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PRACTICE POINTER

Common intestinal stoma complaints

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What you need to know

- The type of stoma may indicate the likelihood of a particular complication
- Consider incomplete obstruction in patients with high output stomas
- When a patient is at risk of dehydration from high output, advise drinking oral rehydration solutions instead of plain water, which can compound the problem
- Avoid modified release medications if patients are experiencing high stoma output. Some capsules can be opened, some tablets may be crushed to allow for faster absorption—consult a pharmacist for assistance
- Prolapsed stomas can be safely reduced in primary care settings and rarely need urgent referral
- Removal of the stoma bag is essential to complete examination. Ask the patient to do this to reduce discomfort and always make sure they have a replacement bag

Approximately 100 000 people in the UK have an intestinal stoma,[1] which are most commonly formed after surgery for cancer or inflammatory bowel disease (IBD). They can be described according to the part of the bowel (small or large) used to create the stoma and can be temporary (with potential for reversal at a later date) or permanent. Many different types of stoma exist (eg, nephrostomy, urostomy), but in this article we focus on common complaints associated with intestinal stomas that may lead patients to present to general practice.

How should I approach the examination?

Imagine a patient presenting to you in general practice with concerns about discomfort in their stoma. After a thorough history, you might examine them as follows:

Ask the patient whether the stoma has changed in appearance. Then, inspect the stoma looking specifically at whether it sits proud of the skin and if it is healthy, pink, and moist.

Consider digital examination of the stoma if you have concerns about function. This is an intimate examination, so good communication is essential. Ensure your patient has a replacement stoma bag and ask them to remove the bag where possible—they are the experts. Removal sprays can reduce discomfort.

Gently insert a finger into the lumen(s) of the stoma:

- *Is the abdominal wall aperture tight?* Your finger should slide easily through to the rectus sheath—a thin, sharp, clearly demarcated edge—without it feeling snug. A tight aperture may represent stenosis.

- *Is the bowel tube kinking?* It is normal to not have a straight bowel tube, but feeling multiple twists above the rectus sheath may represent a subdermal prolapse or hernia.

- Assess for a parastomal hernia by asking the patient to stand and cough. This will appear as bulging around the stoma site.

What common complaints might I encounter and how should I manage them?

Some types of stoma are more prone to specific complications, eg, high output in ileostomies or retraction/parastomal hernia in colostomies. Stomas that are fashioned in an emergency may not have benefited from the same amount of time to plan as elective operations with regard to location, and they can lie in skin creases or at clothing lines, increasing skin and device fitting issues.

Skin and device issues

- Over-granulation is the formation of nodular pink friable tissue as part of the healing process. It is a common cause of bleeding and topical application of silver nitrate via a pen can be administered by the stoma team or an experienced clinician.
- Consider cutaneous manifestations of disease such as malignant deposits or fistulae and pyoderma gangrenosa in IBD. Consider referral to a specialty team if appropriate
- Bag leaks can be distressing to patients and lead to skin excoriation (more commonly from ileostomies where effluent is irritant). Specialist stoma nursing teams can offer valuable advice on device issues[2] but reassure your patient that trial and error with devices is a completely normal part of the process of learning to live with a stoma.

Tips from expert patients

- A wider adhesive section may be helpful in preventing leaks.
- Warm bags will stick better than cold bags.
- The bag can fill with gas, and the adhesive can be partially peeled back to release the pressure without complete removal, thus limiting skin trauma.

Increased output

As the large bowel resorbs fluid, an ileostomy will produce more liquid output than a colostomy. It is reasonable to aim for output of less than 1-1.5 L a

day,[3] and any increase from this or the patient's norm would be considered "high output." Consider medication, change in diet, or infective causes when output increases. However, it is also worth considering that a high output stoma can be a sign of incomplete bowel obstruction secondary to adhesions, hernias, and residue within the lumen. This can present as watery output, much like overflow diarrhoea as a presentation for constipation. If a patient has associated vomiting or abdominal pain, seek urgent surgical review.

