Flat Adenoma and Flat Mucosal Carcinoma (IIb Type)—
A New Precursor of Colorectal Carcinoma?
Report of Two Cases

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Two flat adenomas and a flat mucosal carcinoma of the colon were reported in patients with synchronous and metachronous colonic carcinomas. These lesions were almost flat and were not detected by preoperative endoscopic examinations. Colonoscopists should be aware of the presence of flat adenomas, which can be easily missed, and recognize them as lesions that play an important role in the "adenoma-carcinoma sequence." [Key words: Flat carcinoma; Flat adenoma; Morphogenesis of colorectal cancer; Adenoma-carcinoma sequence; de novo carcinoma]

IT IS WIDELY accepted that adenoma is the most likely precursor of colorectal carcinoma; the concept is known as the "adenoma-carcinoma sequence."1-6 Some argue, however, that almost all colorectal carcinomas arise directly from the normal flat mucosa, termed de novo.7-9 These concepts are still controversial and need further study, although the recently reported "flat adenoma" seems to play an important role as a precursor of colorectal carcinoma.10-12 Two flat adenomas and a flat mucosal carcinoma were encountered in patients with synchronous and metachronous carcinomas during routine examination of resected specimens of colorectal carcinoma. This report presents flat adenoma as a new origin of colorectal carcinoma, and emphasizes the importance of detecting flat lesions in routine examinations.

Report of Cases

Patient 1: A 50-year-old man was admitted to Tokyo University Hospital on July 31, 1980 because of rectal bleeding and constipation. Barium-enema examination revealed an advanced rectal carcinoma and a polyp of the sigmoid colon. No other lesions were detected in the proximal colon. He underwent low anterior resection on August 14. In November 1982 he was readmitted with an early gastric carcinoma and underwent subtotal gastrectomy. Preoperative colonoscopic examination failed due to poor preparation, but no recurrent rectal carcinoma or newly developed colorectal neoplasms were found at surgery. In May 1984, no abnormality was detected in the remaining colon at surveillance total colonoscopy. In June 1985, a large protuberant lesion and two low-elevated lesions were detected in the right colon by surveillance colonoscopy. He was readmitted and right hemicolectomy was performed on July 20. Macroscopic examination revealed three sessile lesions and a flat lesion that was undetected at the preoperative examination. The flat lesion was located at the hepatic flexure and measured 1.8 × 1.3 cm (Fig. 1). It appeared almost flat with slightly elevated margins and was slightly reddish. Grossly it resembled an IIb type of early gastric carcinoma.13 Histologically, except for minute foci of adenoma with moderate atypia, almost the whole lesion showed mucosal carcinoma (Fig. 2). Histology of the other three lesions showed advanced carcinoma with subserosal invasion and two early carcinomas with submucosal invasion (Fig. 3). These three lesions also had small foci of adenoma with mild to moderate atypia.

Patient 2: A 64-year-old man was admitted to Toranomon Hospital in June 1978. He underwent right hemicolectomy for two advanced carcinomas of the cecum and ascending colon. Anticancer chemotherapy was administered until he was readmitted with acute cholecystitis in December 1981. In April 1985, he noticed bloody stools and returned
FIG. 1A. Resected specimen of Patient 1. Flat mucosal carcinoma (lesion A) and three sessile invasive carcinoma (lesions B, C, D) are shown. Lesion B is separated.

to the hospital. Barium-enema examination revealed a stricturing lesion of the descending colon, which was confirmed by colonoscopy as a localized ulcerating growth. A sessile polyp was also detected in the distal colon. Proximal colon was not examined due to the stricture. Left hemicolectomy and ileorectal anastomosis was performed on May 14. Macroscopically, two other flat lesions also were detected proximal to the advanced carcinoma. One of these two lesions was completely flat, resembling IIb type of early gastric cancer, and appeared as a localized reddish mucosa measuring 1.2 X 1.0 cm (Fig. 4). Histologically, this lesion showed tubular adenoma with mild to moderate atypia (Fig. 5). Another lesion was slightly elevated with small central depression, measuring 0.4 cm in diameter. Histology showed tubular adenoma with mild atypia (Fig. 6). The sessile polyp detected preoperatively measured 0.9 cm in diameter and showed tubular adenoma with moderate atypia.

Discussion

The issue of whether colorectal carcinoma arises from adenomas or de novo is still controversial, although the fact is widely accepted that the majority of colorectal carcinomas originate from adenomas. The concept is based on the following morphologic and epidemiologic data:

1. The majority of mucosal carcinomas are found in adenomas. In a series of 2305 carcinomas, the frequency with which adenomas were found in continuity was 10.7 percent and varied inversely as to the depth of carcinomatous invasion. The frequency was 56.6 percent with carcinoma limited to the submucosa and only 7.6 percent with invasion through the bowel wall. 2

2. In about one third of operative specimens containing carcinoma, one or more adenomas are present. About 7 percent of this group of patients later develop metachronous carcinoma, which is twice the rate in the group of patients without associated adenomas. 14 Patients who have adenomas with severe atypia (mucosal carcinoma) are at a significantly higher risk of developing metachronous carcinoma than those without adenomas. Coexisting adenomas can be found in 75 percent of patients with more than two carcinomas. 15

3. Patients with familial adenomatosis coli are well known to be at high risk for developing carcinoma. 2

The morphogenesis of colorectal carcinoma is still unclear. Recently, from observations of 155 early carcinomas, Muto et al. 16 reported that 85 percent of invasive carcinomas and 70 percent of overall early carcinomas had a short stalk or broad base, and proposed that adenomas under 2 cm in diameter with a short stalk or broad

FIG. 1B. Note an almost completely flat (IIb type) mucosal carcinoma (lesion A). Only a slight color change is noted.