Long-term outcomes after appendicectomy as experimental treatment for patients with therapy-refractory ulcerative colitis

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Evidence suggests an immunological function of the appendix in the pathogenic pathway and disease course of ulcerative colitis1,2. Gastroenterologists and surgeons have therefore started to evaluate the therapeutic role of appendicectomy in patients with quiescent and active ulcerative colitis. A prospective study3 assessing (laparoscopic) appendicectomy as a treatment option for biological-refractory ulcerative colitis demonstrated substantial benefit as approximately half (46%) of the patients showed a clinical response and one-quarter showed endoscopic improvement after a median of 3.7 years’ postoperative follow-up. The present study aimed to explore the long-term postoperative disease course of this patient cohort.

This single-centre cohort study included patients with therapy-refractory ulcerative colitis referred for (procto)colectomy at Amsterdam UMC between 2012 and 2015, who underwent laparoscopic appendicectomy. Primary endpoints of this extension study were clinical response (at least 3-point reduction in partial Mayo score), and endoscopic improvement (Endoscopic Mayo score 1 or less) at any point during postoperative follow-up. Time to, duration, and loss of response, de-escalation of medication, and failure (colectomy or medication up-scale) were secondary endpoints. Patients with ulcerative colitis were classified as therapy-refractory if the total Mayo score was 5 or greater and the endoscopic Mayo subscore was 2 or 3, in spite of step-up treatment including biological(s) and/or Janus kinase inhibitors. Preoperative medication was continued after surgery and (de)escalated only after multidisciplinary assessment.

Twenty-five patients, with a median age 41 (i.q.r. 34–48) years underwent appendicectomy; median age at diagnosis of ulcerative colitis was 29 (25–38) years. Twelve patients (48%) had E3 disease at diagnosis; the median interval between diagnosis and appendicectomy was 8 (i.q.r. 4–16) years. Baseline total and partial Mayo scores were 10 (i.q.r. 8–11) and 7 (6–8), and endoscopic Mayo scores were 2 (32%) or 3 (68%). All patients received biological therapy before (19) or at the time of (6) inclusion. Median postoperative follow-up was 8 (i.q.r. 6–9) years. A clinical response was observed in 60% (15 of 25), a median of 4 (3–7) months after appendicectomy, and the clinical response rate at the end of follow-up was 32% (8 of 25). Endoscopic improvement was observed in 48% (12 of 25), and the rate was 24% (6 of 25) at the end of follow-up with none of these requiring colectomy. Clinical response and endoscopic improvement lasted a median of 80 (20–93) and 46 (22–57) months respectively. Twelve of 15 patients (80%) with a clinical response showed endoscopic improvement. Six (24%) patients de-escalated medication during follow-up. Five of six patients with endoscopic improvement at the end of follow-up used mild (aminosalicylates, 3) or no (2) inflammatory bowel disease-related medication. Overall, 17 patients (68%) failed to demonstrate clinical or endoscopic improvement after a median of 9 (4–31) months of follow-up after lack of response (10) or loss of response (7) following appendicectomy. In total, nine patients (36%) underwent colectomy, a median of 5 (2–14) months after appendicectomy. Postoperative outcomes after appendectomy are displayed in Figure 1. None of the patients in the cohort developed colonic dysplasia during postoperative follow-up.

The authors acknowledge the methodological limitations of the present study, with a single-centre, non-(placebo)-controlled design, and limited sample size. Nevertheless, the long-term results presented here add crucial knowledge to inform shared decision-making in the management of refractory ulcerative colitis. Appendicectomy in this cohort appears to be followed by a long-lasting clinical response, endoscopic improvement, and de-escalation of medication for a substantial proportion of patients, as demonstrated here. These results support the introduction of appendicectomy as a safe and cost-effective surgical alternative to medical treatment. A large multicentre RCT (ACCURE)5 is ongoing, with the aim of confirming the efficacy of appendicectomy in maintaining remission in patients with ulcerative colitis.
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Disclosure
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Data availability
The data that support the findings of this study are available from the corresponding author upon reasonable request.

Fig. 1 Individual disease course after appendicectomy
References


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Bill Heald, Lisboa, PRT