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Surgical perspectives

New surgical techniques and strategies for Crohn's disease: Results vs expectations[☆]



Nuevas técnicas y estrategias quirúrgicas para la enfermedad de Crohn: resultados frente a expectativas

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Crohn's disease (CD) is a chronic gastrointestinal disease of unknown aetiology. It affects a young population, with increasing incidence, and usually occurs in outbreaks that most often respond to medical treatment; although 50% will need surgery over the course of their disease. The most frequently affected area at the abdominal level is the terminal ileum. The pathophysiology of CD is not well understood, and neither medical treatment nor surgery cures the disease. In fact, surgery has traditionally been indicated only in cases of complications such as stenosis, fistulisation or malignancy. This is worthy of note, if we consider that – in the earliest days of the description of CD – the role of surgery seemed much more prominent.^{1,2} Recurrence of the disease after surgery is the norm, with 90% endoscopic recurrence at one year, 50% clinical recurrence at 5 years, and the need for further surgery at 5 years reaching 25%.²

In recent years, there has been a resurgence of interest in the possibility that surgery may influence the natural course of the disease. Several major studies have been published in this regard, which have led us to think about a possible paradigm shift in the treatment of CD. The LIR!C showed that early surgery in terminal ileum CD, with an inflammatory phenotype, presented a quality of life at 12 months comparable to that observed with biological treatment in patients with involvement of less than 40 cm of ileum and with no

abscesses. In addition, about a quarter of patients treated with surgery needed treatment with biologics, while nearly one in three of the biologics group needed surgery at a median follow-up of four years. A follow-up analysis of LIR!C has shown that, with a median follow-up of 63.5 months, none of the patients who underwent surgery required further intervention, and 26% required biologics, with surgical treatment being more “cost-effective” than treatment with drugs.³ Real-life data from a global study that analysed more than 200 patients operated on for abdominal CD has shown that those operated on “early” (before developing structural damage, i.e., with mainly inflammatory disease) had better postoperative outcomes, lower complication rates, and reasonable recurrence rates, with a two-fold higher risk of recurrence in patients treated with biologics before surgery.⁴ Similar results have been confirmed in an analysis of more than 2000 patients, also demonstrating that patients operated on for inflammatory CD need less extensive resections, fewer associated procedures, and were operated on more frequently with minimally invasive surgery.⁵ This data showed that the timing of surgery plays a fundamental role in optimising results and reducing disease recurrence.

The study by Coffey et al., published in 2018, introduced another concept in the reduction of surgical recurrence rates: the need in these patients to remove the mesentery, affected

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by CD.⁶ The study showed that wider resection of the mesentery (including creeping fat and thicker mesenteric area) reduced post-surgical recurrence. These results have been criticised for the intrinsic biases of the study, mainly the historical control cohort and the fact that this was undertaken at one single centre. It is also important to note that excision of the mesentery can lead to anal increase in perioperative complications.

At the same time, Professor Kono published his results with a new anastomotic configuration, the Kono-S anastomosis, which included a supporting column that “isolates” the anastomosis from the mesentery (justifying the importance of the “S” in the name of the procedure, which stands for *supporting column* – a concept that is in line with the theory presented by Coffey). A randomised study conducted at a centre in Italy, the SuPREMe-CD study, found a reduction in endoscopic recurrence at 18 months in the Kono-S anastomosis group compared to mechanical laterolateral anastomosis.⁷ In a systematic review published in 2021, the authors suggest that these changes in surgical technique could have a major influence on reducing post-surgical recurrence, and perhaps should be adopted by all surgeons devoted to inflammatory bowel disease.⁸ Several multicentre randomised studies were launched to test these results, and hopes grew that surgeons might play a greater role in the treatment of CD.

However, these studies have not yielded the expected positive results. The REMEDY study, conducted at two reference CD centres in Italy, compared endoscopic, ultrasound, and surgical recurrence in patients with ileocolic CD undergoing surgery with excision of the mesentery (n = 204) versus without excision (n = 122), demonstrating that there was no difference between the groups.⁹ These results suggest that resection of the mesentery should not be performed routinely.

The international randomised SPICY study also found no significant differences between wider resection and standard resection of the mesentery.¹⁰ The French multicentre KoCoRICCO study, published in 2023, found no difference in endoscopic recurrence at 6 months between Kono-S and laterolateral anastomosis.¹¹ And at the ECCO (European Crohn's and Colitis Organisation) 2024 Conference, results of another international randomised study comparing the Kono-S and standard anastomosis were presented. In that study, 288 patients with CD were randomised for treatment with Kono-S (n = 154) versus laterolateral anastomosis (n = 134). Endoscopic and surgical recurrence at 3–6 months were the same between the groups, as well as disease-free duration.¹²

It is important to bear in mind that there are several aspects of heterogeneity and sources of possible bias that must be assessed when interpreting studies on the usefulness of new surgical techniques that attempt to reduce the rate of recurrence in CD. While the mechanical laterolateral anastomosis technique has become fairly standardised, numerous variations of the Kono-S anastomosis are being published, bringing variability to the procedure and complicating the homogeneity of the results. Likewise, the extent of the excision of the mesentery is at the discretion of the surgeon performing the procedure.

The authors of the eighth ECCO Scientific Workshop on recurrence after treatment of ileocecal CD suggest waiting for the results of all ongoing studies on Kono-S anastomosis, and conclude that at the present time the benefits of this anastomosis remain to be proven.¹³ This position seems wise. Therefore, at the present moment, we do not have clear evidence that surgeons can modify recurrence rates just by changing the surgical technique. It is true that the devil is in the details, and knowing the problems that exist makes it clearer for us as to how to interpret the data and talk to our patients.

The duration and timing of surgery, medical treatments, and perioperative optimisation are probably more important than the effect of the technique itself.¹⁴ It is likely that the individualisation of each case, with personalised treatment, is the direction to follow. In the coming years, running long-term follow-up studies, using homogeneous definitions and treatment endpoints, will be key. More than ever, all these decisions must be made in a multidisciplinary team, in close collaboration with gastroenterologists. And, of course, we must use the technique that gives us more confidence, without putting the patient at risk, as well as striving to avoid complications. These basic principles are still valid today; and with the emergence of more consistent results, time will tell whether or not the expectations of new surgical techniques for Crohn's disease could be too high.

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