

As pointed out by Massey *et al.*, we acknowledge that it would have been of value to include data on health-related quality of life (HRQoL) in our report. A recent Swedish study concluded that patients with a permanent end colostomy experience an inferior HRQoL compared with those who are stoma free [2]. In contrast, a previous Cochrane review showed only a minor negative influence of a permanent end colostomy on HRQoL when comparing patients treated with abdominoperineal excision or Hartmann's procedure with those undergoing anterior resection [3]. Of note, several of the studies included in the above analysis did not report tumour height or level of the anastomosis, known risk factors for worse bowel function [4]. Another explanation for the apparent lack of differences may be response shift, meaning that patients may adapt to their new condition with time, appreciating the notion that stoma permanence was inevitable and, as such, a small price to pay for survival. In addition, O'Leary *et al.* found that temporary defunctioning, by means of loop ileostomy, significantly impaired HRQoL while a stoma was present; HRQoL scores thence improved towards preoperative levels following ileostomy closure [5]. Speculatively, the effect on HRQoL sustained by stoma permanence may differ between patients with a deliberate end colostomy and those having a loop ileostomy remaining in place. Still, to the best of our knowledge, there is no study to date that corroborates this assumption.

In Sweden, conservative treatment for rectal cancer with Hartmann's procedure or an abdominoperineal excision is already relatively more common than in other countries [6,7]. Ideally, more patients in Sweden should be considered as eligible for anterior resection, while those ultimately left with a loop ileostomy are likely to benefit from conversion to an end colostomy.

While we agree with Massey *et al.* that formation of a defunctioning stoma is a decision not to be taken lightly, the complex question of when to fashion such a stoma cannot be answered by the present study alone. In conclusion, we appreciate the remarks by Massey *et al.* and encourage further reports on stoma outcome after surgery for rectal cancer with regard to its impact on HRQoL.

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Mucosal ischaemia and bowel gangrene can have different treatment options in sigmoid volvulus

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Dear Sir,

We read with great interest the article entitled 'A new classification, treatment algorithm and prognosis-estimating system for sigmoid volvulus' by Atamanalp published in the November 2017 edition of *Colorectal Disease* [1]. We believe that sigmoid volvulus requires a staging system for determining the prognosis and comparison of results. We appreciate the efforts of Atamanalp for creating a staging system for sigmoid volvulus. However, we want to ask some questions about this classification and share our observations about a case.

- According to the classification, Stage III is described as gangrenous sigmoid volvulus. Stage IIIA subgroup is defined as 'good bowel condition', and this definition in the presence of gangrene is confusing. Similarly, Stage IIIB is described as the subgroup 'presence of bowel ischaemia, oedema, perforation or

difference in proximal and distal bowel diameters'. Again, bowel ischaemia in the gangrenous sigmoid volvulus group is confusing. In a previous study by the author [2] it was mentioned that mucosal ischaemia could occur without gangrene. We agree with this, which could change the treatment modalities below, but the absence of ischaemia with gangrenous bowel is unlikely. An intellectually disabled 28-year-old woman was admitted to the emergency room with constipation for 3 days. There was distension on abdominal examination and no stool in the rectum. There was no rectal bleeding. The white blood cell count was $13\,300/\text{mm}^3$. Plain abdominal X-ray and computed tomography were interpreted as compatible with sigmoid volvulus and the patient was referred for a colonoscopy. The appearance of local ischaemic mucosa was observed (Figs 1 and 2) and colonoscopic decompression with the insertion of a rectal tube was performed. The clinical findings were relieved immediately and a repeat colonoscopy after 48 h confirmed regression of ischaemic areas in the colon (Figs 3 and 4). The patient was operated on

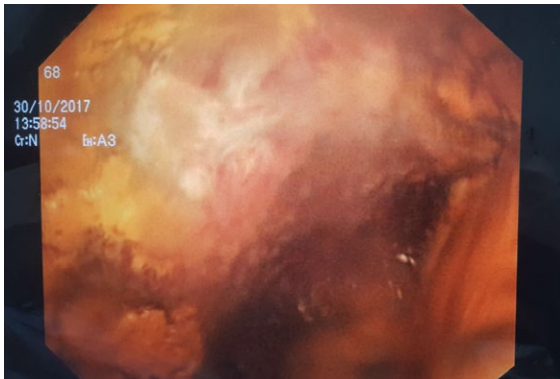


Figure 1 Initial colonoscopy.

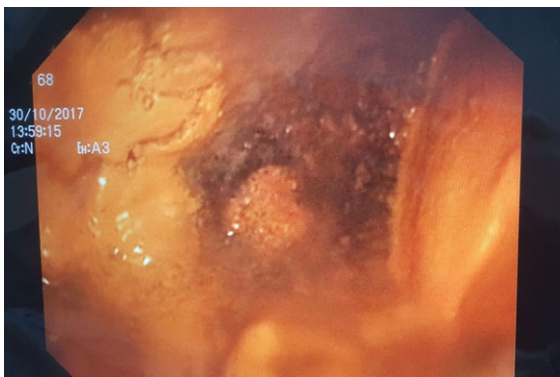


Figure 2 Initial colonoscopy.

