

Oral Condyloma Acuminatum in a 62-Year-Old Male: A Case Report with Histopathological Correlation

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Abstract

Condyloma acuminatum is a sexually transmitted infection caused by the Human Papillomavirus (HPV), most commonly subtypes 6 and 11. Oral condylomata are uncommon and are frequently misdiagnosed clinically as squamous papilloma, fibroma, or verruca vulgaris. We report a case of oral condyloma acuminatum in a 62-year-old male patient who presented with a single sessile lesion in the right commissure region, with a history of smoking and alcohol use. An excisional biopsy was performed and histopathological examination confirmed the diagnosis of condyloma acuminatum based on characteristic microscopic features including koilocytic changes, hyperparakeratinization, and broad-based exophytic epithelial proliferation. This case highlights the importance of biopsy and histopathological evaluation in all oral mucosal lesions, especially in older patients with risk factors, and underscores the need for awareness of HPV-related oral lesions in dental practice.

Keywords: Condyloma acuminatum; Human Papillomavirus; Oral lesion; Koilocytes; Commissure; Sexually transmitted infection; Histopathology

1. Introduction

Condyloma acuminatum, commonly referred to as a genital wart, is a benign epithelial neoplasm caused by Human Papillomavirus (HPV). It is among the most prevalent sexually transmitted infections worldwide. While the anogenital region is the primary site of involvement, oral condylomata account for a small but significant subset of HPV-associated oral lesions. The oral cavity can be involved through orogenital sexual contact, autoinoculation, or vertical transmission.

In the oral cavity, condyloma acuminatum most commonly affects the labial mucosa, lingual frenum, soft palate, and commissure regions. Clinically, these lesions may be difficult to differentiate from squamous papilloma, verruca vulgaris, multifocal epithelial hyperplasia (Heck's disease), and fibroma. The definitive diagnosis relies on histopathological examination, which reveals characteristic koilocytic changes — a hallmark of HPV infection.

Oral HPV lesions in older adults carry particular significance owing to the established association of high-risk HPV subtypes (16 and 18) with oropharyngeal squamous cell carcinoma. This case report presents a 62-year-old male with a histopathologically confirmed oral condyloma acuminatum at the right commissure, discussing clinical, gross, microscopic features, and management implications.

2. Case Report

2.1 Presentation and Clinical Findings

A 62-year-old male was referred to a specialized oral surgery department for evaluation of a single, painless mass located at the right commissure of the oral mucosa. The patient's medical history was notable for long-term tobacco and alcohol consumption.

Intraoral examination identified a sessile, well-defined, whitish exophytic lesion measuring approximately 0.8 x 0.5 x 0.5 cm. The surface exhibited a characteristic pebbly or "cauliflower-like" architecture with surrounding reactive erythema. No regional lymphadenopathy was present, and a provisional clinical diagnosis of squamous papilloma or fibroma was made.

2.2 Histopathological Analysis

An excisional biopsy was performed under local anesthesia. Microscopic examination of hematoxylin and eosin (H&E) stained sections revealed:

- **Epithelial Changes:** A broad-based, exophytic lesion covered by hyperparakeratinized stratified squamous epithelium.
- **Koilocytosis:** Abundant koilocytes—cells with perinuclear halos and shrunken, hyperchromatic "raisinoid" nuclei—were identified in the superficial layers.
- **Architecture:** The surface showed blunt papillary configurations with parakeratin plugging and elongated, bulbous rete pegs.
- **Stroma:** The underlying connective tissue showed a patchy chronic inflammatory infiltrate and melanin incontinence.

A final diagnosis of oral condyloma acuminatum was established based on these characteristic features.

3. Discussion

3.1 Epidemiology and Aetiology

Condyloma acuminatum is caused primarily by the low-risk HPV subtypes 6 and 11, which account for over 90% of anogenital warts. These subtypes have low malignant potential, in contrast to high-risk subtypes 16 and 18, which are associated with oropharyngeal and cervical carcinomas. Oral condyloma is transmitted predominantly via orogenital sexual contact, autoinoculation, or, in children, perinatally.

The present case involves a 62-year-old male — an age group in whom oral HPV-related lesions are less commonly reported, with the peak incidence typically seen in the third and fourth decades of life. The patient's history of smoking and alcohol consumption is notable, as these are well-established cofactors that impair local mucosal immunity and may facilitate HPV establishment and persistence. Smoking in particular has been shown to increase the risk of oral HPV persistence and progression.

3.2 Clinical Features and Differential Diagnosis

Oral condyloma acuminatum typically presents as a single or multiple, sessile or pedunculated, pinkish-white papillary masses with a cauliflower-like surface. The commissure region, as in this case, is a recognised site of involvement. The white brush-border surface appearance observed clinically corresponds to the hyperparakeratinized epithelial surface seen histologically.

