A non-healing oral ulcer as a manifestation of systemic tuberculosis in an immunocompetent man

Sir,

Oral ulcers can occasionally be the initial manifestation of a systemic illness. We report the case of a young immunocompetent male with a non-healing oral ulcer as the presenting feature of systemic tuberculosis.

A 29-year-old man presented to us with an oral ulcer for nine months. It first appeared over the upper labial mucosa, and then gradually increased in size to involve the hard palate. There was history of loosening of the teeth and difficulty in eating food. He denied smoking or chewing tobacco. Oral examination revealed a non-tender, ulcerated plaque over the hard palate measuring 5 cm × 3.5 cm, which extended to the upper labial mucosa. The surface was irregular, with a "cobblestoned" appearance [Figure 1a]. On palpation, there was no bleeding or induration at the base. A lymph node was enlarged at the right submandibular region. It was mobile, firm and measured 1.5 cm in diameter. There was no warmth, erythema or tenderness over the lymph node. The patient had a BCG vaccination scar. The systemic examination revealed no obvious abnormalities. The patient was investigated with the differential diagnoses of Wegener's granulomatosis, squamous cell carcinoma, deep fungal infection, pyostomatitis vegetans, Crohn's disease and tuberculosis. The laboratory findings were within normal limits, except for an elevated erythrocyte sedimentation rate of 86 mm/hour. The c-ANCA and HIV antibody tests were negative. The panoramic radiograph of the maxillofacial region was normal. Two biopsies from the edge of the ulcer showed mixed cell infiltrates while the third biopsy from the edge of the ulcer on the anterior portion of hard palate revealed epithelioid cell granulomas with no acid fast bacilli [Figure 2]. Fine needle aspiration cytology from the right submandibular node showed a granulomatous infiltrate. The chest X-ray showed patchy opacities in the upper lobes of lungs. Computed tomography scan revealed nodular opacities with areas of cavitation in the upper lobes of the lungs and diffuse circumferential thickening of the cecum, ascending colon and hepatic flexure extending to the terminal ileum [Figure 3]. Biopsies from the lung and colon showed epithelioid cell granulomas with areas of necrosis [Figure 4]. Tissue cultures for bacteria, mycobacteria and fungus were negative. The biopsies were subjected to a polymerase chain reaction to detect mycobacteria, which was negative. The tuberculin skin test was strongly positive (20 mm × 25 mm). A provisional diagnosis of tuberculosis involving the intestines, lungs and oral cavity was made, and antitubercular therapy was started. There was significant improvement in the ulceration and induration within a month of treatment, thereby confirming our diagnosis [Figure 1b].

Oral tuberculosis can be either primary or secondary. It is quite uncommon with an incidence of only 0.1–0.4%.[1,2] It typically occurs in the setting of immunosuppression. Primary oral tuberculosis usually affects children, while secondary oral involvement usually occurs in the middle and older age groups.[3,4] The tongue is most commonly affected, followed by the palate, buccal mucosa and lips. The salivary glands, tonsils and mandibular ridge are less involved.[5] The oral manifestations of tuberculosis are varied and include ulcers, nodules, fissures and osteomyelitis of the jaw.[6] Painless, non-healing oral ulcers with irregular edges and a minimally indurated base are the most common finding, as in our case. However, such a clinical

Figure 1: (a) Baseline photograph showing ulceration of the hard palate with areas of necrotic slough, labial hypertrophy and loosening of the upper second incisor. (b) Complete resolution of the ulcer and labial hypertrophy four weeks after initiation of antitubercular treatment

