



# Case of Cronkhite-Canada Syndrome

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## Abstract

Cronkhite–Canada syndrome is a nonhereditary syndrome. It is characterized by cutaneous manifestations and gastrointestinal (GI) polyps. Patients may also present with diarrhea and weight loss. Early diagnosis of disease is important to avoid morbidity and mortality. Definitive treatment is not available for Cronkhite–Canada syndrome but supportive care and symptomatic treatment will improve the symptoms and increase the quality of life.

## Keywords

- ▶ Cronkhite–Canada syndrome
- ▶ cutaneous manifestations
- ▶ gastrointestinal polyps
- ▶ diarrhea

## Introduction

Gastrointestinal polyposis refers to the presence of numerous polyps in the gastrointestinal (GI) tract. GI polyposis syndromes have other system involvement apart from intestinal polyps. Polyposis syndromes are categorized into hereditary and nonhereditary. Early diagnosis of polyposis syndromes is important for appropriate treatment because delayed diagnosis leads to malignancy and increased mortality. Cronkhite–Canada syndrome is a rare nonhereditary disease, which is characterized by malabsorption, diffuse gastrointestinal polyps, skin hyperpigmentation, and nail changes.

## Case Presentation

A 50-year-old male presented with altered taste for 6 months, weight loss of approximately 15 kgs in 6 months (65 kgs to 50 kgs), pigmentation of palms and soles for 5 months, with gradually increased darkening of skin, thinning of nails, splitting of nails and easy fatigability. He also has history of small-volume watery diarrhea, with occasional nocturnal episodes over a period of 1 month. He has no other comorbidities and no history of malignancy in the family. On examination, the patient was poorly nourished with body mass index (BMI) 17.6, alopecia, pallor, bald tongue (▶ Fig. 1), bilateral pitting edema, pigmented palms and soles, and dystrophic

nails (▶ Figs. 2 and 3). On evaluation, patient had anemia (hemoglobin 10 gr/dl), mild rise in erythrocyte sedimentation rate (ESR) (20 mm at 1st hour), hypoalbuminemia (2.3 gr/dl), serum calcium 8 mg/dl, low vitamin D (11.9 ng/mL), and low cholesterol and triglycerides. Patient stool examination was unremarkable, thyroid profile was normal, and antinuclear antibody test was negative.



**Fig. 1** Showing alopecia, bald tongue.

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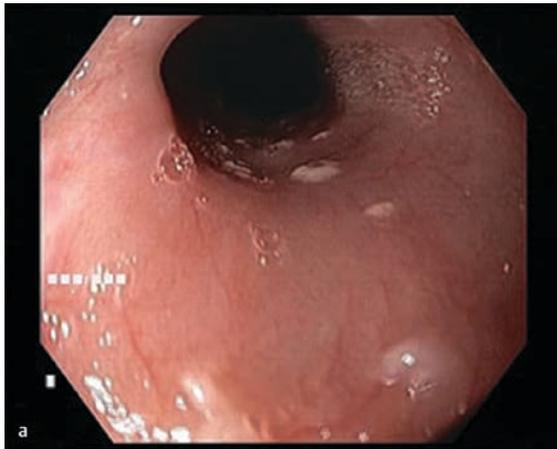




**Fig. 2** Showing pigmentation of palms and nails, and increased scaling, pitting and dystrophy.



**Fig. 3** Showing increased pigmentation of soles.



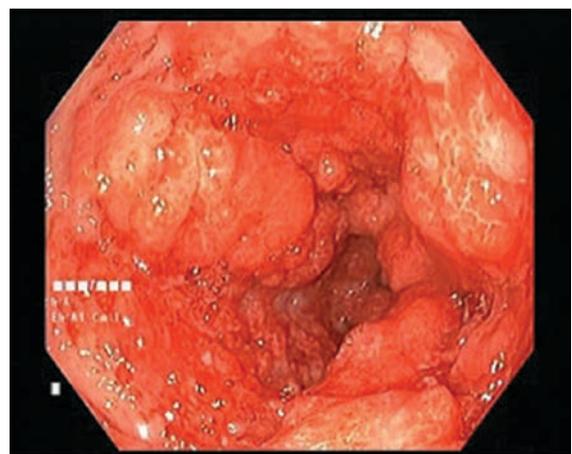
**Fig. 4** (a) Showing candidiasis esophagus; no polyps seen in esophagus. Gastroesophageal junction also visible (b), showing small to large polyps in the antrum of stomach.

Radiological evaluation showed circumferential wall thickening in antrum and pylorus of stomach. Upper GI endoscopy revealed esophageal candidiasis (► **Fig. 4a**), thickened folds in stomach, strawberry-like sessile polyps in antrum (► **Fig. 4b**), and multiple sessile bright red polyps with few pedunculated polyps seen in duodenum. Colonoscopy revealed sessile and pedunculated polyps, starting from rectum to terminal ileum, predominantly involving the right side of the colon (► **Fig. 5**). Histopathology of polyps showed dilated glands, edematous lamina propria, inflammatory cell infiltrate having neutrophils, monocytes, and few mast cells suggestive of hamartomatous polyps (► **Figs. 6 and 7**).

The patient was diagnosed with Cronkhite–Canada syndrome with all the above-mentioned features. He was started on parenteral nutrition, pantoprazole injection 40 mg twice a day and prednisolone 50 mg once daily. The patient succumbed to illness after 45 days of admission in our hospital, probably because of advanced stage of the disease.

