

Flat Depressed Early Colon Cancer

- A Case Report -

A flat depressed early colon cancer (FDEC) is characterized by non-polypoid growth pattern, no association of adenomatous tissues and a tendency of even small lesions toward submucosal invasion and lymph node metastasis. It supports *de novo* carcinogenesis of colorectal cancer, although most colorectal cancers arise in pre-existing adenoma (adenoma-carcinoma sequence). There have been few reports of small depressed cancers because of the difficulty in colonoscopic detection and the rapid development to ulcerating advanced cancers. We report a case of flat depressed early colon cancer confined to mucosa detected by indigo carmine contrast colonoscopy. (JKMS 1997; 12: 465~8)

Key Words : Colonic neoplasms, Early colon cancer

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INTRODUCTION

The theory of an adenoma-carcinoma sequence in which colorectal cancers arise in adenomatous polyps has been supported by many studies in which clinical, morphological and histopathological analyses have been used (1). On the other hand, identification of small and superficial invasive cancer without an adenomatous component has led to the concept of "*de novo*" development of colorectal cancers. Flat depressed colorectal cancer is relatively rare because of the difficulty in detection and its rapid growth and submucosal invasion (2).

We present a case of a 0.9 cm sized flat depressed early colon cancer which was detected by indigo carmine contrast colonoscopy.

CASE REPORT

A 50-yr-old man was admitted with a 4-month history of abdominal discomfort. He had a history of renal transplantation due to end stage renal disease with chronic glomerulonephritis 4 years previously. His renal function has maintained well with serum creatinine, 1.9 mg/dl. He had a history of colonic adenomatous polyps on the sigmoid colon which were removed by endoscopic polypectomy two years previously. There was no family history of colorectal cancer. He had no changes in bowel habits. Previous barium contrast study of the colon revealed no evidence of masses.

Physical examination was normal except for the pal-

pable transplanted kidney in the right lower abdominal area. The complete blood count was normal and stool occult blood was positive. A colonoscopy was done and disclosed several tiny adenomatous polyps on the ascending colon and ill-defined glistening mucosa with mild blunting of innominate grooves on the hepatic flexure. Indigo carmine contrast spray showed a flat depressed lesion with distinct margin and a central color change. There was no marginal elevation (Fig. 1,2). Histopatho-



Fig. 1. Colonoscopic finding shows ill defined glistening mucosa with mild blunting of the innominate groove on the hepatic flexure.

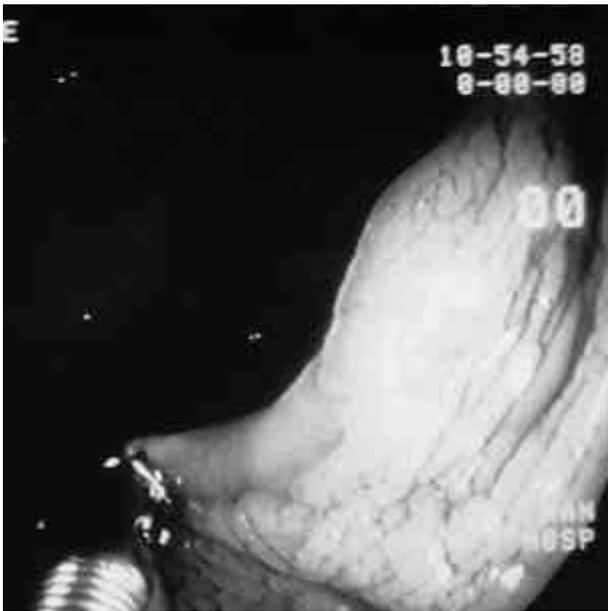


Fig. 2. Colonoscopic finding shows a flat (superficial) depressed lesion without marginal elevation (type IIc).