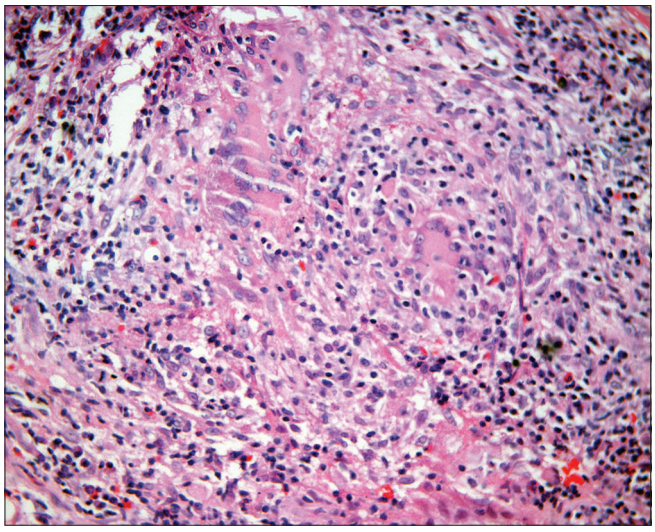

Figure 2: Oral mucosal biopsy showing dense dermal mixed cell infiltrate of lymphocytes, plasma cells, histiocytes and epithelioid cells along with Langhans giant cells (H and E, ×400)

picture can also be seen in syphilis, Wegener's granulomatosis, histoplasmosis, actinomycosis and squamous cell carcinoma. Orificial tuberculosis presents as multiple, small, superficial and painful ulcers in the setting of immunosuppression. Numerous bacilli are found on Ziehl–Neelsen staining. We did not consider this diagnosis in our patient as the ulcer was painless and he was immunocompetent.

Repeated biopsies may be needed for the diagnosis of in tuberculosis. It has been reported that a single biopsy from the oral mucosa may not show characteristic findings, especially in early disease.[7] Attempts to isolate the organism from oral mucosal biopsies usually have a low yield.[1,8] In our case, only the third biopsy revealed epithelioid cell granulomas. The inability to detect the organism in the lungs, oral cavity or gastrointestinal tract could be explained by the low sensitivity of microscopy in patients with less advanced disease.[9] Taken together, sensitive broth-based culture media for *Mycobacterium tuberculosis* and nucleic acid amplification tests (like polymerase chain reaction) help to detect 95–98% of multibacillary cases, and 48–53% of paucibacillary cases. However, bacteriological confirmation is still not achieved in 10–20% of cases, and in these cases the diagnosis is based solely on the clinical or radiological improvement with treatment.[10,11]

Incipient tuberculosis is a type of well-contained asymptomatic tuberculosis in apparently immunocompetent individuals. It shows well-formed granulomas and lack of bacilli due to the good immune status of the host. It is distinguished from latent tuberculosis on the basis of radiological evidence of disease and a high risk of

