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Background

- Squamous papilloma accounts for 8% of oral soft tissue tumors among the pediatric population and is associated with infection by human papillomavirus (HPV).¹
- While HPV is considered the most common sexually transmitted infection, it may be transmitted non-sexually through various routes.
- Management of oral HPV-positive papillomas is warranted to decrease transmissibility and remove impairing lesions.
- Recurrence after surgical excision may occur due to incomplete removal of infected epithelium or autoinoculation from other sites.
- Other treatment methods include CO₂ laser ablation, electrosurgery, and cryotherapy,² though there is little research on the efficacy of these.

Objectives

- To address the diagnostic dilemma of a case of recurrent, diffuse HPV-positive oral squamous papillomas of unknown etiology in an adolescent female.
- To discuss the management of oral papillomas in adolescent patients and discuss our multimodality approach to treatment in this patient.

Case Report

- A healthy 13-year-old female presented to Penn State Otolaryngology Head and Neck Clinic with a 9-month history of intraoral papillomas.
- Past medical history was significant for multiple palmar verrucae and frequent nail-biting and denied any sexual contact or activity.
- Representative pictures of the lesions are shown in Figure 1.
- Biopsies of the lesions were positive for HPV types 6 and 11.
- Operative intervention was pursued with multimodality approach of surgical resection and CO₂ laser ablation.
- Patient developed recurrence after one year (see Figure 2).
- The plan for management was surgical intervention with CO₂ laser ablation, but due to the COVID-19 pandemic, the patient was unfortunately lost to follow up.



Figure 1. Demonstrates the patient's initial physical examination at our facility and reveals a cluster of papillomas of the intraoral right commissure.

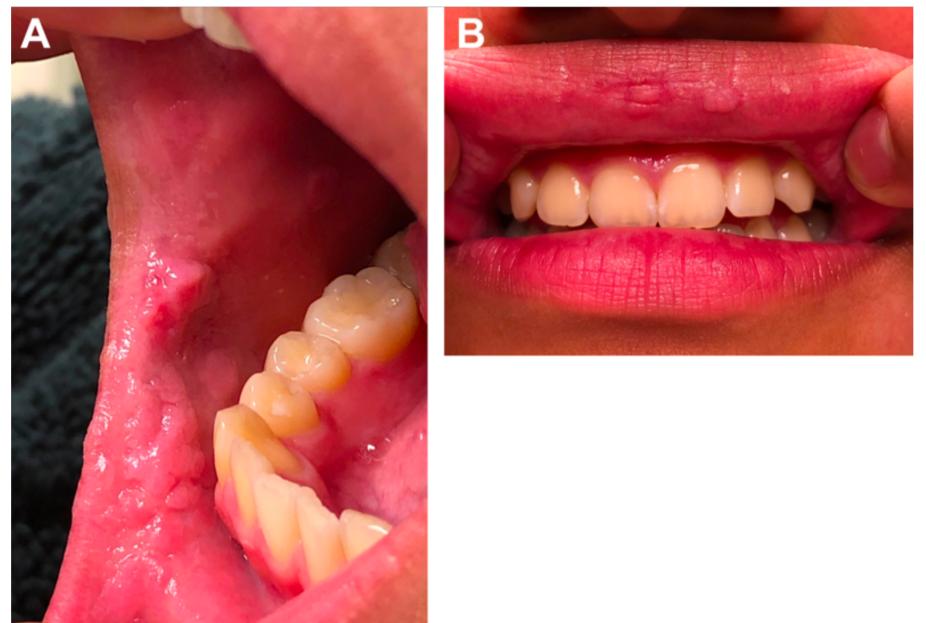


Figure 2 (a). Demonstrates the patient's physical examination 1 year after surgical intervention; reveals recurrence of papillomas of the intraoral right commissure.

Figure 2 (b). Demonstrates the patient's physical examination 1 year after surgical intervention; reveals appearance of new papillomas of the red upper lip.

Discussion

Etiology:

- There is sparse literature examining the natural history of HPV infection among sexually-unexposed adolescents.
- While oral HPV is thought to be transmitted via sexual contact of the genitalia to oral mucosa, or non-sexual transmission via close contacts,³ transmission of HPV infection from warts on hands to the anogenital area is reported, suggesting alternate modes of transmission,⁴ and there was no history of condyloma among household contacts.
- We hypothesize autoinoculation via hand-to-mouth transmission from the patient's cutaneous verrucae of her fingers given her history of nail biting.

Management:

- Our case utilized a multimodality approach with both wide local excision and CO₂ laser ablation but demonstrated multiple recurrences.
- The literature indicates similar rates of recurrence for surgical excision and CO₂ laser ablation of oral squamous papillomas (10% and 14%, respectively).⁵
- CO₂ ablation has advantages of greater preservation of healthy oral mucosa and improved hemostasis; however, scarring may occur and clearance of papillomas may be difficult.^{6,7}
- The goal of treatment is to remove all papillomas while maximizing preservation of healthy tissue, but this may come at the cost of lesion recurrence.⁶

Conclusions

- We hypothesize that our patient's lesions may have been a result of autoinoculation by HPV-positive skin lesions, but the exact etiology remains unknown.
- Further investigation into alternate non-sexual modes of transmission is warranted to elucidate this diagnostic dilemma.
- Future research is needed to provide an evidence basis for the management of recurrent oral papillomas.

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