The provisional diagnosis of squamous papilloma or fibroma is a common clinical misdiagnosis, underscoring the critical role of histopathological examination in all oral mucosal lesions. The key differential diagnoses for oral condyloma acuminatum include:

1. Squamous papilloma: Also HPV-associated (subtypes 6, 11), but tends to have a narrower, pedunculated base and more finger-like projections. Koilocytes may be less prominent.
2. Verruca vulgaris: Shows more prominent hypergranulosis and inward-curving rete ridges at the periphery.
3. Multifocal epithelial hyperplasia (Heck's disease): Multiple flat lesions associated with HPV 13 and 32, more common in children and certain ethnic populations.
4. Fibroma: Non-HPV-related reactive lesion without koilocytes; sessile and smooth-surfaced, typically without surface keratinization.
5. Focal epithelial hyperplasia: Soft, multiple, sessile mucosal lesions without koilocytes.

3.3 Histopathological Features

The histological hallmark of condyloma acuminatum is the presence of koilocytes — superficial or intermediate squamous cells with a clear perinuclear halo (vacuolated cytoplasm) surrounding an eccentric, hyperchromatic, and often raisinoid nucleus. This cytopathic effect is a direct consequence of HPV viral replication. In the current case, abundant koilocytic changes were documented, confirming HPV-related cytopathic effect.

The broad-based, exophytic growth pattern with bulbous rete pegs, hyperparakeratosis, and parakeratin plugging are characteristic histological findings that distinguish condyloma acuminatum from squamous papilloma, which typically demonstrates a narrower, pedunculated base with less prominent rete peg changes. The dense chronic inflammatory infiltrate with lymphocytic transmigration and the fibrovascular core seen in this case are consistent with the reactive stromal changes expected in HPV-infected mucosa.

The presence of basal and parabasal mitotic figures and basilar hyperplasia should be noted, as these features can raise a differential consideration of dysplasia. However, in the context of abundant koilocytic changes and a broad-

based exophytic architecture without atypical mitoses or loss of polarity, these findings are consistent with HPV-induced proliferative changes rather than true epithelial dysplasia.

Additional findings including areas of haemorrhage, adipocytes, and skeletal muscle in the biopsy specimen suggest that the excision extended into deeper soft tissue, confirming adequate excision depth. Melanin incontinence, representing melanin released from damaged basal keratinocytes, has been noted in inflammatory mucosal conditions and does not alter the diagnosis.

3.4 Role of HPV and Oncogenic Risk

The majority of oral condylomata are caused by low-risk HPV types 6 and 11 and carry a low risk of malignant transformation. However, concurrent infection with high-risk HPV types cannot be excluded without HPV DNA typing or in situ hybridisation, which were not performed in this case. Given the patient's age, male sex, and history of tobacco and alcohol use — all independent risk factors for oropharyngeal malignancy — HPV genotyping would be a valuable adjunct to ensure appropriate risk stratification and follow-up.

The rising incidence of HPV-positive oropharyngeal squamous cell carcinoma, particularly in older males, reinforces the need for vigilance in patients presenting with oral HPV-related lesions. Long-term surveillance is recommended even following complete excision.

3.5 Management

The treatment of choice for oral condyloma acuminatum is surgical excision, as performed in this case. Alternative modalities include carbon dioxide laser ablation, cryotherapy, and topical agents such as podophyllin or imiquimod, although the latter two have limited application in intraoral sites. Excisional biopsy offers the advantage of simultaneous histopathological confirmation, which is essential given the clinical overlap with other benign lesions. Recurrence following surgical excision has been reported, attributed to the persistence of latent HPV in apparently normal surrounding mucosa. The patient should be counselled regarding the sexually transmitted nature of the disease, encouraged to disclose to sexual partners, and referred for genitourinary assessment. Cessation of smoking and alcohol consumption should be strongly advised as these habits may impair immune clearance of HPV and increase malignant risk.

HPV prophylactic vaccination (Gardasil-9), while most effective in unexposed individuals and commonly recommended for younger age groups, may have a role in reducing recurrence in select patients following discussion with medical colleagues. A multidisciplinary approach involving oral medicine, infectious disease, and genitourinary medicine specialists is advocated.

4. Conclusion

This case illustrates an oral condyloma acuminatum presenting atypically in an older male patient with a clinical diagnosis of squamous papilloma, highlighting the indispensable role of histopathological examination in the definitive diagnosis of oral mucosal lesions. The characteristic microscopic findings — including koilocytic changes, broad-based exophytic growth, hyperparakeratosis, and parakeratin plugging — are diagnostic of HPV-induced epithelial proliferation. Clinicians must maintain a high index of suspicion for sexually transmitted HPV infection in oral lesions of any age group and ensure appropriate histopathological workup, patient counselling, and long-term surveillance, particularly in patients with tobacco and alcohol use as cofactors for malignant progression.

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