When reviewing a patient with a high output stoma the immediate concerns are dehydration and/or electrolyte imbalance. If no clinical evidence of dehydration is present, consider checking urea and electrolytes, phosphate, magnesium, and calcium.

Take steps to "slow up" the stoma by commencing an anti-diarrhoeal agent even if you suspect infective causes. Use orodispersible preparations to ensure absorption; start with 2 mg of loperamide four times a day, and escalate up to a maximum of 16 mg four times a day based on response. Send a stool sample for culture (and include clostridiodes difficile as appropriate).

Drinking plain water may seem like obvious advice to give to a patient who is at risk of dehydration from a high output stoma, but water alone will worsen the problem. Increased transit as a consequence of the stoma inhibits absorption, and dilution of the enteric contents draws electrolytes into the bowel lumen.[4] Advise patients to drink oral rehydration solutions (eg, Diarolyte) instead. Anecdotally, eating marshmallows or jelly babies may thicken effluent, as gelatine utilises water within the bowel.[5]

Arrange for urgent referral to secondary care if

- High output is ongoing despite the measures described
- Blood results show evidence of electrolyte disturbance
- The patient is clinically dehydrated.

If output is high the patient may not be adequately absorbing nutrients or medications.[4] If medications are essential, consider switching to liquid or dissolvable preparations, and avoid modified release versions which may not be absorbed owing to fast transit while symptoms are ongoing.

For patients with high output, leading to multiple hospital admissions, or when their symptoms become unmanageable, consider early reversal of the stoma[6] and referral to the surgical team. Stoma reversal warrants a detailed discussion and is dependent on patient preferences and surgical factors, eg, risk of anastomotic leak or anticipated technical difficulties.[6]

If no features of bowel obstruction are present (such as absolute constipation, vomiting, abdominal distension), some patients report that chia seeds help thicken stoma output, and moistening food may regulate stoma output; and some find that avoiding bulky foods after 6 pm limits the bag from bursting or leaking overnight.

Decreased output

Decreased stoma output can range from less than the patient's normal output to absolute constipation.

Trigger foods can lower stoma output. Somewhat paradoxically, high fibre vegetables such as brassicas may contribute to bowel obstruction as the fibrous residue can block the bowel, and mushrooms and nuts are common trigger foods. There is a certain amount of trial and error involved in managing diet, so supporting patients is essential; consider referral to a dietician to discuss a low residue diet (box 1).

Box 1: Low residue diet

Things to avoid

- High fibre carbohydrates such as brown bread, brown rice
- Pith, pips, and skins off fruits
- Seeds, nuts, dried fruits
- High fibre vegetables such as celery, peas, broccoli, including the skins of jacket potatoes

Things to encourage

- Water, squash, fruit juice, non fizzy drinks.
- High protein food such as meat, fish, pulses
- Low fibre carbohydrates such as white bread, white pasta

What to ask to determine if bowel obstruction has occurred?

- *How has the stoma output changed? Over how long?* Short sudden history of no output whatsoever is most concerning.

- *Do you have associated abdominal distension, vomiting, or pain?* These features suggest obstruction.

- *What surgery has occurred, and how long ago?* Adhesions are the most common cause of small bowel obstruction, and the chance of adhesion formation is higher in open surgery and surgery for inflammatory or infective conditions.

Fully examine the abdomen and all hernial orifices. Having a stoma does not rule out other causes of bowel obstruction.[5] If you suspect obstruction, refer the patient urgently to hospital as they may need computed tomography imaging and decompression of the gut via a nasogastric tube.[5]

Prolapse

A prolapsed stoma is when the bowel telescopes out of the stoma orifice. It can be extensive (fig 1). Assess the health of the mucosa before attempting a reduction—it should be moist and pink much like the intra-oral mucosa. A prolapse rarely represents an emergency[7] but necrosis, ulceration, or a painful prolapse are reasons to refer urgently.

