

Application of Different Anastomotic Methods for a Patient with Crohn's Disease : Long-term Endoscopic Appearances of Hand-sewn Versus Biofragmentable Anastomosis Ring Method

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ABSTRACT. After resection for ileocecal or ileocolonic Crohn's disease (CD), anastomotic recurrence is common, and roughly one half of the cases who undergo hand-sewn anastomoses require further surgery for suture line recurrence. The other anastomoses methods, stapled anastomoses, had been compared with that of patients having hand-sewn anastomoses. But the type of anastomosis, whether stapled or hand-sewn, did not affect the rates of symptomatic or operative recurrence. A compression anastomosis device consisting of a biofragmentable anastomosis ring (VALTRAC®) is used with new anastomosis methods, and no fragments remain in the anastomosis unlike with other anastomotic materials. There have been few reports regarding the employment of VALTRAC® methods for anastomoses of patients with CD. We reported a 30-year-old male with a 14-year history of CD. In 1991, he was referred to our hospital for surgery because of stenoses of the ileum and terminal ileum, and underwent ileocecal resection. Ileocolic anastomosis was performed with a hand-sewn method. In 1996, the patient was referred to our hospital again for surgery because of an ileoileal fistula and multiple stenoses in the ileum and the anastomosis. Resection of the previous anastomosis was performed. Next, ileocolic anastomosis was performed using a VALTRAC® method. Comparisons of the long-term appearance of two different anastomoses (one hand-sewn and the other done by VALTRAC® methods) of the same portion of the intestine in the patient were reported herein.

Key words : Crohn's disease — Biofragmentable anastomosis ring —
Anastomosis — Endoscopic appearance

Perianastomotic recurrence after resection in Crohn's disease (CD) may be related to anastomotic materials. Comparisons of the long-term appearance of two different anastomoses of the same portion of the intestine in a patient with CD were reported herein.

CASE REPORT

The patient was a 30-year-old male with a 14-year history of CD, who

initially presented in 1987 with diarrhea and abdominal pain and was treated with salazosulfapyridine. In January 1991, he was referred to our hospital for surgery because of stenoses of the ileum and terminal ileum. Strictureplasty for five portions of the ileum and ileocecal resection were performed. Ileocolic anastomosis was performed in an end-to-end configuration with a hand-sewn two-layer method in which interrupted 4-0 silk Lembert sutures were used for the outer layer and a continuous 4-0 polyglycolic acid suture was employed for the inner layer. After the operation, the patient was treated with a daily dose of 4000 mg of salazosulfapyridine and 5 mg of prednisolone. In April 1995, 51 months after the initial operation, colonoscopy revealed an almost circular and deep ulcer on the suture line and severe stenosis (Fig 1). In December 1996, the patient was referred to our hospital again for surgery because of an ileoileal fistula and multiple stenoses in the ileum and the anastomosis. Resection of 70 cm of the small-bowel containing the previous anastomosis was performed. Next, ileocolic anastomosis was performed by the same operator in an end-to-end configuration using a new compression anastomosis device consisting of a biofragmentable anastomosis ring (VALTRAC®). The patient was treated with a daily dose of 1500 mg of salazosulfapyridine for one year after the operation, and 3000 mg of mesalazine for subsequent several years. In October 2001, 58 months after the last operation, colonoscopy revealed a clear anastomosis comparatively without stenosis, although small aphthous ulcers were recognized on the suture line (Fig 2). Since then his bowel condition has been stable and he has required no

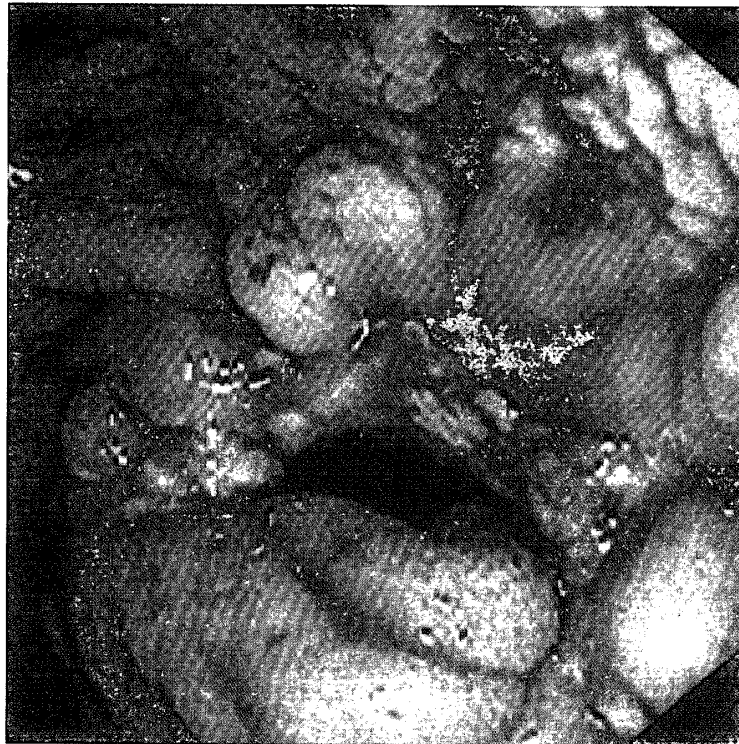


Fig 1. Endoscopic view after spraying with indigo carmine dye, 51 months after anastomosis with hand-sewn methods, showing stenosis with a deep and almost circular ulceration on the suture line and the nodular thickening of folds.

