

Anastomotic Leakage and Chronic Presacral Sinus Formation After Low Anterior Resection

Results From a Large Cross-sectional Study

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Objectives: Little is known about late detected anastomotic leakage after low anterior resection for rectal cancer, and the proportion of leakages that develops into a chronic presacral sinus.

Methods: In this collaborative snapshot research project, data from registered rectal cancer resections in the Dutch Surgical Colorectal Audit in 2011 were extended with additional treatment and long-term outcome data. Independent predictors for anastomotic leakage were determined using a binary logistic model.

Results: A total of 71 out of the potential 94 hospitals participated. From the 2095 registered patients, 998 underwent a low anterior resection, of whom 88.8% received any form of neoadjuvant therapy. Median follow-up was 43 months (interquartile range 35–47). Anastomotic leakage was diagnosed in 13.4% within 30 days, which increased to 20.0% (200/998) beyond 30 days. Nonhealing of the leakage at 12 months was 48%, resulting in an overall proportion of chronic presacral sinus of 9.5%. Independent predictors for anastomotic leakage at any time during follow-up were neoadjuvant therapy (odds ratio 2.85; 95% confidence interval 1.00–8.11) and a distal (≤ 3 cm from the anorectal junction on magnetic resonance imaging) tumor location (odds ratio 1.88; 95% confidence interval 1.02–3.46).

Conclusions: This cross-sectional study of low anterior resection for rectal cancer in the Netherlands in 2011, with almost routine use of neoadjuvant radiotherapy, shows that one third of anastomotic leakages is diagnosed beyond 30 days, and almost half of the leakages eventually do not heal. Chronic presacral sinus is a significant clinical problem that deserves more attention.

Keywords: anastomotic leakage, chronic sinus, low anterior resection, rectal surgery

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Anastomotic leakage after low anterior resection (LAR) is still one of the main contributors to morbidity of rectal cancer treatment, despite numerous attempts to decrease the incidence.^{1–4} Reported incidences of symptomatic anastomotic leakage of colorectal and coloanal anastomoses remain approximately 9% to 15%.^{5,6} Adjustable risk factors for leakage consist of smoking, obesity, neoadjuvant

therapy, and nutritional status. Other risk factors such as male sex, age, American Society of Anesthesiologists (ASA)-classification, and distance of the tumor from the anal verge cannot be influenced.^{7,8}

Although most of the anastomotic leaks are diagnosed within the initial postoperative period, subclinical leaks may only become overt by endoscopy or imaging of the anastomosis in preparation for diverting stoma closure.^{9,10} Late symptoms of leakage might be nonspecific with slow progression, typically in those patients in whom a diverting stoma was closed because of false-negative imaging or endoscopy. Patients with a late leak or even chronic presacral sinus can present up to several years after initial surgery with a variety of symptoms, such as presacral pain, anemia, purulent discharge, fistulae, or even sepsis.^{11,12}

Literature on late anastomotic leak and chronic sinus is scarce.^{9,10,13} The available series are often monocentric and conducted in tertiary referral centers, not providing the overall picture.^{10,12–15} A nationwide, cross-sectional study with long-term surgical outcomes would give more insight into this potentially underexposed complication. Therefore, the aim of this snapshot study was to determine the incidence of late anastomotic leakage and chronic sinus formation after LAR for rectal cancer and its predisposing factors, and to assess long-term related reinterventions.

METHODS

Study Design

A retrospective, resident-led, collaborative research project with a cross-sectional study design was conducted in 71 hospitals in the Netherlands. The methodology of this project has been described earlier in the first publication of the Dutch Snapshot Research Group.¹⁶ Short-term data of all patients in the Netherlands undergoing resection of colorectal cancer are prospectively collected in the Dutch Surgical Colorectal Audit (DSCA), which is obligatory by the Dutch Inspectorate of Healthcare. The DSCA dataset of the year 2011 was extended with additional procedural data and long-term surgical and oncological outcomes. Web-based data collection was performed by surgical residents under the supervision of 1 or 2 consultants during a 5-month period (from May 2015 to October 2015). For present analysis on anastomotic leak, only patients who underwent an LAR with colorectal or coloanal anastomosis were included from the total cohort. The design of the study and the preparation of the manuscript was performed according to the Strengthening the Reporting of Observational Studies in Epidemiology statement.¹⁷

Ethics

The medical ethical committee of the Academic Medical Center in Amsterdam reviewed and approved the observational study design and decided that informed consent was not needed to be obtained as there was not an additional burden for the patient due to the observational design of the study.

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