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Anastomotic Leak in Colorectal Surgery: Current Evidence on Risk, Diagnosis, Preventive measures, and Management

Anastomotic leak (AL) is a feared complication of colorectal surgery, associated with high morbidity, mortality, and adverse oncologic outcomes. Despite advances in perioperative care, its incidence remains significant, and prevention is a central challenge in modern colorectal practice.

This review summarizes the current evidence on AL with a focus on risk factors, diagnostic considerations, and preventive strategies. Patient-related risks include malnutrition, comorbidities, lifestyle factors, and, more recently, alterations in the gut microbiota. Intraoperative contributors involve technical aspects of anastomosis construction, adequacy of vascular perfusion, and procedure complexity, while postoperative risks relate primarily to delayed recognition and insufficient recovery pathways.

Preventive measures span the entire perioperative continuum. Nutritional optimization, risk stratification, and modulation of the microbiota represent key preoperative interventions. Intraoperatively, strategies emphasize meticulous technique, assessment of perfusion with emerging technologies, and selective use of protective measures such as diverting stomas or transanal tubes. Postoperatively, standardized surveillance and adherence to enhanced recovery protocols are critical for early detection and mitigation of complications.

Taken together, the evidence underscores that AL is a multifactorial complication requiring a multimodal prevention strategy. This review provides a structured overview of established knowledge and highlights evolving concepts, with the goal of informing both clinical decision-making and future research.

Biography

Omar Yasin is a healthcare professional based in the United Kingdom and is affiliated with the NHS. He is committed to delivering high-quality patient care and continues to build his clinical experience across diverse medical settings. With a strong interest in advancing his skills and contributing to multidisciplinary healthcare teams, Omar is dedicated to ongoing professional development and evidence-based practice.

He remains actively engaged in learning, training, and clinical responsibilities, working closely with senior clinicians and colleagues to ensure patient-centered, safe, and effective medical care. Omar's professional approach reflects reliability, compassion, and a strong commitment to improving health outcomes within the NHS system.