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Case Report

Cronkhite-Canada Syndrome

S P Junnarkar*, J M Sloan**, B T Johnston†, J D Laird***, S T Irwin*

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Cronkhite-Canada syndrome is one of the rare causes of multiple polyposis, characterised by generalised gastrointestinal polyposis, cutaneous hyperpigmentation, alopecia, and nail dystrophy.[1] Although Cronkhite and Canada described it for the first time in 1955, little is known about its aetiology and the prognosis remains poor. We describe a case of Cronkhite-Canada syndrome in a 79-year-old Japanese man, which illustrates the typical features of the condition.

CASE REPORT A 79 year old man presented with a history of weight loss of ten kilogrlms over a period of 2 months, associated with diminished taste and watery diarrhoea (4-5 times per day). He had pigmentation of the skin, especially on the hands, as well as dystrophic nail changes and alopecia with loss of8scalp and facial hair.

Barium enema showed an unusual polypoid appearance throughout the colon with relative sparing of the ascending colon and caecum (figure 1). Colonoscopy revealed numerous polypoid lesions of the colonic and rectal mucosa. Gastroscopy revealed multiple polyps in the stomach and duodenum similar in appearance to those seen in colon and rectum. A small bowel series showed multiple polyps throughout the small bowel.

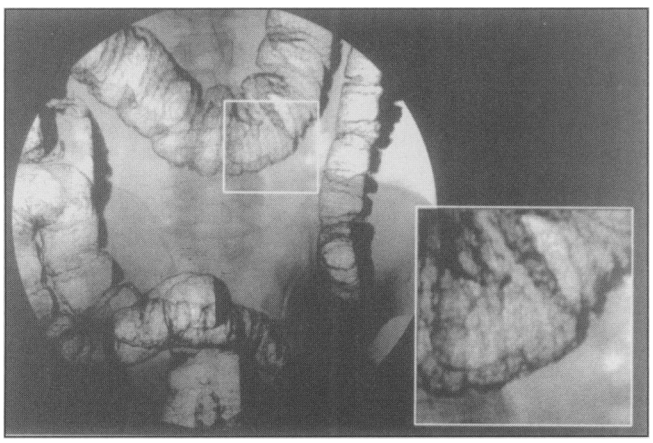

Fig 1. Barium enema showing multiple polyps throughout the colon.

Biopsies taken from stomach and colon showed small hamartomatous mucosal polyps. In both sites the mucosa was oedematous and showed cystic dilatation of foveolae in the stomach and of mucosal glands in the colon (figure 2). The cysts were lined by normal or flattened epithelial and mucus secreting cells and there was no evidence of dysplasia or malignancy in either site. The histological features were similar to those of juvenile polyps although eosinophils were less prominent in the stroma.

The histological features, the wide distribution of the polyps together with the skin changes described above pointed to the diagnosis of Cronkbite-Canada syndrome.

Nutritional support was instituted with enteral feeding both orally and through a nasogastric tube. Despite this, his serum albumin continued to fall. From a level of 28 gm/l on admission this fell to 23 gm/l in 3 weeks and further fell to 15 gm/l within the next six weeks. In parallel with this he developed gross peripheral oedema and his general health rapidly deteriorated. He died two and half months after presentation.

Departments of Surgery*, Pathology**, Medicine and Radiology***, Royal Victoria Hospital, Belfast.

S P Junnarkar*,MS, FRCS.

J M Sloann**, MD, FRCPath.

B T Johnston†, MD, MRCP.

J D Laird***, MD, FRCR.

S T Irwin*, MD, FRCS(Ed), FRCS(Eng).

Correspondence to Mr Irwin, Royal Victoria Hospital, Grosvenor Road, Belfast BT12 6BA.

