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Cronkhite-Canada Syndrome Associated with Colon Cancer: Report of a Case

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Abstract: A 68-year-old man with the clinical features of Cronkhite-Canada syndrome developed cancer of the ascending colon. Although Cronkhite-Canada syndrome has always been considered a benign condition, it may be a premalignant disorder, as suggested by the clinical course of the patient whose case is described herein.

Key Words: Cronkhite-Canada syndrome, colonic cancer

Introduction

In 1955, Cronkhite and Canada[1] reported two cases which presented with such ectodermal changes as alopecia, nail atrophy, and hyperpigmentation of the mucosa and skin, as well as gastrointestinal adenomatous polyposis. Since this first description, a number of similar cases have been reported. Although Cronkhite-Canada syndrome is generally accepted as a benign disorder, we report herein a case of this syndrome in which carcinoma of the colon was found with multiple colonic polyps.

Case Report

A 68-year-old male was admitted to our hospital with a 3-month history of watery diarrhea, scalp hair loss, and hyperpigmentation. The patient had noted changes of his finger- and toenails several months before the onset of diarrhea, and his family history was unremarkable for bowel disease. On examination, the patient was wasted, with a marked loss of scalp hair (Fig. 1), and pigmentation of the extremities. Marked onychodystrophy of the finger- and toenails was observed (Fig. 2). Laboratory tests showed hypoproteinemia and occult blood in the stools. Total protein was 5.7 g/dl, and albumin was 3.3 g/dl. Serum electrolytes, blood urea nitrogen (BUN), creatinine, liver enzymes, and a chest x-ray were all normal. The carcinoembryonic antigen (CEA) was 5.7 ng/ml, the normal being 5.0 ng/ml.

Radiologic examination showed extensive polyposis in the stomach, and barium enema showed diffuse colonic polyposis and a protruded lesion in the ascending colon (Figs. 3, 4). The polyposis was easily seen during gastroscopy and colonoscopy. One of the gastric polyps was removed and histologically defined as an inflammatory hyperplastic polyp-comprising numerous plasma cells, neutrophilia granulocytes, and some glands which were dilated and contained mucus (Fig. 5). Colonoscopy showed a dense growth of small polyps in the entire colon, which on biopsy were composed of columnar epithelial cells showing marked infiltration by acute and chronic inflammatory cells (Figs. 6, 7). Histological findings of the biopsied specimens from the ascending colon lesion revealed adenocarcinoma.

The patient underwent a right hemicolectomy with ileocolostomy. The surgical specimen revealed Dukes B mucus-secreting adenocarcinoma of the ascending colon and multiple polyps of varying size (Figs. 8, 9). The polyps were predominantly of the juvenile type, but some were regarded as inflammatory pseudopolyps with a transition adenomatous proliferation (Fig. 10). The postoperative course was uneventful and the patient is now alive without recurrence 2 years after his operation.

Discussion

In 1955, Cronkhite and Canada[1] reported two interesting and unusual patients with non-familial gastrointestinal polyposis associated with hyperpigmentation

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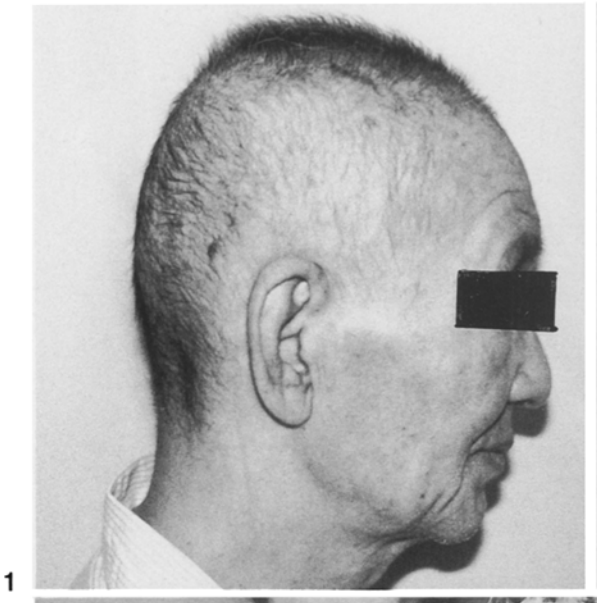

