

# Dilation of Strictures in Patients with Inflammatory Bowel Disease

## Who, When and How



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### KEYWORDS

• Strictures • Anastomoses • Biliary strictures • Dilation • Needle knife

### KEY POINTS

- Strictures—de novo versus anastomotic, locations, inflammatory versus fibrotic—in inflammatory bowel disease (IBD) are discussed.
- The pros and cons of dilation, symptoms, confirmation of inflammation with cross-sectional imaging, and j pouch and anal-pouch strictures are discussed.
- The technical details, size of balloons, use of fluoroscopy of dilation are presented.
- Other adjuncts procedures include steroids, needle knife, and stent.
- About 10% to 15% patients with IBD develop primary sclerosing cholangitis, which results in stricture formation in the biliary tree.

### INTRODUCTION

Patients with Crohn's disease may develop strictures either before surgery or after surgery. We will discuss when and how to dilate strictures in IBD patients. We will discuss endoscopic retrograde cholangiopancreatography (ERCP) in patients with primary sclerosing cholangitis (PSC) and the proper evaluation and management of strictures in this condition.

Transmural inflammation is a hallmark of Crohn's disease, which leads to stricturing of the bowel wall. These strictures may be inflammatory, fibrotic, or, most often, a combination of both. In patients with Crohn's disease, around one-third will develop strictures within 10 years of diagnosis.<sup>1</sup> These strictures occur most commonly at the colon, ileocolonic region, and ileum<sup>2</sup> and are termed de novo strictures. Also, the cumulative risk of surgery for bowel resection within 10 years of diagnosis is

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around 50%.<sup>3</sup> In these patients, recurrence of disease occurs in 44% to 55%, which is often associated with restenosis at the anastomotic site. At times, anastomotic strictures can occur owing to altered blood supply at the level of the anastomosis, and these are usually not associated with active inflammation.

In ulcerative colitis, rates of colectomy in more recent cohorts in the era of biologics is around 10% to 16.6%.<sup>4–7</sup> Among these patients, anastomotic strictures can form at the pouch–anal anastomosis and rarely at the pouch–inlet anastomosis. In about 5% to 10% of colitis, indeterminate colitis is diagnosed. Both classic ulcerative colitis patients and indeterminate colitis patients can progress to Crohn’s disease of the ileal–pouch–anal anastomosis, often manifesting with strictures in the pouch and prepouch ileum.

Strictures in IBD occur as a result of scarring and fibrosis in the setting of chronic inflammation in the bowel wall. As a result, most strictures demonstrate a combination of fibrosis and active inflammation. Endoscopically, active ongoing inflammation is manifest as ulcerations and edema at the narrowed site. Radiographically, too, active inflammation can be demonstrated in a strictured segment both on computed tomography enterography and MR enterography. In a lesser number of situations, the stricture is almost completely fibrotic without any evidence of active inflammation. The presence of active inflammation endoscopically is an important factor in dilation of these strictures because it can limit the extent of dilation that is performed. Actively inflamed bowel wall is more friable and more likely to result in a complication of perforation.

Strictures in IBD patients have diverse manifestations. When they affect the gastric outlet or duodenum, patients can present with symptoms of gastric outlet obstruction including nausea, vomiting, and an inability to eat. When they affect the small bowel, patients usually present with intermittent partial small bowel obstruction symptoms including abdominal pain, abdominal distention, obstipation, and vomiting. At times, the symptoms may be more subtle, with just postprandial abdominal cramping, especially a few hours after intake of high residue foods. Colonic strictures are the most well-tolerated, and hence often present very late. Patients complain of change in the caliber or stool, and at times increasing constipation. When the stricture is at the pouch–anal anastomosis, tenesmus, and a feeling of incomplete evacuation are common symptoms. Also, excessive straining and urgency with watery stool can occur in this scenario.

Imaging of the strictures is very important before attempting endoscopic therapy. This is both to delineate the location, extent, and possibly diameter of the stricture, and also to document the presence and extent of concurrent inflammation. Ideal imaging is cross-sectional in the form of a computed tomography enterography or MR enterography.<sup>8</sup> Both of these techniques are able to provide a fairly precise location of the stricture, and an assessment of degree of inflammation. Small bowel series have been used in the past, but cannot provide any information on inflammation within the bowel wall. Barium enemas can be useful in colonic and pouch strictures because the sensitivity of computed tomography and MR is lower. They can outline the length and location of strictures well, and should be considered before therapy if this information is unknown. Imaging, both cross-sectional and contrast radiography, can also help to identify other complications of IBD including fistulae, abscesses, or sinus tracts, which can occur in conjunction with stricturing disease.

### ***When to Dilate***

Strictures in IBD should be treated if they are symptomatic, as described. If active inflammation is present, medical therapy should be optimized first. In the case of

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