## Incidental Keratosis with Ulceration Noted in Patient with Oral Lichen Planus

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

A 82-year-female presents for a routine check-up and evaluation of her oral lichen planus.

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

#### **Diagnostic Information**

#### **History of Present Illness**

Ms. Fernandez is an 82-year-old Argentinian female who presents for her routine 6 month check-up. She relates no specific complaints. She has been successfully using a topical steroid rinse (dexamethasone 0.5g / 5mL) 2-3 times per day as needed to control her oral lichen planus, which was diagnosed 5 years ago. A review of her medical history reveals:

#### **Medical History**

- Adverse drug effects: none
- Medications: Tramadol/APAP, Lovastatin, benazepril, Bayer ASA, Caltrate
- Pertinent medical history: hypertension; hypercholesterolemia; osteoarthritis with chronic back pain
- Pertinent family history: paternal died age 98 of "old age"; maternal - diabetes type 2, breast cancer, died at 62 from a myocardial infarction; no siblings
- Social history: pt. denies any smoking, no ETOH, no recreational drug use

#### **Clinical Findings**

Extraoral examination: (+) crepitus on left TMJ, no limitations or pain on opening, no lymphadenopathy. Intraoral examination: an irregular-shaped area of thick keratosis surrounding a granular appearing erosion is present on the lower left alveolar ridge in the area of #17 (Figure 1). Gentle palpation of this area provokes sponateous bleeding with no discomfort. A panorex is ordered and reveals non-restorable #2 and #3 and a supererupted #15, but no obvious osseous pathoses affecting the lower mandibular region (Figure 2). An incisional biopsy is performed in the lower left alveolar ridge area and the tissue is submitted for histopathologic examination.



**Figure 1.** Asymptomatic, granular ulceration with associated keratosis.



**Figure 2.** Panorex reveals supererupted and carious #s 2, 3, and 15 and no obvious osseous pathosis on mandible.

#### **Histopathologic Findings**

The histologic sections of the incisional biopsy show infiltrating cords and islands of atypical squamous epithelium arising from dysplastic surface mucosa. There is a supporting fibrovascular connective tissue stroma with lymphocytic interface chronic inflammatory infiltrate. The epithelial cells displays pleomorphic round to oval nuclei with finely dispersed to vesicular chromatin, prominent nucleoli, increased nuclear to cytoplasmic ratio and pink focally dyskeratotic cytoplasm. There are numerous abnormal mitotic figures and focal single apoptotic cells.



**Figure 3.** Low power histologic image showing invasive cords and islands of squamous epithelium extending into chronically a inflamed fibrovascular connective tissue stroma. The surface mucosa is dysplastic and parakeratotic.



**Figure 4.** High power histologic image showing atypical epithelial cells with pleomorphic round to oval nuclei, finely dispersed to vesicular chromatin, prominent nucleoli, increased nuclear to cytoplasmic ratio, and pink focally dyskeratotic cytoplasm. There are interspersed abnormal mitotic figures and single apoptotic cells.

### **Select Diagnosis**

**Can you make the diagnosis** Incidental keratosis with ulceration noted in patient with oral lichen planus.



# **Select the Correct Diagnosis** A. Squamous cell carcinoma

- B. Lichen planus flare-up
- C. Candidiasis
- D. Actinomycosis

#### Squamous cell carcinoma

#### Choice A. Congratulations! You are correct.

During 2017 it is estimated that over 49,000 individuals in the United States will be diagnosed with carcinoma involving the oral cavity and pharynx.<sup>1</sup> Eighty nine percent of these cancers will be of the squamous cell type.<sup>2</sup> Most oral cavity and pharynx carcinomas arise from nonkeratinized mucosa (e.g., the freely moveable, nonattached mucosa). The most frequently implicated precursor disorders are leukoplakia and erythroplakia.<sup>34</sup> The typical presentation is that of a persistent mass, nodule, or indurated ulcer. Early disease is often asymptomatic. Symptoms of more advanced disease include pain, dysphagia, otitis, weight loss, fixation, and trismus. The findings of paresthesia and anesthesia, in the absence of a history of trauma, strongly suggest an invasive malignancy.<sup>2</sup> Risk factors for oral cavity and pharynx cancers include: tobacco, alcohol, ultraviolet radiation, human papillomavirus, immunosuppression, areca nut (betel nut or guid), and maté. Histologic findings are characterized by invasive islands or sheets of squamous cells in the underlying connective tissues. Perineural and vascular invasion may occur and the invading epithelium often induces a strong inflammatory response.⁵ Treatment of squamous cell carcinoma is often complex and multifaceted and is determined following thorough clinical staging. Tumor stage is the best predictor of long-term prognosis.<sup>6</sup> Surgery is the primary mode of therapy but radiation therapy and chemotherapy may be required to address advanced tumors. Radical neck dissection may or may not be necessary.

