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Case report

Multiple oral ulcerations: A very rare case of Churg-Strauss syndrome with renal disease

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ABSTRACT

Oral ulcerations are an extremely rare manifestation of Churg-Strauss Syndrome (CSS), which have not yet been documented as a potential prodromal sign of this multisystemic autoimmune vasculitis which may also involve the kidneys. The authors present a very rare case report of widespread oral ulcerations which preceded the onset of CSS with crescentic glomerulonephritis and persisted throughout the course of the disease. Oral manifestations included atypical clusters of oral aphthae and other lingual and mucosal ulcerations. The case demonstrates the disease spectrum and review of current understanding of this disease. The dentist may be the first health care professional to see patients with symptoms and findings of this condition. Definitive diagnosis is challenging owing to the subtle onset of the disease and variable clinical and laboratory findings. Clinicians should be informed about the possibility of oral manifestations of CSS to facilitate prompt disease recognition and to provide continued oral health care to these medically complex patients. Early diagnosis and treatment is the most important factor in the management of this potentially fatal disease as well as to promote quicker remission.

1. Introduction

Oral ulcers are often difficult to diagnose and treat in dentistry, as there are many potential causes. In addition to traumatic, neoplastic, infectious or inflammatory factors, vasculitis such as Wegener's granulomatosis (WG) may also trigger oral ulcers [1]. For differential diagnosis oral ulcers (strawberry gingivitis) may distinguish WG from Churg-Strauss syndrome, a similar vasculitis which does not characteristically present with such signs [2–4].

Churg–Strauss syndrome (CSS), also referred to by its medically more accurate term eosinophilic granulomatosis with polyangiitis (EGPA), is a very rare disorder, with less than two cases per one million people diagnosed each year [5–8]. The necrotizing vasculitis affects predominantly small and medium-sized blood vessels, causing injury to organ systems – most commonly the lungs, nose, sinuses, skin, joints, nerves, intestinal tract, heart, and kidneys. The main features of the disease include hypereosinophilia, late-onset asthma, transient pulmonary infiltrates and the development of inflammatory nodular lesions called granulomas (granulomatosis) [7]. Manifestations of vasculitis often include skin nodules or purpura and mononeuritis multiplex, causing numbness or tingling or sudden loss of strength in the hands or feet.

Although not a diagnostic criterion, the presence of antineutrophil cytoplasmic antibodies (ANCA), especially perinuclear ANCA (p-ANCA) with myeloperoxidase (MPO) specificity, is frequent in CSS [9]. Unlike WG, however, there has only been one case of a single palatine ulceration in a CSS patient reported to date [10]. To the best of our knowledge, widespread oral ulcers have not been documented nor found to be prodromal for CSS or CSS with renal disease. Renal disease is not a major feature of CSS, but does occur and is important to diagnose early because it can potentially be life-threatening.

2. Case report

A 64-year-old woman presented with complaints of painful ulcerations on the tongue, labial mucosa and floor of the mouth. The oral ulcers appeared 5 months beforehand and preceded the manifestation of a condition one month later that was initially diagnosed as crescentic glomerulonephritis. Clinical examination revealed minor aphthae presenting as groups of 20–30 shallow mucosal ulcers (diameter <10 mm) on non-keratinized oral mucosa

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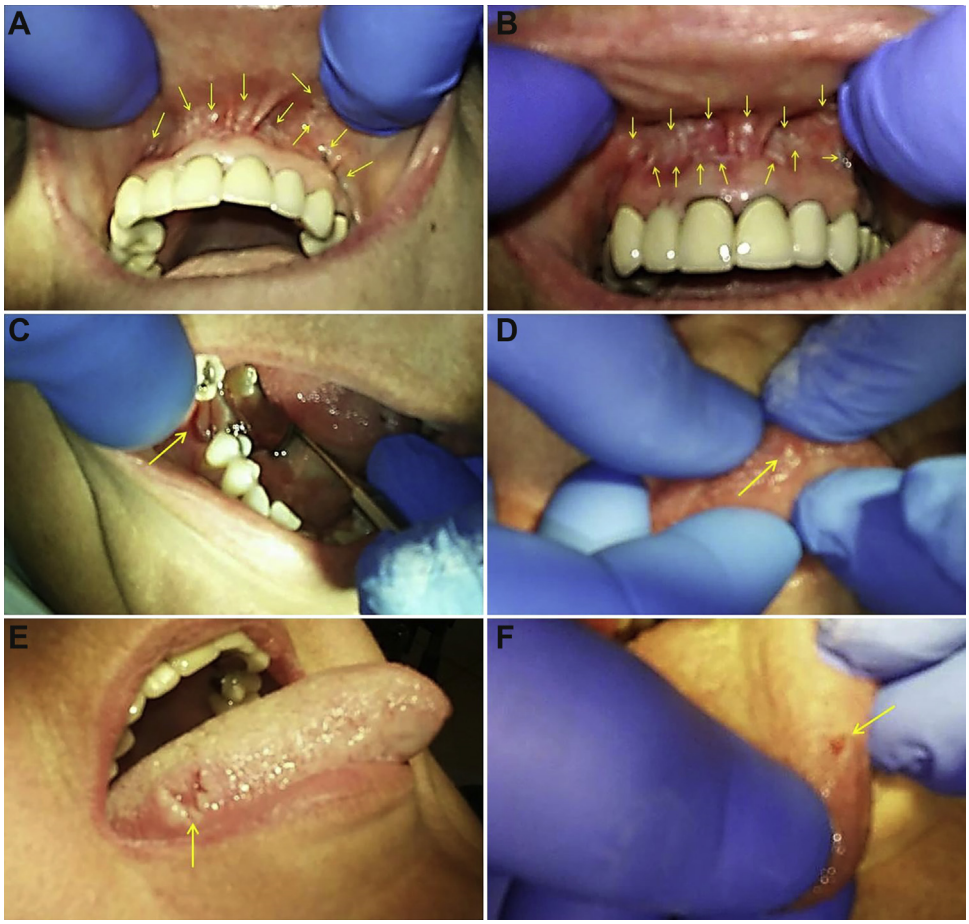

