



Ileostomy closure: is timing of the essence?

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Surgical treatment for colorectal cancer is well-standardized, but despite the technological advances, anastomotic leak (AL) remains one of the most dreaded complications. Male sex, preoperative chemoradiotherapy, steroid use, long operating time and contamination of the operative field have been reported as significant risk factors for AL after anterior resection of the rectum [1].

A diverting stoma is recommended in patients with middle and low rectal cancer, especially in those patients with a high-risk anastomosis. There is a very common belief that ileostomy does not prevent AL. However, the randomised controlled trial (RCT) done by Matthiessen et al. highlights this issue, reporting a symptomatic leak rate of 10.3% in patients with a defunctioning stoma and 28.0% in those without a stoma, while the need for urgent abdominal reoperation was 8.6% versus 25.4%, respectively [2]. These data were confirmed by other recent prospective and multicenter trials, presenting double the rate of AL among the group of non-stoma patients after low anterior resection [3]. These results show the importance of loop ileostomy in patients at high risk of AL.

A diverting stoma is also used in some emergent colonic resections with predisposing factors for AL, such as hemodynamic instability and peritoneal contamination. Recently, the European Society of Coloproctology published guidelines for the management of diverticular disease, recommending primary anastomosis even in Hinchey IV diverticulitis. In many of the studies providing the evidence for this recommendation, a diverting ileostomy was utilized [4]. However, the guidelines do not clearly define absolute indications for such a diverting stoma in this situation.

Despite the reduction of AL and consequently the number of re-interventions, a loop ileostomy may increase the overall complication rate. Inherent complications such as kidney failure cause a great number of readmissions, in particular among the elderly [5]. Moreover, data from other studies report a rate of major complications after ileostomy closure of 9.3% [6], an incidence of AL 13.6% and a risk of reintervention of 4–15% [7, 8]. Recently, our group [8] published prognostic factors for complications after loop ileostomy reversal. These include chronic kidney disease, any complication after primary surgery and delayed ileostomy closure (more than 10 months after primary surgery). Moreover, the presence of the stoma has a detrimental effect on the patient's quality of life, which is not always reported in the literature. Most of the diverting stomas are intended to be temporary, but 10.6–19% of patients remain with a permanent stoma. In particular, those patients of advanced age, with postoperative complications, metastatic disease and in poor general condition [9, 10].

Some surgical alternatives such as the two-stage pull-through hand-sewn coloanal anastomosis after ultralow rectal resection [11], a temporary percutaneous ileostomy [12] or a ghost ileostomy [13] have been proposed to avoid a conventional stoma and the associated complications in patients having low rectal resection. However, their role needs to be more clearly defined.

There is no agreement on the optimal time for ileostomy reversal. Early closure of ileostomy has been proposed by some groups with the aim of reducing major complications in high risk patients. These especially include those at risk of kidney failure. Early closure seems to be feasible in carefully selected patients, but the literature is not clear regarding related morbidity.

Recent systematic reviews and meta-analyses of RCTs have shown, regarding ileostomy reversal before 30 days after primary surgery, that there is no significant difference in morbidity, reoperation or leak of the primary anastomosis between early and late closure [14–17]. Results from the EASY trial [18] suggest that early ileostomy closure was associated with fewer postoperative complications but

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no difference in health-related quality of life 12 months after rectal resection. However, Podda et al. [17] and Menahem et al. [19] highlighted a higher rate of wound complications in the early closure group compared to the delayed closure group. The main limitation of these systematic reviews and meta-analyses is that all analyzed almost the same RCTs, reducing their scientific robustness.

Timing of ileostomy reversal in patients who are offered adjuvant therapy is even less clear. In general, reversal is performed after adjuvant chemotherapy, delaying surgery for a median of 6.8 months [10]. However, some groups have reported no difference in postoperative complications for those patients who undergo loop ileostomy closure during or after adjuvant chemotherapy [20, 21]. Furthermore, Hajibandeh et al. [21] added that there is no significant difference specifically in AL, surgical site infection and ileus between EC and delayed closure. The Norwegian STOMAD trial should give us more information and evidence when it is published [22]. Our group perform ileostomy reversal in those patients who are offered chemotherapy, after finishing the treatment. In selected patients, with high risk of kidney failure or other major complications, we perform early closure. In our experience (data not published), patients who undergo ileostomy reversal during the first postoperative month usually have more intraoperative difficulties related to tissue friability. We consider surgery should be delayed about 2 months from the index surgery.

In the present issue, O’Sullivan et al. [23] publish an interesting systematic review and meta-analysis of the current RCT literature comparing early and standard ileostomy closure after rectal surgery. According to the predefined criteria, 6 studies were included for the analysis. Two hundred seventy-five patients with early stoma closure were compared with 259 patients with standard closure. The findings of the study are consistent with previous published results. In addition, a tendency for more postoperative ileus in the early closure group was observed.

Maybe solutions to some of the questions could be at hand soon with an increasing use of total neoadjuvant therapy for rectal cancer that may lead to early reversal, since no adjuvant therapy is administered, or highly selective diversion that may reduce the use of ileostomy. Nevertheless, a lot of patients will continue to need diversion, and further studies will be required to determine the best moment for an effective and safe reversal.

Declarations

Conflict of interest The authors declare that they have no conflict of interest.

Ethical approval This article does not contain any studies with human participants performed by any of the authors.

Informed consent For this type of study, formal consent is not required.

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