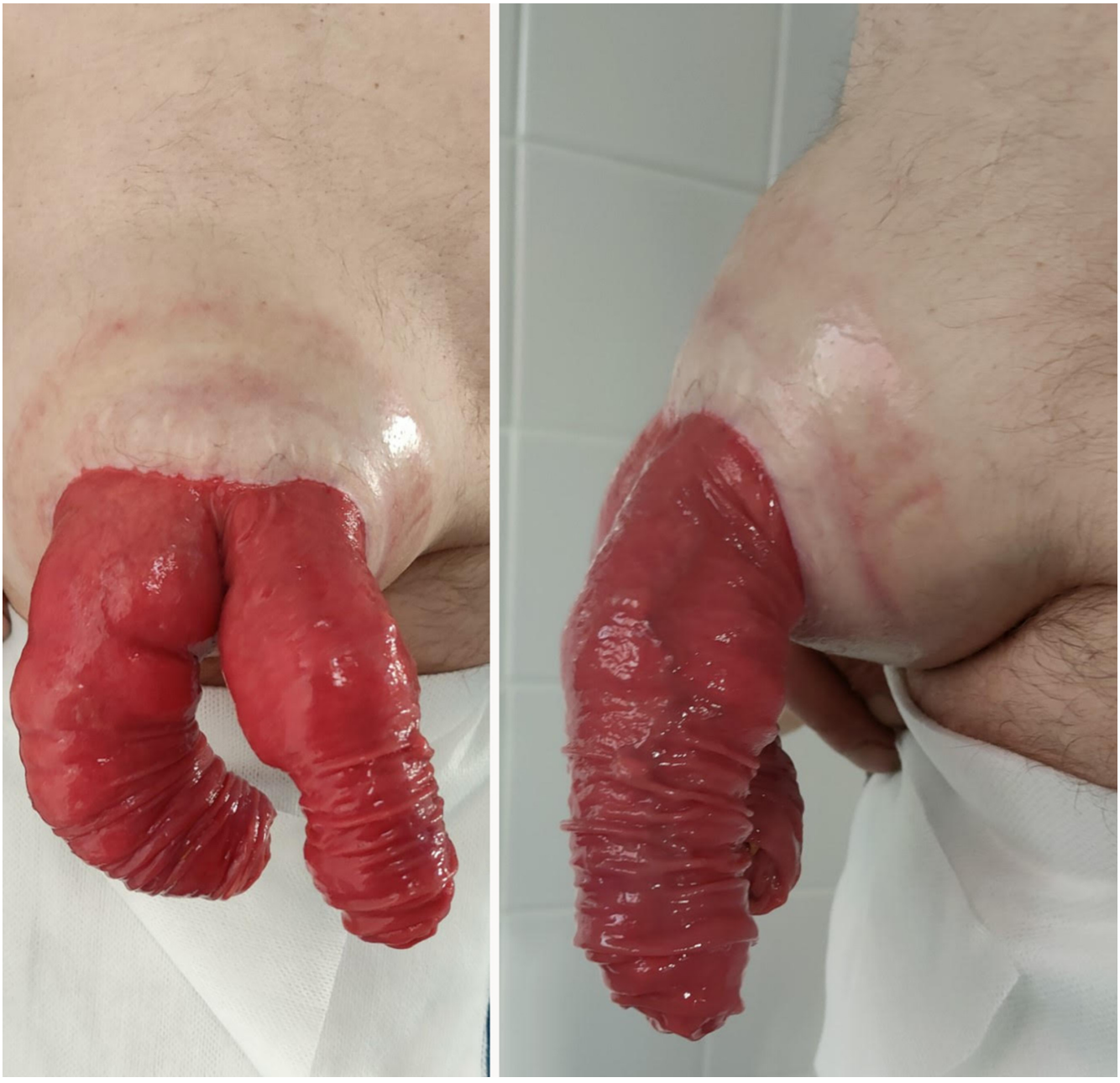


Fig 1 | This patient underwent an emergency transverse loop colostomy for closed loop large bowel obstruction secondary to a sigmoid stricture. Unfortunately, because of the patient's multiple severe comorbidities it is not safe to refashion his stoma. He is constantly uncomfortable with this prolapse, and he needs to empty his bag more often, but otherwise he manages well with a larger bag, and a specialised support is being made for him

