Symptomatic ileocolic fistula as a complication of endoscopic laser therapy A case report

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Abstract

Since 1973, laser photo therapy is used in the treatment of gastrointestinal neoplasms as well as in various forms of intestinal hemorrhage. Complications including hemorrhage, stenosis and perforation are well documented but ileocolic fistulas after laser therapy for a villous adenoma have been rarely reported. We report the case of a patient with diarrhea related to an ileocecal fistula. This fistula appeared 1 year after laser therapy for a villous tumor of the cecum. (Acta gastroenterol. belg., **2002**, 65, **176-178**).

Key words : laser therapy, diarrhea and ileocolic fistula.

Introduction

Since its first application in gastroenterology in 1973 (1), the Nd-Yag laser has been widely used in patients with small sessile colonic polyps (2), villous tumors (3), benign or malign stenosis of the gastrointestinal tract (4) and arteriovenous malformations (5). Medical application of the laser is based on the ability to transfer light energy into heat within the tissue. The Nd – Yag laser can penetrate tissue, coagulate and destroy bulky tumors, and stop bleeding. It has a low tissue absorption, a high coagulation effect and a low cutting effect. The depth of thermal damage is 3 mm in most tissues and it can coagulate vessels up to 3 mm in diameter (6). Hemorrhages, stenosis, perforations and fistulas without fatal consequences were reported as rare complications of endoscopic laser for villous adenomas. The complication rate ranges from 0 to 12% according to the lesion's size. Fistulas related to laser therapy have been reported in only 4 cases in large clinical series (7,11-19). We report the case of a woman with a symptomatic ileocolic fistula which had occured after two sessions of cecal laser therapy. To our knowledge, symptomatic ileocolic fistula after cecal laser therapy has never been reported.

Case report

A 78-year-old woman was admitted in our hospital because of diarrhea and weight loss. The patient underwent a total colonoscopy in September 96 after an episode of diverticulitis. A cecal plane villous tumor (1.5 cm^2) without dysplasia was discovered, not justifying extreme surgery because of its small size. It was destroyed without complication after one session of Nd-yag laser. A second colonoscopy performed nine months later showed no recurrence of the cecal villous tumor, without any sign of covered perforation nor nonhealing laser ulcer.

Two years later, a control colonoscopy demonstrated a relapse of the cecal villous tumor (1 cm^2), without dysplasia, treated with a second session of Nd-yag laser. Histologically, the colic collagen layer appeared to be thickened. Suspecting a microscopic colitis according to the thickening of the collagen layer, the patient was treated with 5 aminosalicylic acid (3 gr a day). From December 98 to August 99, the patient noted dayly and nigthly diarrhea with a weight loss of 14 kg. She did not feel abdominal pain, fever or blood loss in the stools. She was admitted in our hospital in August 99. Clinical examination was normal. Laboratory blood tests were normal, except for a mild hypokaliema (3.0 meq/l). A colonoscopy demonstrated just near the ileocolic valvule a large hole where the villous tumor had been treated with laser (fig. 1). The ileal and colic histological examination was normal, without residual villous tissue.

Barium small bowel study confirmed the fistula between proximal small bowel and cecum, without tumoral component (fig. 2). No stenosis was seen in the rest of the small bowel.

Because of major malabsorption , a surgical treatment was decided. A laparotomy was performed on September 99 and confirmed a non-inflammatory fistula between the small bowel and cecum. The fistula was resected with closure of the ileal and colic walls. The histological examination showed a scarring fibrosis without inflammatory or tumoral tissue. After surgical resection, diarrhea disappeared and progressively body weight increased.

Discussion

Endoscopic laser therapy is often used for palliative treatment of obstructive colorectal tumors or for benign strictures due to fibrotic reaction. Benign lesions of the colon, such as villous tumors are also treated with photocoagulation.

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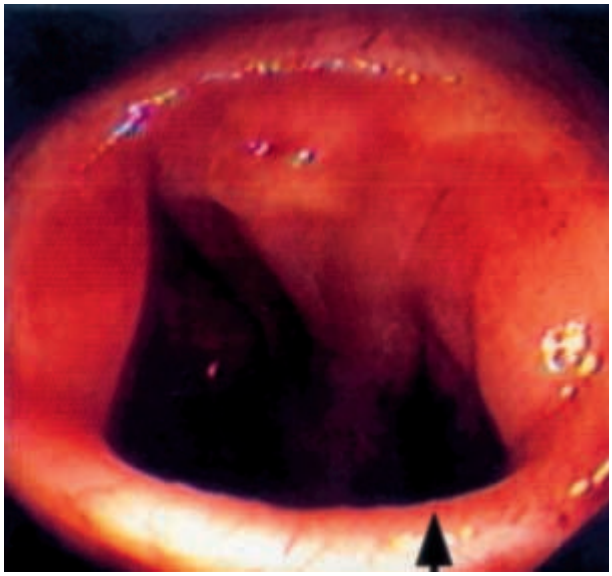

Fig. 1. — Endoscopic view : large hole in the cecal wall related to an ileocolic fistula (white arrow).