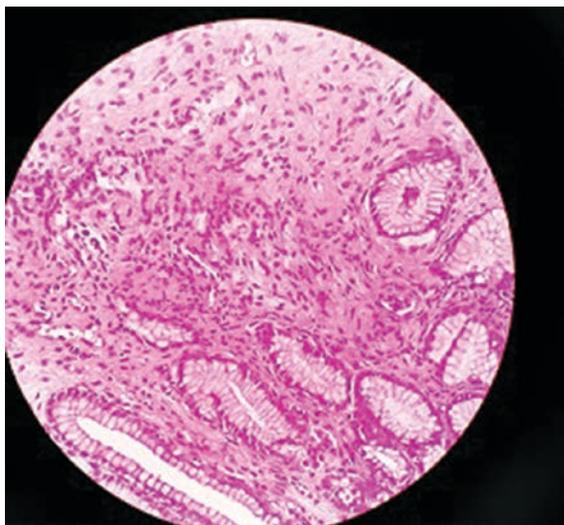
## Discussion

Cronkhite–Canada syndrome was first described in 1955.<sup>1</sup> The mean age of onset of the disease is the fifth to sixth decade of life with male to female ratio of 3:2.<sup>2</sup>

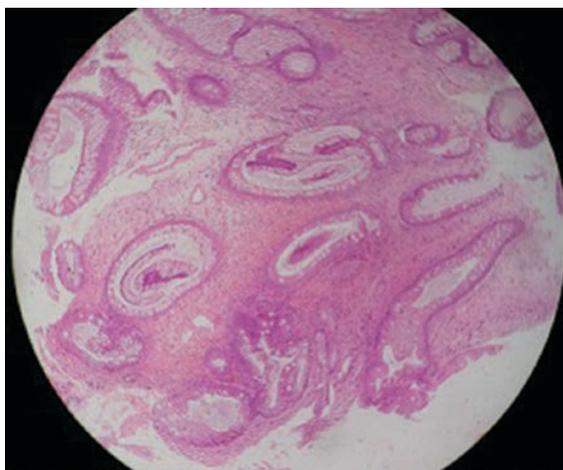


**Fig. 5** Showing large polyps in ascending colon.

The etiology of Cronkhite–Canada syndrome remains elusive. Mental and physical stress were reported as precipitating factors in the past.<sup>3</sup> Infectious cause, nutritional deficiency, and altered intestinal mucin production are other proposed theories.<sup>4</sup> One study showed evidence of autoimmunity by increasing Ig G4 plasma cells in affected patients, which may be associated with increased antinuclear antibody (ANA)



**Fig. 6** Showing histopathology of polyps from stomach, edematous lamina propria, and chronic inflammatory cell infiltrate involving lamina propria and around the glands.



**Fig. 7** Showing histopathology of polyp from colon, chronic inflammatory cell infiltrate involving lamina propria and near epithelial surface.

levels (systemic lupus erythematosus, rheumatoid arthritis, and scleroderma) and hypothyroidism.<sup>4</sup>

Clinical features are hypogeusia or dysgeusia, diarrhea, weight loss, anorexia, and vomiting. Electrolyte imbalance may lead to paresthesia, seizures, and tetany. Examination reveals ectodermal abnormalities such as alopecia, loss of axillary hair and pubic hair, nail dystrophy, nail thinning, nail splitting<sup>5</sup> and diffuse skin pigmentation, and skin biopsy shows increased melanin deposition with or without increased melanocyte proliferation.

On endoscopy, multiple polyps throughout the GI tract, with characteristic sparing of esophagus,<sup>5</sup> histopathology of polyp characterized by cystic dilatation of glands, and edematous lamina propria with inflammatory cell infiltrate, which is suggestive of hamartomatous or juvenile polyp, was observed.<sup>6</sup> Disease course is usually progressive and leads to GI bleeding, anemia, electrolyte imbalance, and

hypoproteinemia.<sup>5</sup> Cronkhite–Canada syndrome polyps have malignancy potential, especially increased risk of adenocarcinoma of stomach,<sup>7</sup> sigmoid colon and rectal cancers.<sup>8</sup> Five-year mortality of Cronkhite–Canada syndrome is 55%.

Optimal treatment for Cronkhite–Canada syndrome is not known. Aggressive nutritional support is most important. These patients can be treated with corticosteroids and proton pump inhibitors to induce remission. Some studies support treatment with azathioprine, cyclosporine, cromolyn sodium, antibiotics and, rarely, colectomy.<sup>9</sup> Due to the rarity of the disease, appropriate treatment protocols and screening guidelines for malignancy have not established.

## Conclusion

Cronkhite–Canada syndrome is a nonhereditary GI polyposis syndrome characterized by diarrhea, skin changes in the form of hyperpigmentation, splitting and thinning of nails, and hair loss. Endoscopy shows polyps throughout the GI tract with characteristic sparing of esophagus. Histology of these polyps reveal hamartomatous polyp or juvenile polyp. Early diagnosis of the disease is important to avoid mortality. Treatment includes symptomatic treatment for diarrhea, nutritional support, corticosteroids, proton pump inhibitors, and antibiotics. Some studies support immunosuppressive treatment.

## Conflicts of Interest

None declared.

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