Fig. 1. **(A,B)** Groups of minor aphthous ulcers (<10 mm diameter) in the buccal vestibule. **(C)** Major aphthous ulceration (>10 mm diameter) on the floor of the mouth. **(D)** Herpetiform ulceration on the tip of the tongue. **(E)** Major aphthous ulceration on the right lateral side of the tongue. **(F)** Minor aphthous ulceration on the left lateral side of the tongue.

in the buccal vestibule (Fig. 1a,b). Major aphthous ulcers with larger diameter (>10 mm) and deeper than the minor aphthae, presented on the lateral sides of the tongue (Fig. 1e,f) and floor of the mouth (Fig. 1c) behind the right mandibular first molar. Herpetiform apththae presented at the same time as very small (1–2 mm diameter) and shallow mucosal ulcers on the tip of the tongue (Fig. 1d). A crop of these ulcers had converged to form a large ulcer ($\sim$10 mm^2) with irregular borders and marked erythema on the floor of the mouth apically to the mandibular central incisors. The rest of the dental examination was unremarkable.

Biopsies of this patient were subsequently conducted by a pathology laboratory at a major hospital in the United States after receiving orders from the physicians and dentists involved in the referral process. As it is not standard practice to send back pictures of biopsies in the lab report, the lab results are based on the observations and interpretations as documented in the hospital's official histology report. The morphology of the ulcers was similar, but varied according to diameter, presenting generally as shallow, rounded ulcers, with an inflammatory rim or halo, and a yellowish pseudomembrane. Biopsy of sampled tissue showed the ulcerations were non-specific and not neoplastic. The mucous membrane of the aphthae showed superficial tissue necrosis with a fibrinopurulent membrane covering the ulcerated area. The necrosis was covered by tissue debris and neutrophils. The epithelium was infiltrated by lymphocytes and few neutrophils. Intense inflammatory cell infiltration, predominantly neutrophils presented immediately below the ulcer, while mononuclear lymphocytes were seen in adjacent areas. The lesions were painful and exacerbated by movement, making eating and speaking difficult. Despite at least three outbreaks within three months at different focal sites, the ulcers tended to heal spontaneously without sequelae with or without treatment.

Initial diagnosis of aphthous ulcers was made by history and physical exam. Treatment of the ulcerations was based on limited evidence and focused on symptomatic relief and decreasing ulcer duration, with local and topical analgesics or anti-inflammatory medications (Triamcinolone acetonide (0.1 mg) in carboxymethyl cellulose paste (Adcortyl in orabase, Kenalog); 4X/d). However, due to the onset of systemic symptoms a broader workup for potential underlying diseases manifesting with oral ulcers was conducted after the patient was admitted to a hospital with complaints of general weakness, unintentional weight loss, and persistent cough. Symptoms included incessant nausea, achy joints, back spasms and a foamy discharge in her urine. Within the past month, she also developed widespread cutaneous lesions, most notably palpable purpura along both arms and wrists (Fig. 2). Her medical examination was significant for hypertension, chronic sinusitis, nasal polyposis and allergic asthma which manifested recently without prior history of either allergy or asthma.

Her family history was non-contributory. Laboratory investigations revealed leukocytosis with prominent eosinophilia (>1500/mm^3 or >10%), elevated erythrocyte sedimentation rate (ESR $\geq$ 50 mM/h), elevated absolute eosinophil value (4.35×10^9 eosinophils/L), elevated serum IgE, positive rheumatoid factor (RF) titer ($\geq$40), positive perinuclear antineutrophil cytoplasmic antibody (p-ANCA) as determined by indirect immunofluores-

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