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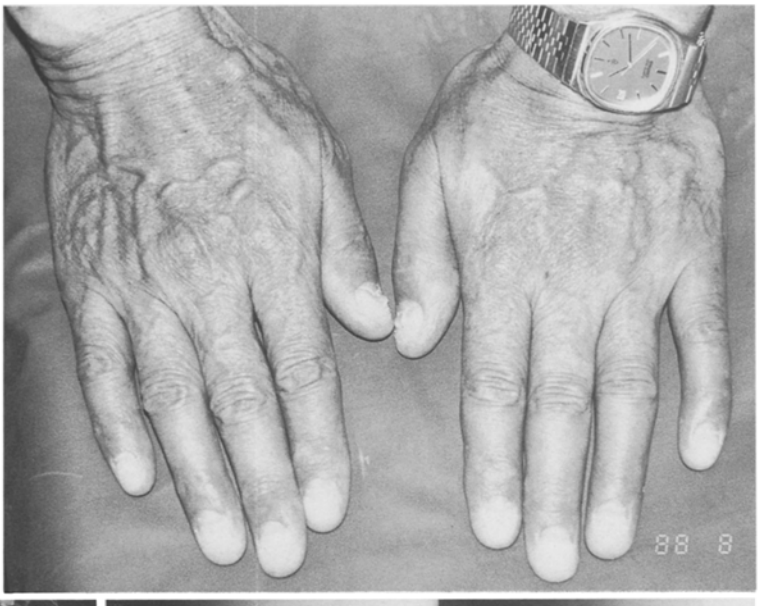

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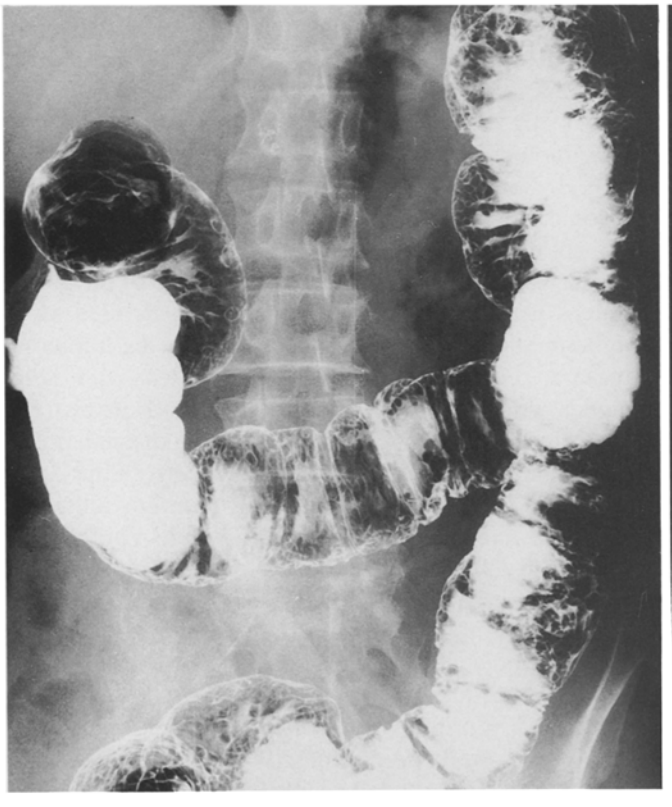

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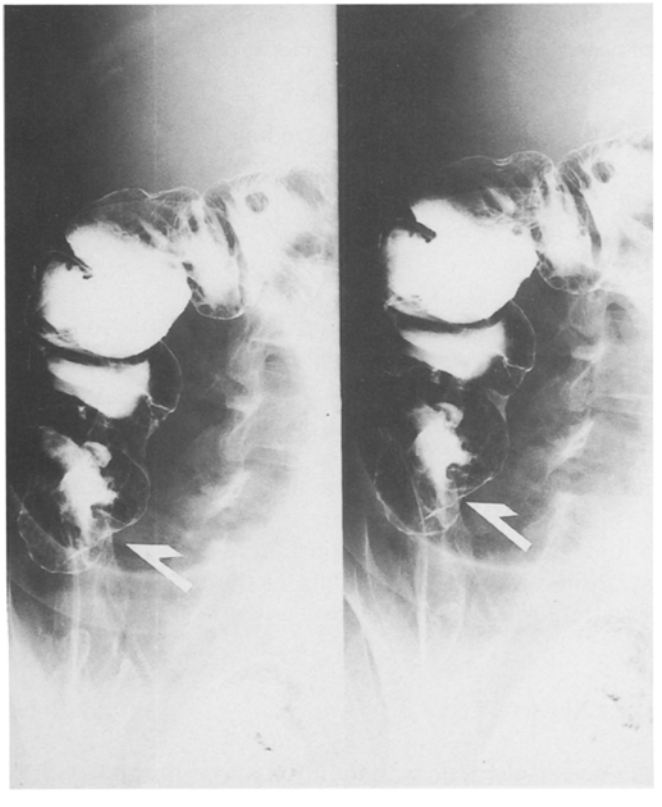