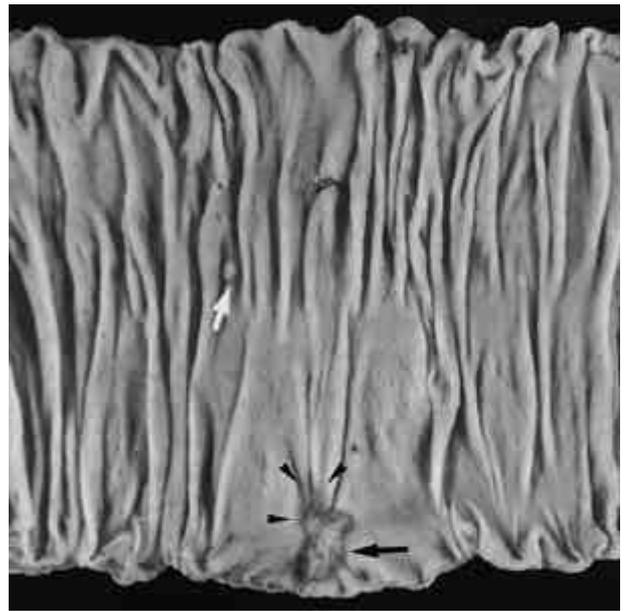


Fig. 3. A depressed mucosal lesion (type IIc) (arrow head) on the peripheral portion of the mucosal defect (black arrow) due to previous endoscopic mucosal resection in the colon. There was a tiny adenomatous polyp (white arrow).

logic examination of the specimen removed by endoscopic biopsy showed well differentiated adenocarcinoma. There was no abnormal lymphadenopathy around the hepatic flexure by abdominal CT scan. Endoscopic mucosal resection was tried on the previously detected tumor site that could not easily be found and the tumor tissue was not detected on the mucosal resection specimen. So, a right hemicolectomy was performed. There was a 0.9 cm

sized shallow depressed lesion without marginal elevation in the hepatic flexure (Fig. 3). Microscopically, the depressed lesion was a moderately well differentiated adenocarcinoma confined to the mucosal layer admixed with high grade dysplastic glands. The mucosa of the lesion site was thinner than the adjacent normal mucosa. No evidence of pre-existing adenomatous tissue was present (Fig. 4). No lymph node metastasis was found.

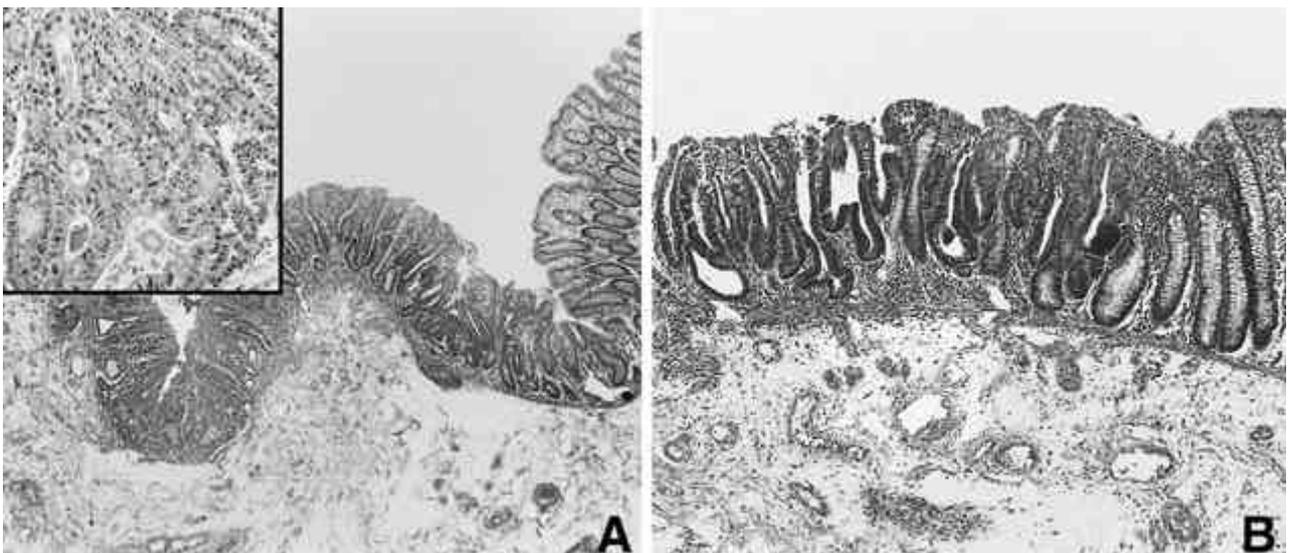


Fig. 4. Mucosal adenocarcinoma of the colon with an area of high grade dysplasia (A). Moderately differentiated adenocarcinoma composed of complex tubular structure (insert). Mucosal depression is evident compared with adjacent normal mucosa (B).