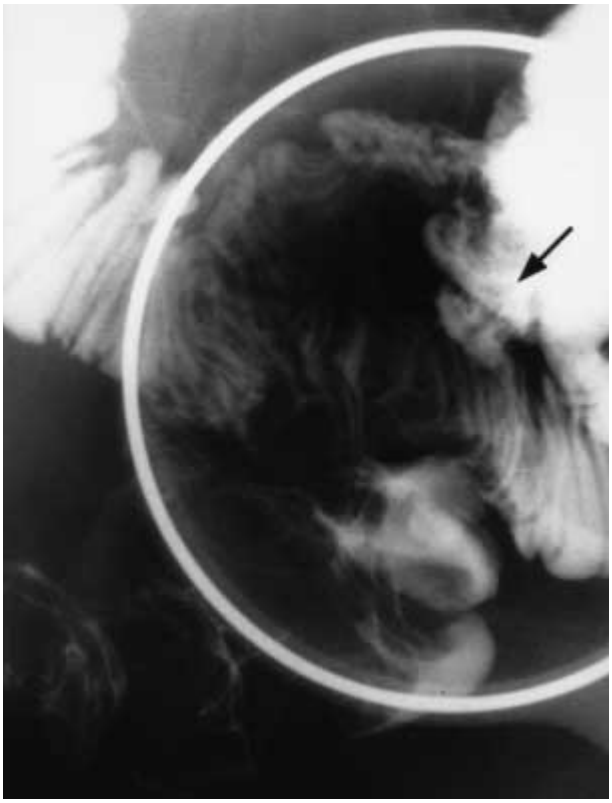

Fig. 2. — Barium small bowel study : fistula between proximal small intestine and cecum (white arrow).

Major complications of the laser therapy include bleeding, symptomatic stenosis, perforation and fistula. The complication rate ranges from 4.5% to 11.6% in case of large adenomas (more than 4 cm) (2,7), 9.1 to 12. 5% with intermediate adenomas (between 1 and 4 cm) and 0% with small adenomas (less than 1 cm) (2,7). Minor complications occured in 30.9% with extensive lesions, in 27.3% with intermediate lesions and in 10.6% with small lesions, including transient asymptomatic stenosis, minor posttreatment hemorrhage, pain and serositis (2). Crohn's disease is the major cause of ileocolic fistula but lower gastrointestinal fistulas can also result from diverticulitis, complication of colic surgery, adenocarcinoma of the colon or abdominal radiotherapy. Perforations and fistulas are rare complications of endoscopic laser therapy. Perforation due to a transmural necrosis into the peritoneal space occurs in 3.9% of patients treated with laser therapy for extensive adenomas (2). Fistula is the result of a transmural necrosis creating an abnormal communication between two organs. In a survey concerning endoscopic laser therapy for palliation of patients with distal colorectal carcinoma, fistulas occured in 3.2% of cases (8). Only 4 cases of fistula have been reported in large clinical series (2,3,11-18) concerning laser for an intermediate adenoma : an asymptomatic ileocolic fistula (7), a rectal fistula near a colorectal anastomosis (7), a rectovaginal fistula appearing 2 months after laser therapy for a small residual rectal polyp (1 cm) following low anterior resection of a rectal carcinoma (18) and an asymptomatic rectovaginal fistula after treatment of an anterior rectal villous adenoma (19).

Target motion, caused by peristaltism, respiration, cardiac action or insufflation of air increases the risk of complications when firing with the laser beam. Occurence of complications are also related to the experience of the operator, to the location of the tumor (risk of perforation is higher above the rectosigmoid, especially in the cecum because of the reduced thickness of the bowel wall) and to the size of the lesion (10). Large and intermediate lesions require prolonged treatment with a major recurrence rate given in percentage of recurrence detected during the average follow-up period (13% during a 25.9 mo follow-up) (3) increasing the rate of complications. In our patient, the fistula was probably secondary to two sessions of laser therapy, the first promoting an adherence between the small bowel and the cecum, the second creating the fistula by burning the colic wall. The number of laser sessions was mentionned in only two of the reported cases of fistula, respectively after 9 and 7 sessions (7). Total energy level, interval between two sessions of laser and duration of the treatment do not seem to be correlated with the rate of complications (10).

Conventional surgery with ileocolic resection is the treatment of choice for symptomatic ileocolic fistulas. Nevertheless, laparoscopic surgery is feasible in patients with simple lower gastrointestinal fistulas. The morbidity rate of 10% and duration of hospitalisation of 6 days are similar to the two procedures. However, the high conversion rate (30%) attests the challenging nature of these conditions (11).

Summary

Laser photocoagulation is safe and effective in the ablation of small colorectal adenoma. The appearance of weight loss and diarrhea after laser therapy, especially in the right colon, should lead to the search of an ileocolic fistula, a rare complication of this procedure. In case of symptomatic fistula, ileocolic resection by conventionnal laparotomy seems to be the treatment of choice.

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