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Fig. 1. Scalp of the patient showing almost total alopecia

Fig. 2. Photograph of the fingernails showing onycodystrophy

Fig. 3. Barium enema demonstrating numerous polypoid lesions

Fig. 4. Barium enema demonstrating a protruded lesion in the ascending colon (*arrow*)

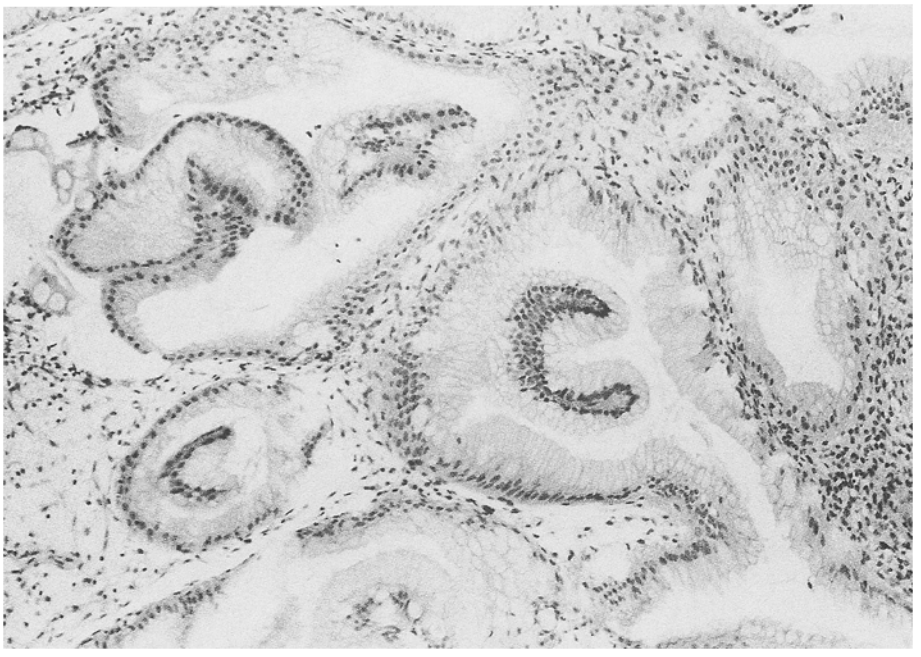


Fig. 5. Histology of the polyp in the stomach, demonstrating cystic dilatation of the glands, stromal edema and inflammatory cell infiltration. (H&E, ×142)

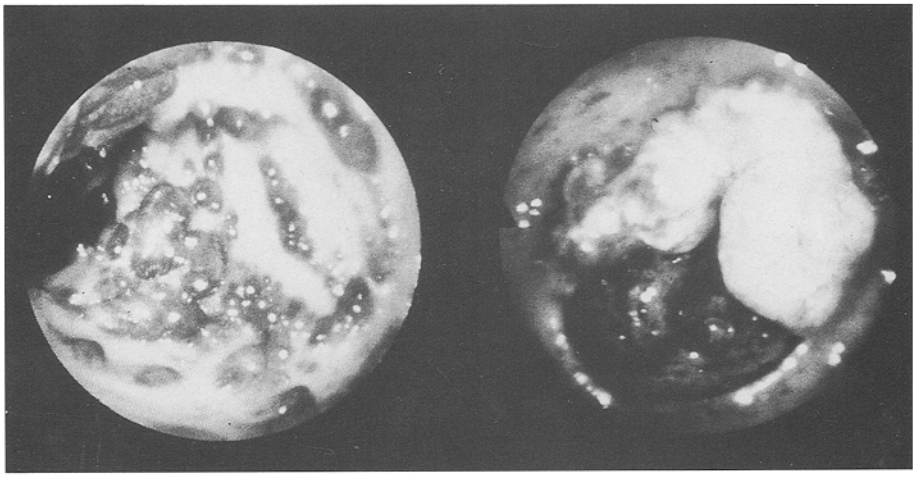


Fig. 6. Colonoscopic photographs. Almost total replacement of the normal colonic mucosa by sessile polyps can be seen