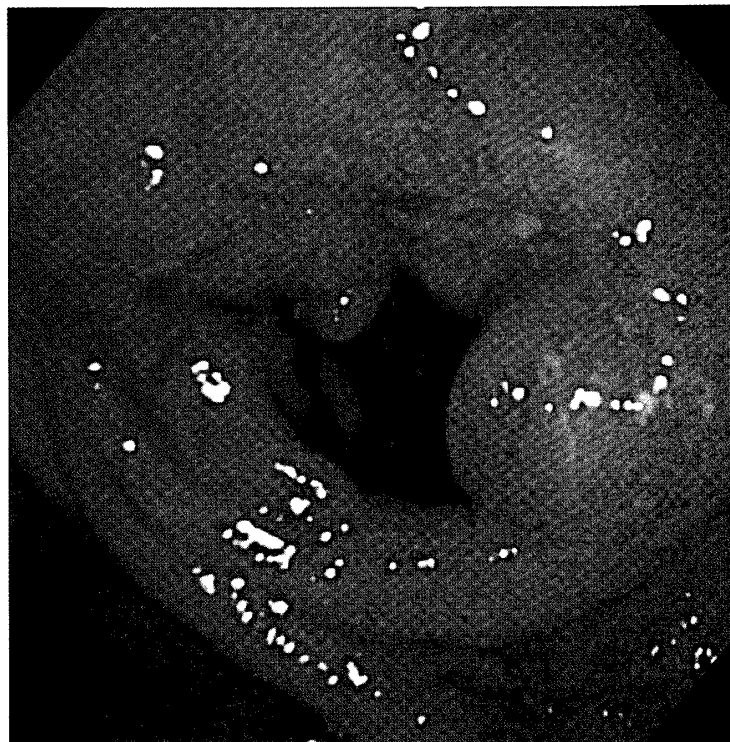


Fig 2. Endoscopic view after spraying with indigo carmine dye, 58 months after anastomosis with VALTRAC[®], showing a clear anastomosis comparatively.

further surgery.

DISCUSSION

There have been few reports regarding the employment of VALTRAC[®](1-5) methods for anastomoses of patients with CD. This comparison of the long-term appearance of two different anastomoses (one hand-sewn and the other done by the VALTRAC[®] methods) of the same portion of the intestine in a patient with CD is the first such report.

After resection for ileocecal or ileocolonic CD, anastomotic recurrence is common, and roughly one half of the cases who undergo hand-sewn anastomoses require further surgery for suture line recurrence.⁶⁾ Recurrence in patients who have undergone sutured anastomoses almost always develops in the first year after the operation. The anastomosis is frequently stenosed and rigid, with large ulcers extending from the stenosis into the colon.⁶⁾ The other anastomoses methods, stapled anastomoses, have been compared with that of patients having hand-sewn anastomoses.^{7,8)} But the type of anastomosis, whether stapled or hand-sewn, did not affect the rates of symptomatic or operative recurrence.⁸⁾ Review of the literature indicated the employment of VALTRAC[®] methods for anastomoses of patients with CD to be a rare event, with only sporadic case reports.²⁾

From April 1995 to August 2001, 31 patients underwent intestinal resection for Crohn's disease 44 times at our institution. Among them, five patients including the present case underwent end-to-end anastomoses using the VALTRAC[®], three ileo-ileo and two ileo-colic anastomoses. These

were not associated with complications, and only one case required further surgery, although the duration of follow-up was short (median, 41 months). The fragmented VALTRAC[®] were discharged as feces entirely about 21 days post-operatively and no fragments remained in the anastomosis unlike with other anastomotic materials; that is, string with hand-sewn methods and metal with stapled methods.⁸⁾ Therefore, the VALTRAC[®] method might be suitable for anastomoses of inflammatory bowel disease like CD.

REFERENCES

- 1) Thiede A, Geiger D, Dietz UA, Debus ES, Engemann R, Lexer GC, Lunstedt B, Mokros W: Overview on compression anastomoses: biofragmentable anastomosis ring multicenter prospective trial of 1666 anastomoses. *World J Surg* **22**: 78-86, 1998
- 2) Pahlman L, Ejerblad S, Graf W, Kader F, Kressner U, Lindmark G, Raab Y: Randomized trial of a biofragmentable bowel anastomosis ring in high-risk colonic resection. *Br J Surg* **84**: 1291-1294, 1997
- 3) Yamamoto T, Allan RN, Keighley MR: Strategy for surgical management of ileocolonic anastomotic recurrence in Crohn's disease. *World J Surg* **23**: 1055-1060, 1999
- 4) Cossu ML, Coppola M, Fais E, Ruggiu M, Sparta C, Profili S, Bifulco V, Meloni GB, Noya G: The use of the Valtrac ring in the upper and lower gastrointestinal tract, for single, double, and triple anastomoses: a report of 50 cases. *Am Surg* **66**: 759-762, 2000
- 5) Konishi F, Saito Y, Ugajin H, Okada M, Kashiwagi H, Sato T, Kanazawa K: Sutureless anastomosis using a biofragmentable anastomosis ring. *Surg Today* **25**: 783-789, 1995
- 6) Rutgeerts P, Geboes K, Vantrappen G, Kerremans R, Coenegrachts JL, Coremans G: Natural history of recurrent Crohn's disease at the ileocolonic anastomosis after curative surgery. *Gut* **25**: 665-672, 1984
- 7) Munoz-Juarez M, Yamamoto T, Wolff BG, Keighley MR: Wide-lumen stapled anastomosis vs. conventional end-to-end anastomosis in the treatment of Crohn's disease. *Dis Colon Rectum* **44**: 20-25, 2001
- 8) Moskovitz D, McLeod RS, Greenberg GR, Cohen Z: Operative and environmental risk factors for recurrence of Crohn's disease. *Int J Colorectal Dis* **14**: 224-226, 1999