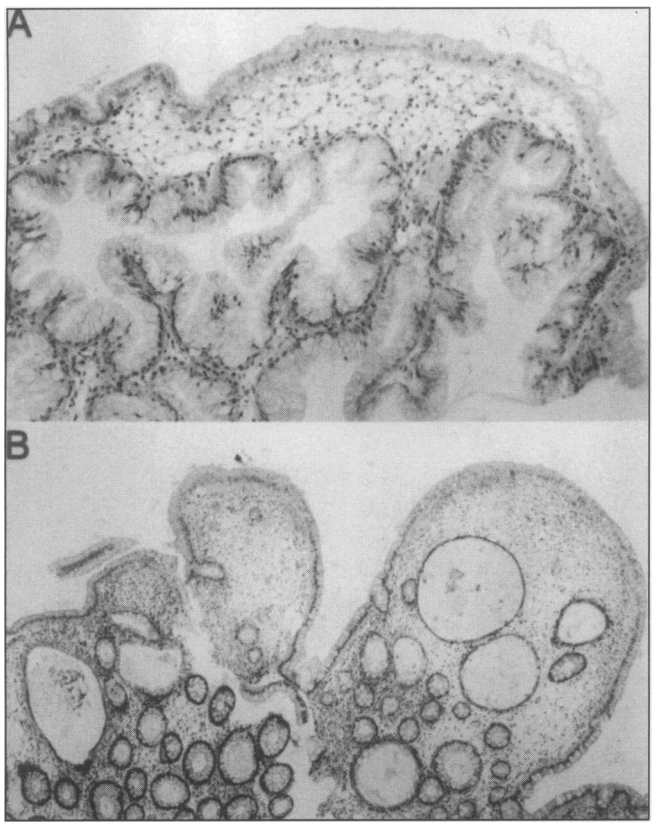

Fig 2. Oedematous mucosa with cystic dilatation of the gastric foveolae (A) and mucosal glands in the colon (B).

DISCUSSION

Cronkhite and Canada first described a syndrome of generalised gastrointestinal polyposis associated with cutaneous pigmentation in 1955.[1] The cardinal features of this syndrome are: (1) the presence of hamartomatous polyps of the juvenile (retention) type throughout the stomach and intestines, (2) ectodermal changes consisting of alopecia, onychodystrophy and hyperpigmentation, (3) the absence of family history, (4) adult onset, (5) the eventual development of diarrhoea and weight loss. The coexistence of all these features separates Cronkhite-Canada syndrome from other polyposis syndromes,[2] however, multiple regenerative polyps localised to the stomach, ascending colon and transverse colon, has been described by Hanzawa et al.[3]

Although Cronkhite-Canada syndrome and Menetrier's [4-6] disease have similar gastric morphology and both are associated with protein-losing enteropathy, Menetrier's disease is confined to gastric mucosa and is not associated with ectodermal changes.

The ectodermal changes seen in Cronkhite-Canada syndrome are not exclusive to the condition. Similar changes are seen in hypoparathyroidism[2] and kwashiorkor.[2,7] The hyperpigmentation seen in Cronkhite-Canada syndrome is not believed to be secondary to hormonal changes.[2]

The polyps found in Cronkhite-Canada syndrome cannot easily be distinguished from other causes of colonic polyps. They resemble juvenile polyps found in stomach and colon and hyperplastic polyps in the stomach. The most striking histological feature is the intense oedema of the lamina propria of the mucosa. In addition gastric foveolae and colonic mucosal glands are cystically dilated. In the presence of surface erosion, the lamina propria may be inflamed, but in general inflammatory cells which include plasma cells and eosinophils are widely separated by oedema. Since in the stomach, the histological features are indistinguishable from juvenile or hyperplastic polyps the diagnosis depends on the presence of additional clinical features. In the colon, juvenile polyps have a smooth rounded surface and are pedunculated, while the polyps of Cronkhite-Canada syndrome are sessile and have an irregular, multilobulated surface.[8] Adenomatous and carcinomatous changes have been reported in Cronkhite-Canada polyps,[9,10] but this is rare, and dysplasia is not normally a feature. Similar polyps occur in the duodenum although they were not biopsied in this case.

The pathogenesis of the condition is obscure but interruption of the normal maturation of undifferentiated crypt cells to epithelial cells has been suggested.[11] The protein loss could be due to excessive mucus secretion by the crypt cells, along with malabsorption due to the villous atrophy. An improvement in the diarrhoea has been reported on administration of lactase in a single case,[12] suggesting that the diarrhoea could be partly caused by lactase deficiency.

The prognosis in Cronkhite-Canada syndrome is very poor, with few patients surviving more than a few months. Where the disease process seems localised, resection has been attempted with anecdotal reports of symptomatic remission. Steroids do not modify the course of the disease. Patients are usually resistant to enteral supplementation although two of the 55 patients reviewed by Daniel *et al*, showed complete symptomatic remission with resolution of all of the ectodermal aberrations.[2]

In summary, this case history illustrates one of the many rarer polyposis syndromes. In particular, it illustrates the devastating degree of protein losing enteropathy, which can occur when the small bowel is involved.

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