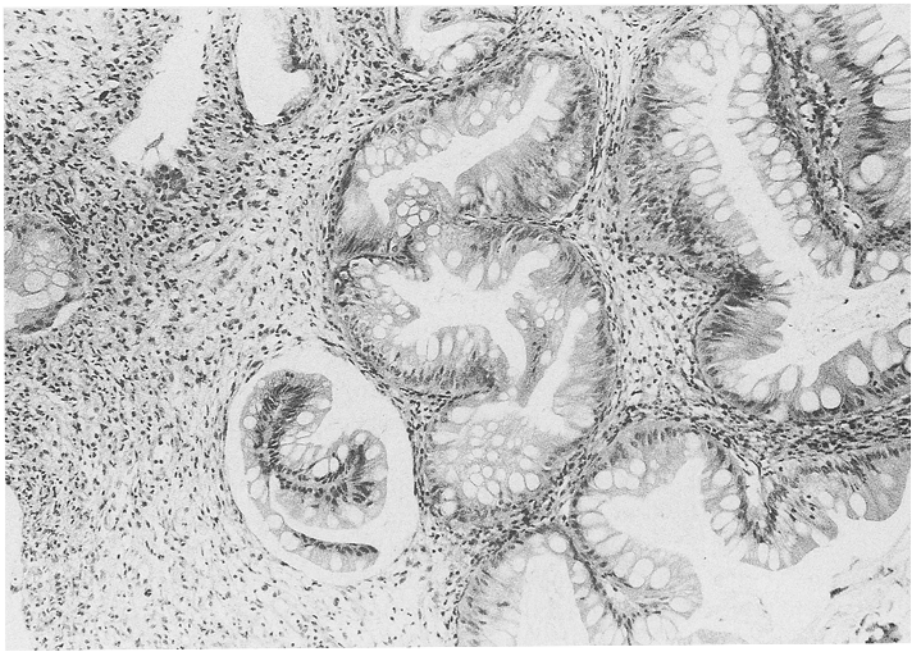
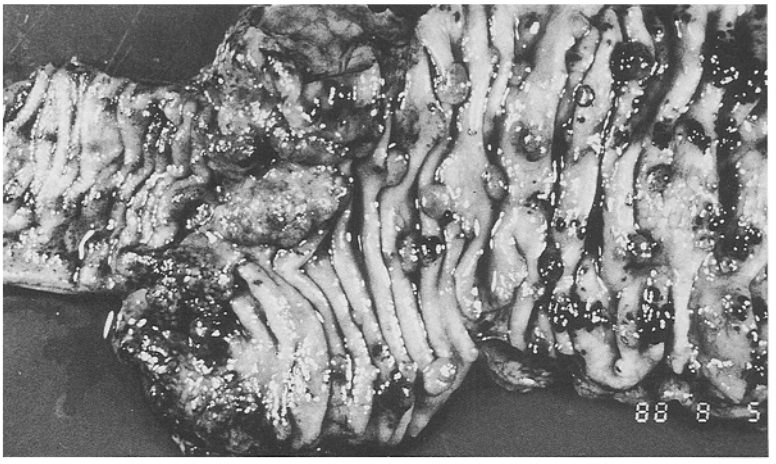


Fig. 7. Histology of the polyps in the colon. The histopathology of the colonic polyp was similar to that of the gastric polyp. (H&E, ×142)



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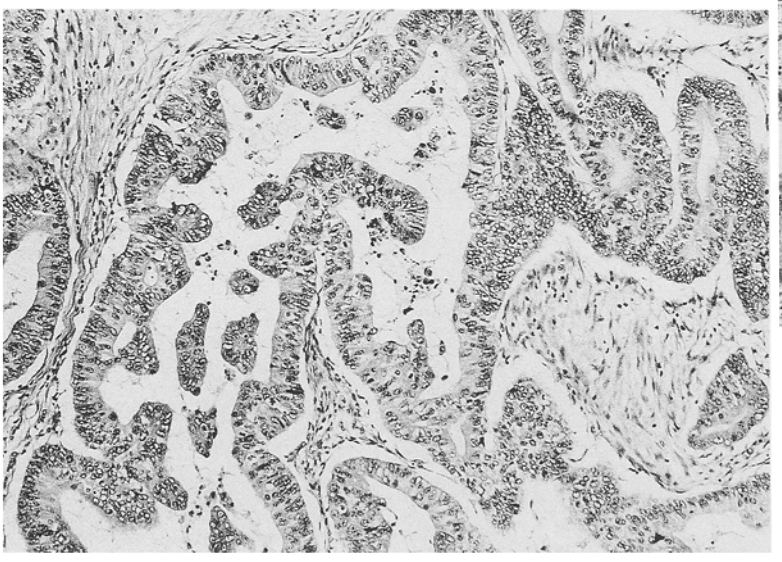