DISCUSSION

Recently, flat depressed early colon cancer (FDEC) has increasingly been reported in Japan, although its incidence is very low in western countries. The relatively few reports of FDEC may be due in part to the difficulty in colonoscopic detection and to the rapid development to ulcerating advanced cancer. It is characterized by a non-polypoid growth pattern, no association of adenomatous tissues and a tendency of even small lesions toward submucosal invasion and lymph node metastasis (2, 3).

In the description of the endoscopic and gross appearance of FDEC, the term superficial type is synonymous with a non-polypoid, flat or depressed type. The FDEC is recognized as a small, plaquelike lesion with vague redness or discoloration and is often delineated more clearly by endoscopy after spraying with methylene blue or indigo carmine (4). Sometimes, tiny changes such as marginal irregularity, well-defined depression, star-shaped depression, air-induced deformation under altered air volume and absence of innominate groove after dye spray are helpful to detect the lesion (5). Spraying indigo carmine for contrast facilitates identification as a depressed lesion with distinct margin. This case showed an ill defined depression and absence of innominate groove after dye spray. The site distribution of superficial type tumors is a little more to the right than that of adenomatous polyps and is similar to that of advanced carcinoma. This trend could be related to the fact that endoscopic examination is easier in the ascending and transverse colon than in the rectosigmoid region. Kudo has suggested that magnifying endoscopic examination combined with dye spray method might be clinically useful for differential diagnosis of superficial type colorectal cancer according to pit pattern (6).

Flat (superficial) cancer is classified by its morphology into four types; an elevated type with or without depression, a flush type and a depressed type. The depressed type is very rare (4). Depressed lesion is subclassified as depressed (IIc) or depressed with elevated margin (IIc +IIa). The depressed type colon cancer can be easily changed to elevated type lesion with depression (IIa +IIc). Consequently, the lesion can progress to Borrmann type 2 or 3 advanced cancer (5).

The theory of an adenoma-carcinoma sequence has been supported by many clinical and histopathologic studies. On the other hand, identification of small and superficial invasive cancer without an adenomatous component has led to the concept of "de novo" development of colorectal cancers (7). This type of carcinoma may not follow the adenoma-carcinoma pathway of histogenesis. Even though *de novo* carcinogenesis is a possible hypo-

thetical pathway, it can not be simply proven by a superficial growth pattern, small size and absence of residual adenomatous tissue because these tumors were found only at one point of their developmental process. The small invasive cancers without an adenomatous component may arise from small flat adenomas, which are rapidly replaced by cancerous glands (8). The rate of high grade epithelial dysplasia in flat adenoma less than 10 mm in diameter is 10 times higher than that of polypoid adenoma (9). Although the DNA hybridization analysis has showed progressive accumulation of genetic abnormalities in colonic neoplasms, there were no differences in genetic abnormalities between polypoid cancer and non-polypoid cancer (10). In our case, high grade dysplasia contiguous to carcinomatous tissue was found without an adenomatous component. Although some cases of flat adenoma have been associated with family history, there was no positive family history in our patient.

The relatively small number of reports of small depressed cancers may be due in part to the difficulty in colonoscopic detection because type IIc lesions are often so small and indistinct in color that they can not be detected easily and are likely to invade the submucosal layer at an early stage, becoming advanced cancers at the time of detection. Meticulous colonoscopic examination is required for detecting flat type early colon cancer.

We report a rare case of flat depressed early colon cancer confined to the mucosal layer which was detected by indigo carmine contrast colonoscopy and treated with right hemicolectomy.

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