Ask the patient to lie down flat to relax their abdominal wall. Use concentrated glucose solution (50% dextrose or similar) on gauze, which often allows the prolapse to decrease in size as it reduces oedema through osmosis, and apply this to the prolapsed bowel. This can facilitate manipulating it back inside the abdominal cavity. Grip the prolapsed section for 5 minutes, then apply gentle sustained pressure to encourage the prolapse back into the abdomen. A similar process can be followed without using glucose solution and simply using sustained pressure.

Prolapses commonly recur, which can be uncomfortable or distressing. Encourage patients to place a hand over the stoma when coughing or straining. A new type of stoma bag is often the best management; surgery is a significant undertaking, and a bigger bag often provides a simple, effective, and safer solution.[7]

Retraction, stenosis

Retraction usually represents tension on the bowel from within the abdomen and can be progressive. A stoma bag with a thick raised fitting (convex bag) applies pressure around the stoma, helping to evert the bowel and minimise contact between the effluent and skin, but in cases where devices fail to resolve the problem or skin issues secondary to leakage become troublesome, surgery may be needed to refashion.[7] Retracting ileostomies are more problematic for patients than colostomies, and the caustic contents are irritant to the skin.

Stenosis occurs after scar tissue develops at the stoma orifice. Early signs are an increase in flatus, thin stools, and abdominal pain. Stenosis impedes outflow if not managed, and laxatives and a low residue diet can be helpful. Fortunately, surgery is only sometimes necessary.

Hernia

Parastomal hernias are common and can affect up to 40% of people with a stoma.[8] Definitive management is to reverse the stoma, which is not always possible or appropriate as risks may outweigh benefits. One solution is to re-site the stoma, but the risk of herniation at the new site remains. As with any hernia, refer strangulation or obstruction to the surgical team urgently. A sudden change to very liquid output or absolute constipation can indicate obstruction, and a newly painful hernia may indicate strangulation. Overlying skin changes are a late sign of strangulated bowel within a hernia.

