

Orofacial Crohn's disease: a Case Report

SUMMARY

Background: Crohn's disease (CD) and ulcerative colitis (UC) are the two major relapsing conditions of inflammatory bowel diseases. **Case Report:** A case of Crohn's disease with orofacial manifestations in a 10 year old girl is described. She had suffered from fever, dysphagia, arthralgia, painful recurrent ulcers of the oral mucosa and swelling of the lower lip lasting over 6 weeks. Clinical examination and the punch biopsy from the buccal mucosa revealed major recurrent aphthous ulcerations. A partial regression and significant relief of lesions were achieved two weeks after the treatment, but the patient suffered from abdominal pain, irregular bowel movements, arthritis, multiple hyperplastic and swollen mucosal folds, after 3 months. The patient was referred to a pediatric gastroenterologist. Esophagogastroduodenoscopy showed pyloric ulcer formation. Abdominal ultrasound showed increased thickening of the ileal wall with multiple enlarged lymphadenopathies in the periileal region. Colonoscopy images showed deep ulcers with surrounding erythema. The histopathological examination of biopsies from the terminal ileum and the colon showed basal plasmacytosis, minimal crypt distortions and aphthous ulcerations. The diagnosis of Orofacial Crohn's disease was made. Exclusive enteral nutrition for 8 weeks, followed by azathiopurine treatment was started with an excellent clinical response on abdominal and oral symptoms. **Conclusion:** Diagnosis of the disease by dentists and other clinicians through the evaluation of oral clinical findings is very rare. Mucocutaneous and granulomatous lesions of the oral cavity should alert the clinician to pursue an underlying systemic cause. Early communication with a gastroenterologist can help early diagnosis of Crohn's disease for better patient management and prognosis.

Key words: Crohn's Disease, Orofacial Granulomatosis, Inflammatory Bowel Disease, Recurrent Aphthous Ulcerations, Oral Lesions

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CASE REPORT (CR)

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Introduction

Crohn's disease (CD) and ulcerative colitis (UC) are the two major relapsing conditions of inflammatory bowel diseases¹. CD and UC are considered autoimmune disorders resulting from the interactions of various factors including genetics, environmental factors and immune response²⁻⁴.

CD is a chronic inflammation of the intestines and affects any site in the gastrointestinal tract from the

mouth to the anus, specifically localized to the ileocecal region^{2,5}. The most presenting symptoms are abdominal pain, diarrhea, fever, anorexia and weight loss⁵⁻⁷. In addition to the aforementioned symptoms, anemia, skin rashes, arthritis, inflammation of the eye and growth retardation may occur⁶. Bowel obstruction also commonly occurs and CD patients are at risk of developing dysplasia or adenocarcinoma of the small intestine or colorectal mucosa^{6,8}. Symptoms frequently begin in early adulthood⁷ and the first peak occurs before the age of 25.

Oral manifestations of CD patients⁹ may be present in 8-29%. Orofacial Crohn's disease (OCD) is a type of CD with specific oral lesions. CD patients may show orofacial signs with mucogingivitis, mucosal tags, oral ulcers, cobblestoning appearance of the cheeks and lip swelling (macrochelia)¹⁰. The differential diagnosis of oral manifestations in patients with CD must consider other granulomatous oral disorders. The presence of granulomatous inflammation in the oral mucosal biopsies is the differential marker for diagnosis of OCD¹¹.

We present a 10-year-old girl with orofacial lesions as an initial manifestation of Crohn's disease. Written informed consent was obtained from the parents of the patient for presenting of this case report and accompanying images.

Case Report

A 10-year-old girl presented with history of fever, dysphagia, arthralgia, painful recurrent oral ulcers, weight loss and swelling of the lower lip lasting over 6 weeks. Her familial history was unremarkable. The parents related the ulcer development with cheek-bite.

On physical examination her body weight was 23 kg (in the 3rd percentile), and height was 131 cm (between the 3rd-10th percentiles).

Clinical examination revealed the presence of painful, big and deep oral ulcers, cheek-bite and enlargement of lower lips (Figure 1). The lymph node examination was unremarkable. Abdominal examination showed no remarkable findings. Anorectal examination of the child showed no skin tags, fistula or fissures.

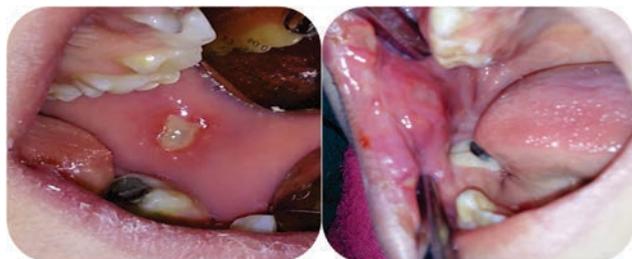


Figure 1. Clinical examination revealed the presence of painful, big and deep oral ulcers, cheek-bite and enlargement of lower lips

Initial laboratory investigations, including complete blood count, biochemistry profile and autoantibodies showed only mild iron deficiency anemia (hsCRP: 27.58 mg/L, WBC: 14.5 $10^3/\mu\text{L}$, HGB: 10.9 g/dL, MCV: 76.3 fL, HBsAg and Anti-HIV: negative).

