

# Diagnostic Discussion

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A 44-year-old female was referred to Dr. **Daniel Lauer**, a periodontist in Palm Beach Gardens, Fla., for evaluation of a mildly symptomatic lesion on the palate (**Fig. 1**) by her dentist, Dr. Jimmy Chen, also of Palm Beach Gardens. The patient reported a history of food-related trauma to her palate four to six weeks before the lesion appeared. She complained of mild irritation in the area, especially on food consumption. Her medical history was non-contributory and she reports no prior history of similar lesions. She is a non-smoker. The lesion appeared slightly “bumpy” on the surface and was slightly reddish- to flesh-colored. It measured approximately 1 x 0.4 cm and was roughly rectangular in shape. Slight erythema was noted around the lesion. The lesion was entirely excised and submitted to the University of Florida College of Dentistry Oral Pathology Biopsy Service. The biopsy showed a papillary proliferation of epithelium with significantly thickened keratin with elongated rete ridges and foamy cells in the connective tissue (**Fig. 2**).

## Question:

Which of the following is the most likely diagnosis?

- A. Verrucous Leukoplakia
- B. Verruca Vulgaris
- C. Condyloma Acuminatum (venereal wart)
- D. Focal Epithelial Hyperplasia (Heck's Disease)
- E. Verruciform Xanthoma



Fig. 1

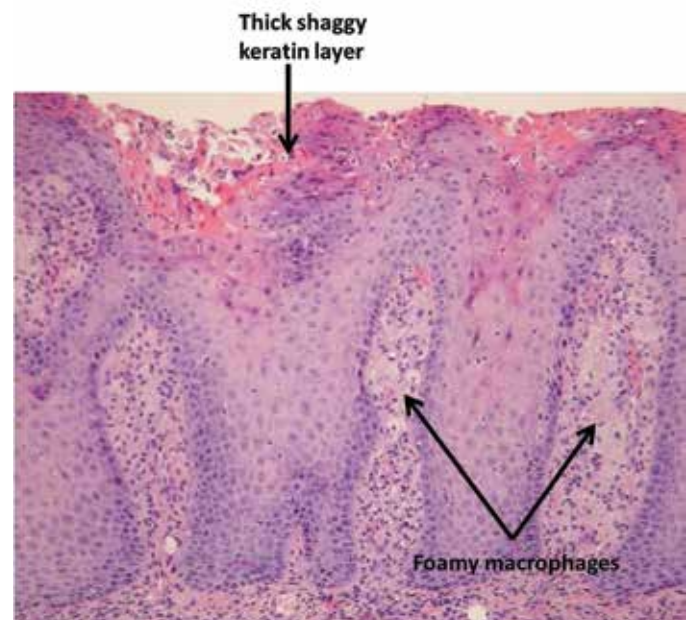


Fig. 2

Please see DIAGNOSTIC, 50

DIAGNOSTIC from 49

## Diagnostic Discussion

### A. Verrucous Leukoplakia

*Incorrect.* An excellent choice! This entity is a definite possibility given the history of trauma. These lesions are a variation of the standard “leukoplakia,” or white patch, and are typically covered by a significantly thickened, somewhat “bumpy” or verrucoid layer of ortho- or parakeratin. The most important distinction from this case is the color of the lesion; verrucous or verrucoid leukoplakia tends to be white in color due to the thick keratin layer, and not mucosal or normal colored or reddish as seen here. Clinically, these lesions feel “bumpy” on palpation and appear white like other leukoplakic lesions. Verrucous leukoplakia tends to be premalignant in nature and may be reactive, typically associated with chronic trauma. Traumatic verrucous keratosis is often seen on the mandibular retromolar pad areas and on the edentulous alveolar ridge, either where the soft tissue bears the brunt of mastication or under a denture. In this case, there was a history of trauma, making this a very possible consideration in the differential diagnosis. Generally, verrucous leukoplakia is seen in an older age group and is usually completely asymptomatic. Microscopically, though the thickened keratin layer is seen in both verrucous leukoplakia and the actual diagnostic entity, foamy macrophages are not seen with verrucous leukoplakia. When seen on high-risk locations, verrucous leukoplakias are worrisome and usually the recommended therapy is complete excision with close clinical follow-up.

### B. Verruca Vulgaris

*Incorrect.* Again a very good guess! Verrucas are benign, hyperplastic growths of surface epithelium associ-

ated with the human papilloma virus (HPV). Verruca vulgaris is associated with HPV, HPV-2, HPV-4 and HPV-40. However, verrucas are typically small lesions measuring less than 1 cm in size, and oral lesions almost always appear to be intensely white with finger-like projections rising above the surrounding mucosa. In addition, verruca vulgaris is typically pedunculated and not sessile, as seen here. Verruca vulgaris is contagious and can spread to other parts of a person's skin or mucous membranes by way of autoinoculation. It is uncommon on the oral mucosa but extremely common on the skin. These are frequently seen in children on the skin of the hands. The oral lesions are usually located on the vermillion border of the lips, labial mucosa or anterior tongue. They present as painless, raised papillary lesions and may occur in clusters, especially on the skin. Sites of abrasion on the skin, such as elbows or knees, often are affected. The recommended treatment for oral lesions is surgical excision. The majority of the skin lesions disappear spontaneously within two years, especially in children.