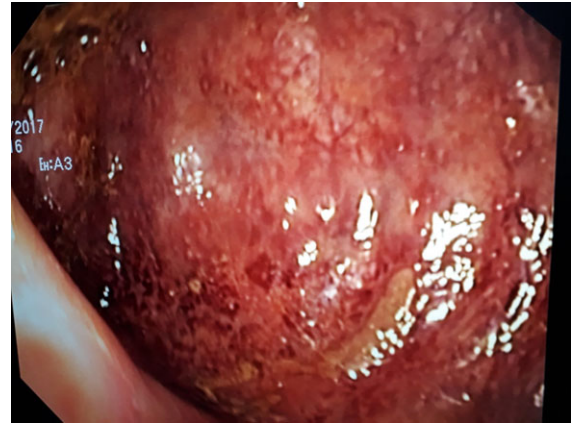


Figure 3 Second colonoscopy.

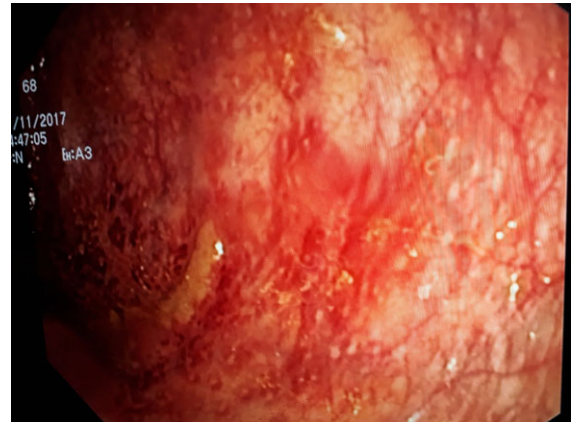


Figure 4 Second colonoscopy.

electively after 14 days, and there was no gangrene or any other ischaemic features in the sigmoid colon during surgery. This case demonstrates that mucosal ischaemia can regress and resolution can avoid emergency surgery.

- 2 In cases of gangrenous sigmoid volvulus (Stage III), the diameter discordance between the proximal and the distal colon was reported as a determining factor for the type of surgery. There is also a diameter gap in cases of nongangrenous sigmoid volvulus. Why does the difference in diameter matter only in gangrenous cases?
- 3 It would be expected that a classification system should reflect the severity of the disease and the outcomes in a graded manner. However, in this classification, the mortality of Stage IIA is lower than Stage IB, and the mortality of Stage IIIA is lower than Stage IIB. Can such a grading be a part of this classification?

We thank the author for his valuable efforts.

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Reply to ‘Mucosal ischemia and bowel gangrene can have different treatment options in sigmoid volvulus’

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Dear Sir,

I thank Uylas and Kayaalp [1] for their interest in my work and I appreciate their comments.

Firstly, as the authors stated, the Atamanalp classification [2] describes Group III patients as gangrenous cases. It is clear that such patients with sigmoid volvulus (SV) require sigmoid resection independent of other factors [3]. ‘Good bowel condition’ in Subgroup IIIA and the ‘presence of bowel ischaemia, oedema or difference in proximal and distal bowel diameters’ in Subgroup IIIB describe the condition of the proximal and distal bowel ends following resection. In my cases, for a good outcome of a planned anastomosis, the bowel edges were best evaluated after the resection, and the viability, thickness and diameter of the bowel ends were sometimes unrelated to the initial condition of the bowel. On the other hand, as we know, the presence of perforation, which may be determined preoperatively or at operation causing localized or generalized peritonitis, is generally accepted as a risk factor for a primary anastomosis [4].

Secondly, the presence of bowel gangrene is one of the most important factors in the decision regarding operative technique in the treatment of SV [4]. In my experience, the presence of a mismatch in the proximal and distal bowel diameters alone is a reason to avoid a primary anastomosis in patients with gangrenous bowel. Conversely, in nongangrenous cases, avoiding a stoma and using some alternative anastomotic techniques such

as end-to-side, side-to-end or side-to-side, extension of the narrow edge by an anti-mesenteric cut or reduction of the large edge by suturing are generally preferred.

Thirdly, as the basic parts of my classification [2], I used the American Society of Anesthesiologists (ASA) grading system [5], which is widely used in the evaluation of candidates for surgery, in addition to the patient’s age and the viability and condition of the bowel. Although advanced age and gangrenous bowel make the prognosis worse in SV, comorbidity that dramatically increases the ASA score also worsens the prognosis [6]. In the Atamanalp classification system, I estimated the expected mortality and morbidity rates taking into consideration all of the factors mentioned above. As discussed, ASA Classes I–III were placed in Subgroup A, while ASA classes IV–V were in Subgroup B. As we know, the mortality of ASA Classes I–III is significantly lower than that of ASA Classes IV and V (0.06–4.3% *vs* 7.8–51%) [5]. Therefore, in my system, the mortality of Subgroup IIA was naturally lower than that of Subgroup IB. Similarly, the mortality of Subgroup IIIA was intrinsically lower than that of Subgroup IIB [2].

Finally, regarding the case reported by the authors, I congratulate the team on their careful treatment choice. In my cases, although emergency surgery was an alternative option with borderline bowel ischaemia, the most appropriate way was to perform a repeat endoscopic examination after a few hours, which is described as a second-look endoscopy [7].

I thank Dr Uylas and Dr Kayaalp again for their attentive and valued comments.

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