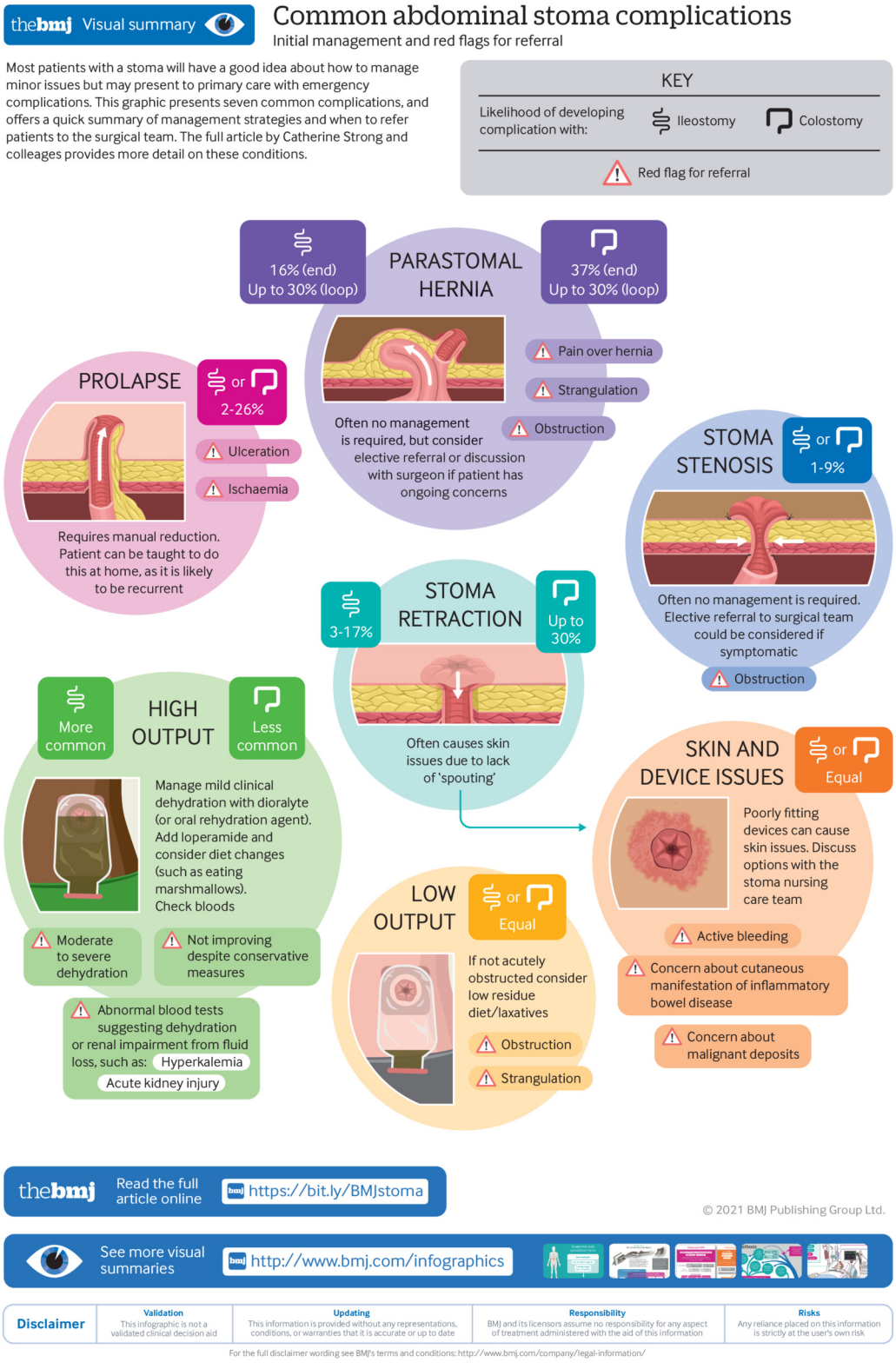
Holistic care of patients living with a stoma

Consider referring any patient with a stoma to psychological support services.[9] The psychological impact of having a stoma cannot be underestimated, especially when perioperative counselling has been limited in the emergency setting.

Many patients report that adjusting to their stoma is difficult at first. Their body image may be further affected by complications with the stoma, but support from the stoma care nursing team can build confidence.

Most activities are made possible with the right stoma equipment; however, sex and relationships can be major sources of anxiety.[10] Many patients may not know how to approach this discussion with their doctor, and facilitating this may be instrumental in allowing them to explore their anxieties. Doctors can signpost to specialist stoma nursing teams who will often be very experienced in offering practical advice and support. Patients should be given the opportunity to discuss body image and can be signposted to the many support groups that exist or to counselling services if appropriate.

Managing a stoma can be a lifelong challenge. Patients' mental health may be affected, and they may be frustrated by the process of regaining their "old" life. The key to supporting a patient is empowering them to regain control of their own body,[11] and actively involving them in management of their stoma is essential to this.



Education into practice

- How might you facilitate discussion with a patient who has concerns about their stoma affecting their life? How could you sensitively broach the subject of sex and relationships?
- Does your practice have a working relationship with a specialist stoma nursing team, and do your patients have access to their service?
- Could you improve support of patients with stomas in your practice by auditing how many patients have had a discussion about their

mental health, body image, and effect on personal relationships since having a stoma formed?

