturation.

Results

A total of ten patients with full thickness prolapse of end colostomy underwent this procedure between October 2010 and November 2011. Table 1 summarizes demographic and perioperative data. Initial surgery was performed for colorectal cancer in 7 patients. Two patients were operated for ischemic colitis and one, previously operated for anal atresia, underwent sigmoidostomy as a final surgical procedure. Stomal prolapses developed within 3–16 months after the initial surgery and different conservative measures have been tried in the management of this complication. Two patients underwent emergency surgery by this technique due to incarceration or strangulation of the prolapsed colostomies (Fig. 5), requiring in-patient rather than day surgery.



Figure 5 Incarcerated stomal prolapse with oedema and ulcerations.

In two patients who had developed anastomotic stricture, and had been treated with several mechanical dilatations, an anastomosis was fashioned between the distal end of the intestine and the mucosal edge. All procedures were completed within 60 minutes and the blood loss was minimal. The postoperative course was uneventful in each patient. The median follow-up was 11 months (range 4–15). In the follow-up period, two patients had recurrences at 3 and 5 months, respectively.

Discussion

Treatment options for stomal prolapse vary from temporary, conservative measures to surgical intervention. Conservative measures include osmotic therapy with granulated sugar and manual reduction often results in recurrence [6]. A variety of surgical techniques has been used either locally at the stoma site or following laparotomy with attempting internal fixation or translocation of the colostomy. Surgical intervention with local revision can be performed in the absence of an associated hernia and laparotomy can be avoided in the majority of the cases. The procedures requiring laparotomy or major stoma revision are associated with remarkable morbidity, especially in elderly patients. In general, conventional procedures are more difficult to perform and often need general anaesthesia followed by several days of hospitalisation. Abulafi et al. described an adaptation of Delorme's technique to treat mucosal prolapse. This method involves an incision to the mucosa near the mucocutaneous junction followed by excision of the redundant mucosa and plication of the muscular wall [7].

Recently, several methods describing the use of stapling devices to amputate the prolapsed segment as a local correction without laparotomy have been published. In general, the stapling devices seem to be useful in the local treatment of mucosal prolapse and the procedures can be performed under sedation without further medication or general anaesthesia [5,8,9]. However, avoidable complications such as ulceration and strangulation in cases with prolapse in permanent stomas require acute surgical treatment. Several attempts of manual reduction as a temporary measures in fragile, elderly patients may result in severe prolapse with resultant bowel oedema or ischaemia and strangulation. Local care of stomal prolapse is possible especially if the stoma is not incarcerated [10]. Therefore, the application of stapling devices may not be an easy and safe option in cases of oedematous, ischemic prolapsed colostomy in the emergency situation.

Only two of our patients underwent emergency surgery in this study and they were discharged on the first postoperative day. All

Table I Patient characteristics and perioperative data.

Patient	Gender	Age	Reason for colostomy	Initial surgery	Complications	Follow-up (months)
1	F	70	ischaemic left colon	LH	-	4
2	M	61	rectal cancer	APR	-	15
3	M	57	rectal cancer	APR	recurrence	14
4	M	75	rectal cancer	APR	-	14
5	M	77	ischaemic left colon	LH	stricture	12
6	M	38	anal atresia	Sigmoid colostomy	stricture	13
7	M	75	rectal cancer	HO	-	10
8	F	72	rectal cancer	HO	-	7
9	M	56	sigmoid colon cancer	HO	recurrence	6
10	M	71	rectal cancer	APR	-	4

F:female M: male LH:left hemicolectomy APR:abdominoperineal resection HO:Hartmanns operation

patients rapidly returned to their normal life and recovered well without any complications. Two recurrences have been observed with this technique during the follow-up period. One underwent the same procedure for recurrence and another patient is now ready for reversal procedure. Although we currently use this approach only for stomal prolapse of end colostomies, it may be possible to be performed on patients having prolapsed loop stomas.

Conclusion

Although long-term data are lacking, this approach seems to be easy and safe to perform and is a reasonable option for local treatment of a full thickness prolapsed colostomy stoma, particularly in cases of emergency. We have successfully employed Altemeier's perineal proctectomy technique to treat end colostomy prolapse as a outpatient procedure in 8 out of ten patients in our small series and commend this minimal technique as suitable for day surgery practice.

References

1. Shellito PC. Complications of abdominal stoma surgery. *Dis Colon Rectum* 1998; **41**:1562–1572.
2. Shabbir J, Britton DC. Stoma complications: a literature overview. *Colorectal Dis* 2010; **12**:958-964.
3. Tepetes K, Spyridakis M, Hatzithefilou C. Local treatment of a loop colostomy prolapse with a linear stapler. *Tech Coloproctol* 2005; **9**:156–158.
4. Seamon LG, Richardson DI, Pierce M, O'Malley DM, Griffin S, Cohn DE. Local correction of extreme stomal prolapse following transverse loop colostomy. *Gynecologic Oncology* 2008; **111**: 549–551.
5. Ferguson HJM, Bhalerao S. Correction of end colostomy prolapse using a curved surgical stapler, performed under sedation. *Tech Coloproctol* 2010; **14**: 165–167.
6. Fligelstone LJ, Wanendeya N, Palmer BV. Osmotic therapy for acute irreducible stoma prolapse. *Br J Surg* 1997; **84**:390–391.
7. Abulafi AM, Sherman IW, Fiddian RW. Delorme operation for prolapsed colostomy. *Br J Surg* 1989; **79**:1321–1322.
8. Hata F, Kitagawa S, Nishimori H, Furuhashi T, Tsuruma T, Ezoe E, Ishiyama G, Ohno K, Fukui R, Yanai Y, Yashoshim Y, Koichi H. A novel, easy and safe technique to repair a stoma prolapse using a surgical stapling device. *Dig Surg* 2005; **22**:306–310.
9. Masumori K, Maeda K, Koide Y, Hanai T, Sato H, Matsuoka H, Katsuno H, Noro T. Simple excision and closure of a distal limb of loop colostomy prolapse by stapler device. *Tech Coloproctol* 2012; **16**:143–145.
10. Essani R. Stoma prolapse: *Semin Colon Rectal Surg* 2012; **23**:13–16.