A punch biopsy from the buccal mucosa was performed. Histopathological examination showed an erosive surface with a dense inflammatory infiltrate composed mainly of polymorphonuclear neutrophils extending into the mucosa and submucosa. Based on

the patient's history and mucosal biopsy, a diagnosis of Major Recurrent Aphthous Ulcerations (RAU) of the oral mucosa was made. RAU was related with iron deficiency, emotional stress and local trauma. The patient was advised to use a pre-orthodontic trainer appliance. The treatment approach for major aphthous ulcers included corticosteroid, analgesic, antibiotic drugs, epithelization agents and mouth rinses. A partial regression and significant relief of lesions were achieved two weeks after the treatment. A recurrence was observed after three months (Figure 2). The patient had history of intermittent abdominal pain, irregular bowel movements and arthritis. Multiple hyperplastic, swollen mucosal folds, forming the Cobblestone appearance of buccal mucosa were present in intraoral examination. The patient was referred to a pediatric gastroenterologist. Crohn's disease, tuberculosis and sarcoidosis were included in the differential diagnosis. The colonoscopy, endoscopy of the gastrointestinal tract and blood tests were performed.



Figure 2. A recurrence was observed after three months. On intraoral examination, multiple hyperplastic, swollen mucosal folds, forming Cobblestone appearance of buccal mucosa were present

Faecal calprotectin was elevated to 773 $\mu\text{g/g}$. HsCRP was 27.58 mg/L and blood sedimentation rate was 65 mm/hr. Chest radiograph was normal, with no signs of sarcoidosis or tuberculosis, but the QuantiFERON TB® gold test was positive, showing tuberculosis exposure. Esophagogastroduodenoscopy showed pyloric ulcer formation. Abdominal ultrasound showed increased thickening of the ileal wall with multiple enlarged lymphadenopathies in the periileal region. Colonoscopy images showed deep ulcers with surrounding erythema (Figure 3). The histopathological examination of biopsies from the terminal ileum and the colon showed basal plasmacytosis, minimal crypt distortions and aphthous ulcerations (Figure 4). The diagnosis of Orofacial Crohn's disease was made. Exclusive enteral nutrition for 8 weeks followed by azathiopurine treatment was started with an excellent clinical response on abdominal and oral symptoms (Figure 5).



Figure 3. Colonoscopy images showed deep ulcers with surrounding erythema

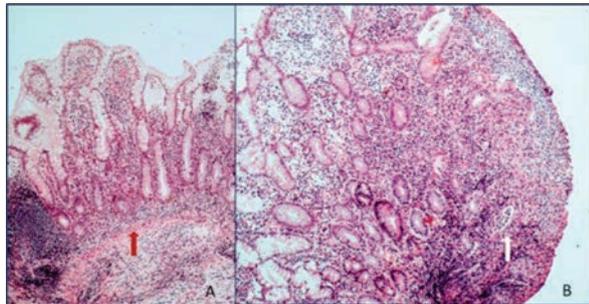


Figure 4. The histopathological examination of biopsies from the terminal ileum and the colon. (A) Basal plasmacytosis (red arrow) and minimal crypt distortion are seen (H&E, 10x magnification), (B) Aphthous ulceration and crypt abscess (white arrow) can be appreciated (H&E, 20x magnification)



Figure 5. Medical treatment revealed excellent clinical response on abdominal and oral symptoms after 1 year

Discussion

The orofacial signs may sometimes be seen as manifestations of gastrointestinal (GI) diseases and may occur before GI disease, be present during the disease or show persistence after the disease^{10,12,13}. The oral lesions may show similarity to GI lesions or the oral manifestations are caused by systemic alterations secondary to GI disease¹³.

OCD is more common in children than adults, but it may occur in any age group⁷. Genome-wide association studies provided strong evidence that genetic factors contribute to the pathogenesis of inflammatory bowel diseases¹⁴⁻¹⁶.

The heterogeneous and variable symptoms of CD may exist in a subclinical state, making the diagnosis more difficult¹⁷. This report revealed that the patients presenting with complaints of chronic fatigue, fever, dysphasia, arthralgia and painful recurrent oral ulcerations, should be evaluated for Crohn's disease.

The history of complaints, physical examination, colonoscopy and pathological examination of biopsy specimens are useful for diagnosing Crohn's disease^{17,18}. Faecal calprotectin and lactoferrin are biochemical markers of inflammation in the stool¹⁸. The elevated levels of stool markers indicate intestinal inflammation, which occurs during Crohn's or ulcerative colitis^{18,19}.

The nutrition support is very important in order to promote growth and development, to correct micronutrient deficiencies and to improve quality of life in young CD patients²⁰. The principal strategies for CD management are the control of symptoms, induction of clinical remission and maintenance of remission with the least adverse effects from medication^{17,21}. Treatment of CD depends on disease location. An important treatment option is exclusive enteral nutrition, which is as good as steroids in induction of clinical remission²². The other principal strategies are "step-up" and "top-down" approaches for CD management. The step-up approach begins with topical or systemic steroids, advances to immunomodulators or anti-tumor necrosis factor (TNF) agents due to severity of disease^{22,23}. The "top-down" approach starts with a combination of immunomodulators and anti-TNF agents. The optimal treatment of CD remains controversial²⁰. Severe cases exhibiting bowel obstruction, fistulae, or perforations may require surgical intervention^{21,23}.

The prospective studies revealed the persistence of oral manifestations in children with OCD^{24,25}. The dentists play an important role in the early diagnosis of CD with the awareness of the oral manifestations¹⁷.

Conclusion

Diagnosis of the disease by dentists and other clinicians through the evaluation of oral clinical findings is very rare. Mucocutaneous and granulomatous lesions of the oral cavity should alert the clinician to pursue an underlying systemic cause. Early communication with a gastroenterologist can help early diagnosis of Crohn's disease for better patient management and prognosis.

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