How this article was created

The information in this article is based on expert opinion and reinforced with guidance from literature published since 2000, using search terms such as 'stoma' 'stoma complications' etc.

How patients were involved in the creation of this article

George Wilson, a patient in our department, agreed to share his story. He provides a valuable insight into how he manages his stoma, and what is appropriate for a patient to manage. He has reviewed the final article and has made significant contributions such as advising on diet and lifestyle.

Additional educational resources

- The British National Formulary provides an excellent free resource on how to prescribe for those with a stoma: https://bnf.nice.org.uk/treatment-summary/stoma-care.html

Resources for patients

- This free resource contains a recipe for an oral rehydration solution, particularly helpful when patients are self-managing increased output: https://www.imperial.nhs.uk/~/media/website/patient-information-leaflets/gastroenterology/st-marks-solution.pdf
- This free resource is from an industry representative, and provides additional tips and tricks for managing stomas: https://www.salts.co.uk/en-gb/your-stoma/living-with-a-stoma/dietary-nutritional-advice

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Contributorship and guarantor: CS and KC conceived the article and are guarantors. All authors wrote and reviewed the article, and helped with content. GW is a patient author and he reviewed the final piece, as well as contributing to the content.

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1 Burch J. Management of stoma complications. *Nurs Times* 2011;107:17-8, 20.pmid: 22167970
2 Lyon CC, Smith AJ, Griffiths CE, Beck MH. The spectrum of skin disorders in abdominal stoma patients. *Br J Dermatol* 2000;143:1248-60. doi: 10.1046/j.1365-2133.2000.03896.x pmid: 11122029
3 Rowe KM, Schiller LR. Ileostomy diarrhea: Pathophysiology and management. *Proc (Bayl Univ Med Cent)* 2020;33:218-26. doi: 10.1080/08998280.2020.1712926 pmid: 32313465
4 Arenas Villafranca JJ, López-Rodríguez C, Abilés J, Rivera R, Gándara Adán N, Utrilla Navarro P. Protocol for the detection and nutritional management of high-output stomas. *Nutr J* 2015;14:45. doi: 10.1186/s12937-015-0034-z pmid: 25956387
5 Catena F, De Simone B, Coccolini F, Di Saverio S, Sartelli M, Ansaloni L. Bowel obstruction: a narrative review for all physicians. *World J Emerg Surg* 2019;14:20. doi: 10.1186/s13017-019-0240-7 pmid: 31168315
6 Aljorfi AA, Alkhamis AH. Aljorfi, Abdulhameed H. Alkhamis. A systematic review of early versus late closure of loop ileostomy. *Surg Res Pract* 2020;2020:9876527. doi: 10.1155/2020/9876527 pmid: 32953972
7 Kwiatt M, Kawata M. Avoidance and management of stomal complications. *Clin Colon Rectal Surg* 2013;26:112-21. doi: 10.1055/s-0033-1348050 pmid: 24436659
8 Kim JT, Kumar RR. Reoperation for stoma-related complications. *Clin Colon Rectal Surg* 2006;19:207-12. doi: 10.1055/s-2006-956441 pmid: 20011322
9 Hong KS, Oh BY, Kim EJ, Chung SS, Kim KH, Lee RA. Psychological attitude to self-appraisal of stoma patients: prospective observation of stoma duration effect to self-appraisal. *Ann Surg Treat Res* 2014;86:152-60. doi: 10.4174/astr.2014.86.3.152 pmid: 24761424
10 Krouse R, Grant M, Ferrell B, Dean G, Nelson R, Chu D. Quality of life outcomes in 599 cancer and non-cancer patients with colostomies. *J Surg Res* 2007;138:79-87. doi: 10.1016/j.jss.2006.04.033 pmid: 17196990
11 Danielsen AK, Burcharth J, Rosenberg J. Patient education has a positive effect in patients with a stoma: a systematic review. *Colorectal Dis* 2013;15:e276-83. doi: 10.1111/codi.12197 pmid: 23470040