

Asymptomatic "Bump" on Dorsal Tongue

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The following Case Challenge is provided in conjunction with the UT Health San Antonio School of Dentistry faculty.

A 33-year-old male presents with an asymptomatic "bump" on the dorsal tongue.

After you have finished reviewing the available diagnostic information, make the diagnosis.

Diagnostic Information

History of Present Illness

Rajish is a 33- year-old software engineer who recently immigrated to the United States. He presents to your office for evaluation of a "bump" on his tongue. He first noticed the lesion approximately 8 months ago and relates some sensitivity when eating spicy foods. Otherwise, the lesion is asymptomatic. His last visit to a dentist was 2 years ago in India.

Medical History

- Adverse drug effects: sulfa drugs (erythema multiforme reaction associated with prior Septra exposure)
- Medications: naproxen as needed for shoulder soreness
- Pertinent medical history: osteoarthritis, prior BCG vaccination (recently completed a 9 month regimen of prophylactic Isoniazid)
- Pertinent family history: paternal fatal MI age 65 (long-term smoker), maternal DM type 2 managed with diet. Siblings are healthy.
- Social history: denies tobacco or alcohol exposure and denies recreational drug exposure

Clinical Findings

Extraoral examination reveals normal TMJ function, no facial muscle tenderness, and no cervical lymphadenopathy. Intraoral examination reveals a well-defined, elliptical, pink-colored plaque (~4 cm x 5 cm) on the left anterior-dorsal aspect of the tongue. The central aspect of the lesion exhibits a ring of erythema with a small, shallow, linear-shaped ulceration (Figure 1). There is no induration or discomfort noted on palpation. The remaining oral mucosal tissues are within normal limits. An incisional biopsy is performed and the tissue submitted for histopathologic examination.

Histopathologic Findings

The tongue biopsy shows an inflamed mucosal soft tissue fragment consisting of stratified squamous surface epithelium with underlying fibrovascular connective tissue and skeletal muscle. The superficial interface inflammatory infiltrate consists predominantly of small lymphocytes and histiocytes. The reactive surface epithelium displays hyperplasia with elongated ragged rete ridges, basal dissolution,



Figure 1. Pink-colored plaque on the left anterior-dorsal tongue.



Figure 2. Low power histologic image of a mucosal soft tissue fragment exhibiting an interface chronic inflammatory infiltrate. The stratified squamous surface epithelium is hyperplastic and hyperkeratotic.



Figure 3. High power histologic image showing the interface lymphocytic infiltrate with basal epithelial dissolution, lymphocytic exocytosis, and focal necrotic epithelial cells.

lymphocytic exocytosis, scattered necrotic keratinocytes, basement membrane thickening, and hyperkeratosis (Figures 3-4). Direct immunofluorescence (DIF) shows shaggy basement membrane zone fibrin deposition. IgG, IgA, IgM, and C3 stains are negative.

Select Diagnosis

Can you make the diagnosis A 33-year-old male presents with an asymptomatic "bump" on the dorsal tongue.



Select the Correct Diagnosis

- A. Lichen planus
- B. Squamous cell carcinoma
- C. Tuberculosis
- D. Benign migratory glossitis

Lichen planus

Choice A. Congratulations! You are correct.

Oral lichen planus (OLP) is a common entity affecting up to 2% of the adult population and a distinct female predilection is noted.^{1,2} The etiology is thought to be a T cell mediated immunologic abnormality. Both cutaneous and mucosal tissues may be affected. Six variants of OLP are generally recognized: 1) reticular, 2) papular, 3) plague, 4) atrophic, 5) erosive, and 6) bullous.³ Patients may present with one distinct variant or a blend of several variants at a time. The reticular form is the most readily recognized oral manifestation and presents as white lacey lines (Wickham striae) and hyperkeratotic papules and plaques. The most commonly affected sites are the buccal mucosa, tongue, and gingiva and a symmetrical bilateral distribution is typically observed.¹ An estimated 10% of patients manifest gingival OLP with no other oral sites affected. Complaints of pain, burning, bleeding and sensitivity are usually associated with erythematous and erosive lesions.³ Histopathologic examination reveals hyperkeratotic to ulcerated surface epithelium and underlying connective tissue. Marked basilar dissolution, necrotic keratinocytes, and saw-tooth rete pegs are noted. The underlying connective tissue contains a superficial band-like chronic inflammatory infiltrate. Symptomatic cases are treated with topical corticosteroids. The long-term prognosis is good but periodic symptomatic recurrences are common. The present case likely represents an unusual localized plaque presentation of OLP isolated to the dorsal tongue.