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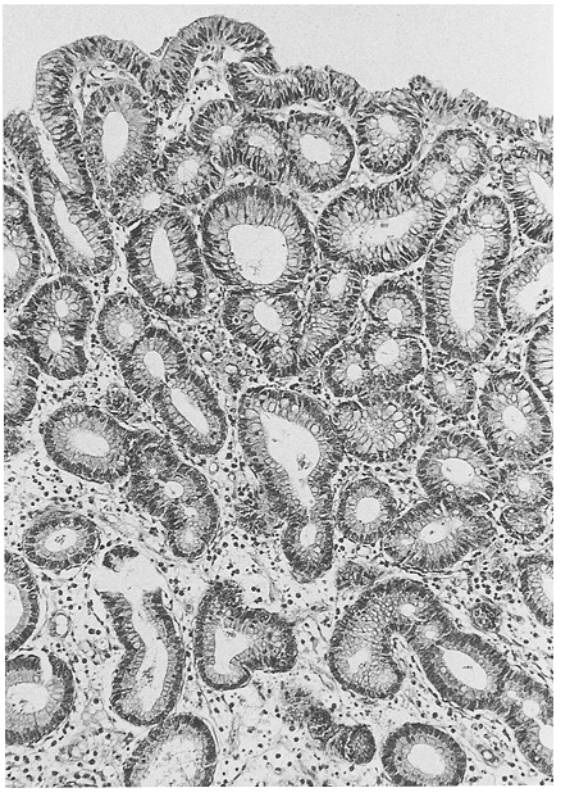

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Fig. 8. Gross appearance of the right hemicolectomy specimen

Fig. 9. Histology of the protruded lesion in the ascending colon, demonstrating well-differentiated adenocarcinoma. (H&E, ×120)

Fig. 10. Histology of the polyp in the colon, demonstrating adenomatous change. (H&E, ×120)

of the skin and mucosa, alopecia, and nail atrophy. Since that time, a further 100 cases of this syndrome have been reported.

Cronkhite-Canada syndrome develops during middle to old age and no evidence of a genetic predisposition has been found. The presenting symptom is watery diarrhea, while anorexia, weight loss, and peripheral edema due to hypoproteinemia are also frequently present. Ectodermal abnormalities may develop before or after the onset of diarrhea. In our patient, hair loss, hyperpigmentation, and dystrophy of the finger- and toenails developed several months before the onset of intestinal symptoms.

The etiology of Cronkhite-Canada syndrome is still obscure despite detailed studies on individual patients. In the original description by Cronkhite and Canada,[1] the gastrointestinal lesions were said to be adenomatous polyps, but in the most recent reports they are described as inflammatory pseudopolyps.[2,3] In 1972, Diner[4] revised the histologic report of the two original cases, and stated that the lesions should have been described as inflammatory pseudopolyps.

Generally, these polyps have been considered non-neoplastic in nature.[5,6] However, some authors have described adenomatous changes in Cronkhite-Canada syndrome,[7] including the focal transition of polyps to adenomatous proliferation. Da Cruz[8] reported the association of this syndrome with cancer of the colon, and since then a number of reports on the complication of carcinoma in the gastrointestinal tract have been

described.[7–11] According to Nonomura et al.[7] 8 of 54 cases of Cronkhite-Canada syndrome were associated with gastrointestinal carcinoma. In a comprehensive review, 8 of 55 patients (14.5%) with Cronkhite-Canada syndrome had associated carcinoma of the gastrointestinal tract.[12]

Although Cronkhite-Canada syndrome has been considered a benign condition, it may be premalignant and the present report adds evidence to this possibility. However, our patient is already 68 years old and thus approaching the age at which colorectal cancer is not uncommon. Thus, we must be aware of the high risk of carcinogenesis in this case and follow up carefully, performing a histologic check by biopsy of any polyp that is more than 1 cm in diameter. We recommend that patients with generalized gastrointestinal polyposis need to be screened carefully, so that surgical therapy can be carried out at an early and appropriate stage. However, prophylactic colectomy against the development of cancer should not be performed in asymptomatic cases of Cronkhite-Canada syndrome.

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