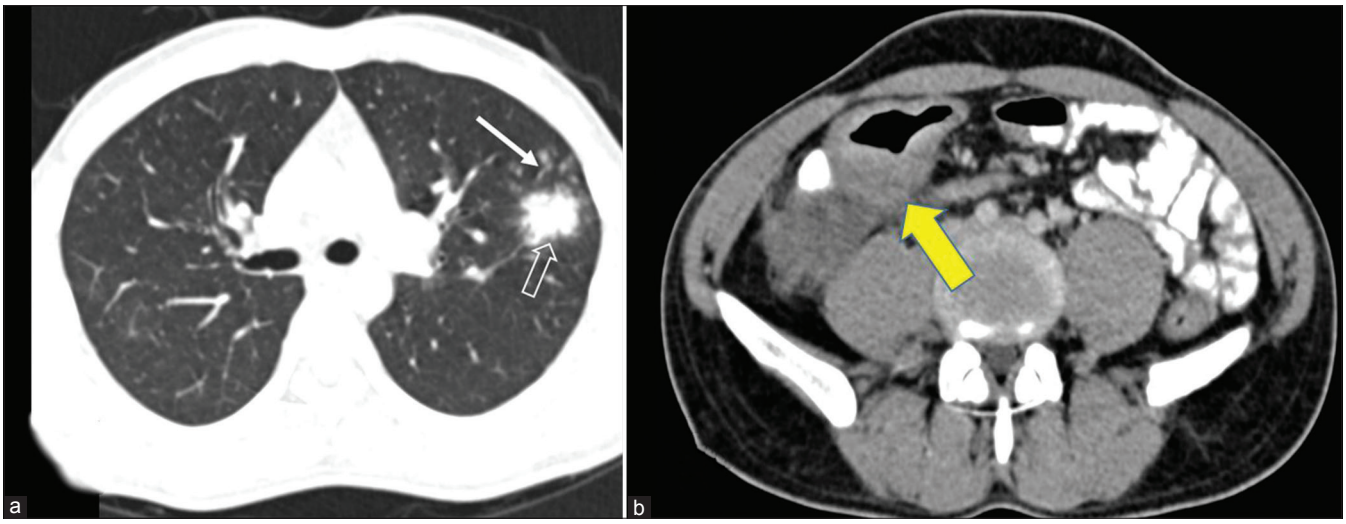

Figure 3: (a) Contrast-enhanced computed tomography scan of the chest showing an area of parenchymal infiltration in the left lobe (outlined arrow) and surrounding multiple centrilobular nodules (solid arrow). (b) Thickening of the ileocecal junction (yellow arrow) with a few enlarged mesenteric nodes. These features are consistent with active tuberculosis

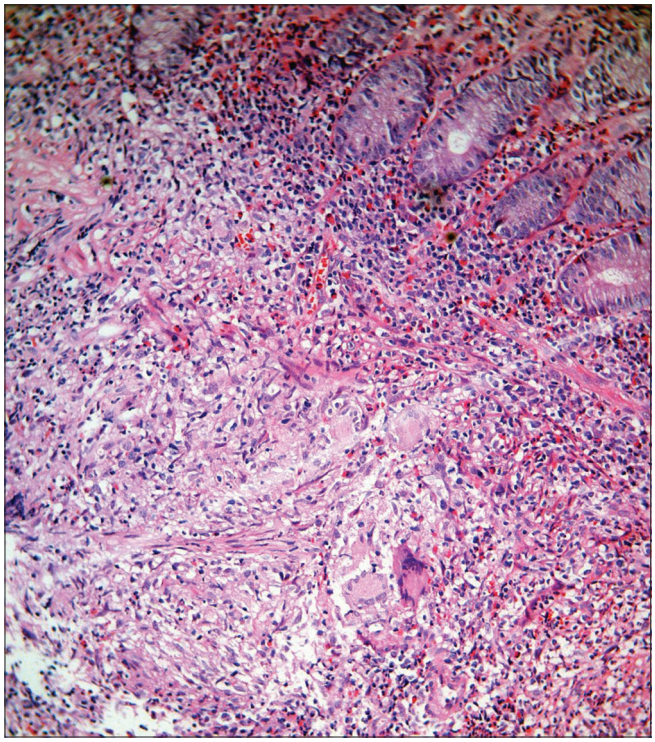

Figure 4: Dense infiltrate of epithelioid cells, Langhans giant cells, eosinophils and neutrophils in the submucosa of the colon (H and E, ×400)

progression in incipient tuberculosis.[12] Asymptomatic pulmonary and intestinal tuberculosis have been described in isolation.[13,14] Our patient may be a case of incipient or early tuberculosis which was detected because of the oral ulcer, like the asymptomatic cases of systemic tuberculosis described previously. The diagnosis of tuberculosis was confirmed on the basis of good response to antitubercular treatment.

We report this case due to its unusual presentation. Non-healing oral ulcers were the first presentation of intestinal and pulmonary tuberculosis in an apparently healthy, immunocompetent man. A search for an underlying focus of tuberculosis should be made in case of non-healing oral ulcers, especially in endemic countries.

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Conflicts of interest
There are no conflicts of interest.

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