### C. Condyloma Acuminatum (venereal wart)

*Incorrect.* Excellent guess! Condylomas are papillary growths that can occur anywhere on the oral mucosa. As in this case, they can be sessile with short fronds, or blunted or short elevations somewhat similar to the present case. Condylomas are larger than verruca and average about 1.5-2 cm. These are usually reported in young individuals less than 25 years of age, but people of all ages are susceptible. Typically, it appears as a sessile, pink, well-demarcated, nontender exophytic mass with short blunted surface projections. Condylomas, also called venereal warts, are one of the most common sexually transmitted diseases (STDs), representing about 20 percent of all STDs reported in clinics. These are most often found on the external genitalia, and are seen in the oral mucosa of sexually active individuals. Oral lesions

are mostly reported on the lingual frenum, soft palate and the labial mucosa, supposedly related to sites of abrasion during oro-genital contact. Most importantly, condylomas are typically clustered with multiple lesions or multifocal distribution, though isolated and solitary lesions are occasionally noted. These are associated with human papilloma virus (HPV) subtypes 2, 6, 11, 53 and 54, and are usually detected in the lesion. The virus infects the epithelial cells, multiplies and induces the epithelium to proliferate. Oral lesions as large as 3-4 cm have been reported. They are usually treated by conservative surgical excision. Laser ablation also has been used, but this treatment has raised questions as to the airborne spread of HPV through the aerosolized microdroplets created by the vaporization of lesional tissues. Even after excision they have been known to recur in crops. Another important distinction point between this entity and the correct diagnosis is microscopic. The presence of foamy macrophages rules out the diagnosis of condylomas.

### D. Focal Epithelial Hyperplasia (Heck's Disease)

*Incorrect.* Though these are papillary lesions, focal epithelial hyperplasia (FEH), also known as Heck's Disease, are classically multifocal papillary lesions. This is an uncommon disease affecting the oral mucosa and associated with HPV-13 (rarely HPV-32). These are often reported in children of Native American, Eskimo or African descent. Since it is almost always reported in childhood, and typically resolves and spontaneously regresses as the child ages, this diagnosis should not be considered for isolated papillary lesions in adults without additional history. Rare but usually persistent cases of FEH have been reported in young and middle aged adults. It appears as multiple soft, nontender, flattened or rounded mucosal or normal colored papules, which are usually clustered. Lesions typically occur

on the labial, buccal and lingual mucosa. They also may be scattered, pale and rarely white. Individual lesions are small, discrete and well-demarcated, but they frequently cluster so closely together that the entire area takes on a cobblestone or fissured appearance. Spontaneous regression of lesions has been reported after months or years, and is inferred from the rarity of the disease in adults. Microscopic examination of the lesion, similar to the other entities discussed here, does not exhibit foamy macrophages. Conservative surgical incision may be performed for diagnosis or aesthetic purposes, or for lesion subjected to recurrent trauma.

### E. Verruciform Xanthoma

*Correct!* Verruciform xanthomas are relatively uncommon lesions of the oral mucosa. They occur most frequently on the gingivae, especially the marginal gingiva, the alveolar mucosa and the palate, but can be found on any masticatory surface. They are most common in Caucasians in the age group of this patient (40-60 years of age). A strong female predilection is reported, which is supported in this case. They also have been described on the skin, esophagus and genitalia, although this lesion is much more common in the mouth. Unlike other papillary growths, it is not associated with HPV. Only rare examples of multiple lesions have been reported. An immune dysfunction has also been postulated for the etiology. Unlike xanthomas of the skin, verruciform xanthomas appear to have no association with diabetes, hyperlipidemia, or any other

metabolic or systemic disease. The key to the diagnosis is recognizing the papillary surface that is characteristic of these lesions. These lesions also can be umbilicated with a cratered center but they usually are papillary within the depressed center very similar to this case. They also have a characteristic white, yellow-white, or reddish-orange color (seen in the present case). This color is thought to reflect collections of large numbers of lipid-laden or foamy macrophages (**Fig. 2**) found ubiquitously in this lesion. Hyperkeratosis, elongated rete ridges and collections of these foamy macrophages are all required for the histologic diagnosis of this lesion. The papillary surface (verrucous) and presence of abundant lipid-containing foam cells (xanthoma) give this lesion its name. The lesions are totally innocuous and are thought to be associated with trauma and/or chronic irritation, which was part of the history in this case. They are treated by simple excision and usually do not recur.

### Useful References

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*Diagnostic Discussion is contributed by UFCD professors, Drs. Nadim Islam, Indraneel Bhattacharyya and Don Cohen, and provides insight and feedback on common, important, new and challenging oral diseases.*

*The dental professors operate a large, multi-state biopsy service. The column's case studies originate from the more than 10,000 specimens the service receives every year from all over the United States.*

*Clinicians are invited to submit cases from their own practices. Cases may*

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