#### Lichen planus flare-up

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

Oral lichen planus (OLP) is a common entity affecting up to 2% of the adult population and a distinct female predilection is noted.<sup>5,6</sup> 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) plaque, 4) atrophic, 5) erosive, and 6) bullous.<sup>7</sup> Any mucosal surface may be affected and patients may present with one distinct variant or a blend of several variants at a time.<sup>8</sup> The reticular form is the most readily recognized oral manifestation and presents as white lacey lines (Wickham striae) along with hyperkeratotic papules and plaques. The most commonly affected sites are the buccal mucosa, tongue, and gingiva and a symmetrical bilateral distribution is typically observed.<sup>6,8</sup> 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.<sup>7,8</sup> 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 of OLP is good but periodic symptomatic recurrences are common and routine monitoring of OLP is necessary due to the slightly increased risk of dysplasia and/or malignant transformation, estimated at 0.5%.<sup>4</sup> The histopathologic findings in this case do not support this diagnosis.

Please re-evaluate the information about this case.

#### Candidiasis

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

Candidiasis is the most common opportunistic infection to affect the oral mucosa.<sup>9</sup> Risk factors for the development of oral candidiasis include: alterations in saliva quantity and/or quality, medications, dental prostheses, nutritional deficiencies, and immunosuppressive disorders.<sup>8</sup> Three characteristic presentations of intraoral candidiasis are recognized.<sup>8</sup> Pseudomembranous candidiasis presents as white or yellow superficial plaques that can be easily removed to often reveal an erythematous underlying mucosa. Erythematous candidiasis presents as multiple red patches often affecting the palate or dorsal tongue. Chronic hyperplastic candidiasis presents as a nonremovable white plaque typically on the buccal mucosa, commissure, tongue, or palate. Any form of candidiasis may be asymptomatic or associated with burning, tingling, itching, or alterations in taste.<sup>8,9</sup> The characteristic histologic findings of candidiasis include hyperparakeratosis with embedded candida pseudohyphae, exocytosis, and elongated epithelial rete ridges.<sup>5</sup> Candidiasis is treated with topical antifungal agents and the prognosis is good. The histopathologic findings in this case do not support this diagnosis.

Please re-evaluate the information about this case.

#### Actinomycosis

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

Actinomycosis is an unusual opportunistic bacterial infection caused primarily by *Actinomyces israelii*.<sup>10</sup> Proposed prerequisites for infection include periodontal disease, dental abscess, tooth extraction and/or jaw surgery, tonsillitis, or an inner ear infection. Once established, the infection tends to be chronic but gradually progresses through the tissues causing swelling and inflammation, abscess formation, sinus tracts, and scar formation. Oral cavity involvement typically presents as a lumpy, tender swelling and sinus tract, most often affecting the mandible.<sup>6,10</sup> Drainage of purulent exudate containing colonies of bacteria "sulfur granules" is characteristic. Histologic findings reveal a fibrotic encasement of chronically inflamed granulation tissue surrounding a dense accumulation of polymorphonuclear leukocytes.<sup>5</sup> Colonies of the organisms present as club-shaped filaments in a radiating rosette pattern. Therapy consists of surgical debridement or drainage and parenteral penicillin for two to six weeks, often followed by oral penicillin for up to a year.<sup>10</sup> The prognosis is generally good. The histopathologic findings in this case do not support this diagnosis.

Please re-evaluate the information about this case.

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