A novel corrective approach to achieve satisfactory function of a ‘sunk’ colostomy

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ABSTRACT

INTRODUCTION Creation of gastrointestinal stomas is a common colorectal procedure associated with early or late complications, some of which demand advanced technical skills and expertise for optimal management.

CASE HISTORY A 63-year-old male underwent a defunctioning loop colostomy for locally advanced rectal cancer with liver metastasis. Three months later, he had developed a skinfold over his stoma that resulted in a horizontal skin crease traversing through the stoma, causing the stoma to ‘sink’ leading to obliteration of the stomal opening. This scenario led to ineffective attachment of a stoma appliance, resulting in painful peristomal ulcers. After excision of the anterior abdominal wall, assessment of colostomy opening was carried out, followed by closure of the subcutaneous tissues and drain fixation. An elevated colostomy with an adequate functional opening was seen after wound closure. The patient made an uneventful recovery and was discharged home. After 3 weeks, he had a fully opened, normally functioning colostomy and peristomal ulcers were almost healed.

CONCLUSIONS This case highlights the challenges of stoma management, its related risks, avoidance of delay in chemotherapy, a patient wish for early return to work, and the novel approach we adopted to deal with these issues.

KEYWORDS

Stoma – Peristomal ulcer – Anterior abdominal wall

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Any hollow organ can be manipulated into an artificial stoma as necessary, and stoma creation in the gastrointestinal system is common. A considerable number of patients develop early or late complications after stoma creation.¹ Obesity and inflammatory bowel disease have been associated with an increased risk of complications.² Technical skills to create a satisfactory stoma and its management are vital aspects of colorectal surgical practice. Early recognition of the signs and symptoms of a complication by careful assessment and prompt interventions are crucial for maintenance of a viable stoma and successful surgical outcomes.³

Case History

A 63-year-old male without significant comorbidities presented with a 3-month history of altered bowel habits, urgency and tenesmus. There was no history of weight loss or any familial colorectal cancer. Abdominal examination was unremarkable but rigid sigmoidoscopy raised suspicion of a rectal growth. Further investigations (including biopsies) demonstrated a rectal tumour 11cm from the anorectal verge. Staging investigations showed evidence of local invasion along with multiple liver metastases. Discussions in the

multidisciplinary team recommended neoadjuvant chemoradiotherapy after a loop colostomy (which was undertaken laparoscopically without perioperative complications).

Three months later, the patient complained that he was having difficulties managing his stoma. He had developed a skinfold over the top of the stoma that resulted in a horizontal skin crease traversing through the stoma, thereby causing the stoma to ‘sink’ and leading to obliteration of the stomal opening (Fig 1). This problem led to ineffective attachment of a stoma bag, with chafing that resulted in painful peristomal ulcers.

The patient was reluctant to consider stoma re-siting because he had a job that involved leaning against machinery on his right side, and the constant pain affected his quality of life (QoL). Urgent surgical intervention was required to achieve a colostomy that functioned satisfactorily to improve his QoL and to avoid delays in initiation of neoadjuvant therapy.

Management

Thorough examination was undertaken involving sitting and standing positions to assess the shape and position of

Figure 1 A 'sunk' colostomy surrounded by ulcers

the colostomy. The anterior abdominal wall was marked after taking measurements to ensure adequate excision was achieved. Elliptical markings were made ≈ 7 –8cm above the upper edge of the stoma in superolateral directions. Care was taken to ensure that the inferior aspect of the ellipse was at least as far as the radius of a typical stoma appliance to avoid subsequent impingement. A marked-out, 4cm-wide segment of the skin of the anterior abdominal wall and subcutaneous fat was excised down to the fascia using diathermy (Fig 2a, b). Good haemostasis was ensured.

Figure 2 a) Excision of the anterior abdominal wall.
b) Resulting gap after excision.

Figure 3 Assessment of the colostomy opening

The two edges were approximated to check if the stoma was opening up fully (Fig 3). Ensuring adequate excision of the anterior abdominal wall resulted in flattening and opening of the colostomy. The resulting gap was closed using interrupted synthetic polyglactin sutures by approximating the inferior edge of the ellipse to the superior edge (Fig 4). Subcutaneous tissue was closed in multiple layers using synthetic polyglactin sutures, thereby opening up the crease in which the stoma had become hidden. Skin was stitched using interrupted polypropylene sutures. One Redivac™ drain was placed in the subcutaneous space (Fig 5).

The patient made an uneventful recovery and was discharged home on postoperative day 2. After 3 weeks, he had a fully open, normally functioning colostomy and peristomal ulcers were almost healed (Fig 6a, b). He had returned to work and was extremely satisfied with the surgical outcome.

Discussion

More than 100,000 people in the UK have a stoma, and most experience problems at some point.⁴ Some of these complications demand advanced technical skills and expertise for optimal management. One of the most common problems is stomal retraction (disappearance of a normal stomal

Figure 4 Closure of subcutaneous tissues and drain fixation

Figure 5 An elevated colostomy with adequate functional opening seen after wound closure

Figure 6 a) Three weeks after surgery (note elimination of the skin crease on the left). b) Healing peristomal ulcers with a normal looking stoma.

protrusion to below skin level).³⁻⁵ Stomas are managed more readily if they project at an appropriate level above the skin but, if they retract, maintenance of an adequate seal necessary to contain effluent becomes very difficult.¹ Convex-shaped appliances and stoma belts have been recommended for retracted/flush stomas because the dome shape of the convex appliance pushes around the stoma and makes the stoma protrude, and the belt helps to maintain the seal.⁶ In our case, however, the colostomy had sunk so much that the patient could not see the colostomy edges easily, thereby hampering application of a convex appliance.

This scenario presented a challenging conundrum. The patient was struggling with changing the stoma appliance due to the skin crease, and painful peristomal ulcers were affecting his QoL considerably. Also, he required neoadjuvant therapy, which could not be initiated due to ulceration. He was unwilling to consider re-siting of his colostomy or raising of an ileostomy owing to the type of work he did.

This scenario was managed by a multidisciplinary team (consultant surgeons, surgical trainees, radiologist, tissue viability nurse, stoma nurse). A careful and very calculated approach was adopted based upon the principles of cosmetic effect. Many important aspects of the procedure were considered in detail. Perioperative measurements and markings were made, and elliptoid markings were used to ensure adequate excision of the anterior abdominal wall to achieve a good functional outcome. Extra care was taken to keep the scar fairly high to ensure it would remain clear of the flange of the stoma appliance. The patient was made fully aware of the limitations and risk of failure.

The technique described here draws parallels to the principles of blepharoplasty of the upper eyelids, whereby 'droopy' eyelid tissue is recontoured to unblock the visual axis.⁷ For our patient, other options included re-siting (which was not undertaken due to the strong wishes of the patient), a 'rectus sling' (which helps prevent sinking of the stoma)⁸ or a peristomal approach (which carries the risks of injury to the colon, peristomal abscess, and delayed healing).

The patient is in regular contact with the stoma nurse. He is very happy with the stoma because he can change the stoma appliance under vision and with ease. Elimination of the skinfold (in which the stoma was obscured) opened the colostomy and helped in care of the stoma and skin-ulcer wounds. The arcuate surgical wound healed quickly to the satisfaction of the patient.

Conclusions

An early, successful result established the feasibility of our approach, which has not been reported previously. This case highlights the importance of thinking differently when dealing with such challenging conundrums. A very satisfying outcome was achieved for the patient and surgical team.

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