Squamous cell carcinoma

Choice B. Sorry, this is not the correct diagnosis.

Squamous cell carcinoma is the most common primary malignancy of the oral mucosa.¹ The most common intraoral locations for squamous cell carcinoma are the posterior ventral-lateral tongue and the floor of the mouth. The oropharyngeal area (base of tongue, tonsils, soft palate, and pharyngeal wall) are also common sites of involvement. There is an approximate 3:1 male to female ratio and major contributing factors include tobacco, alcohol exposure, and chronic HPV infection, although other less common risks factors have been identified. The most frequently implicated precursor disorders are leukoplakia and erythroplakia.⁵ Depending on the location of the tumor, metastatic spread to adjacent ipsilateral or contralateral cervical lymph nodes may occur. Metastatic spread is more common in tumors located in the posterior regions of the oral cavity. Histopathologic examination reveals dysplastic surface epithelium exhibiting transition to an infiltrating malignant epithelial neoplasm. The malignant epithelial cells demonstrate nuclear enlargement and pleomorphism, nuclear hyperchromaticity, atypical mitotic figures, and individual cell keratinization. Infiltration into striated muscle, vascular channels, and nerve bundles often occurs.¹ Treatment consists of a combination of wide surgical excision and chemoradiation therapy. The prognosis is dependent upon the initial stage of the disease. The histopathologic findings in this case do not support this diagnosis.

Please re-evaluate the information about this case.

Tuberculosis

Choice C. Sorry, this is not the correct diagnosis.

The most common oral manifestation of tuberculosis is an ulcer and the tongue is the most frequently affected site. Tuberculous ulcers are persistent, typically last longer than 3 weeks, and may be superficial or deep in appearance.⁶ Most cases present as a solitary ulcer with an indurated ill-defined margin and a necrotic base, often with a grey or yellow slough. Histopathologic examination reveals a granulomatous inflammatory infiltration composed of epithelioid histiocytes, scattered Langhans giant cells, and lymphocytes.¹ Central foci of caseous necrosis may be observed. Mycobacteria are demonstrated with special histochemical stains. Tuberculosis is treated with intensive multiple agent anti-tuberculous drugs and close follow-up examinations are necessary to ensure compliance.⁶ The histopathologic findings in this case do not support this diagnosis.

Please re-evaluate the information about this case.

Benign migratory glossitis

Choice D. Sorry, this is not the correct diagnosis.

Benign migratory glossitis (BMG), also known as geographic tongue, is a common idiopathic, inflammatory condition.^{1,7,8} BMG is more frequently observed in patients with psoriasis, leading some to contend BMG is an oral manifestation of psoriasis. Clinical characteristics include an annular or serpiginous arrangement of raised, hyperkeratotic borders surrounding smooth, atrophic depapillated patches. The depapillated areas represent loss of the filiform papilla. BMG waxes and wanes and frequently shifts or migrates position. The most commonly affected site is the dorsolateral aspect of the tongue. BMG is often asymptomatic, but some patients experience a burning pain or increased sensitivity to foods. Histopathologic findings include surface epithelium containing an acute inflammatory infiltrate, epithelial edema, and superficial neutrophilic microabscesses.⁸ The surface epithelium is often covered by a thickened layer of parakeratin, accounting for the white peripheral appearance of the lesions seen clinically. The rete pegs are elongated and interconnecting. Similar histopathologic findings are seen in psoriasis. Since BMG is often asymptomatic, treatment is usually not necessary. If lesions are symptomatic, topical corticosteroids are appropriate. The long-term prognosis is good. The histopathologic and clinical findings in this case do not support this diagnosis.

Please re-evaluate the information about this case.

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