

[DOI] 10.12016/j.issn.2096-1456.202440494

· 防治实践 ·

下颌牙龈和前庭沟疣状黄瘤2例报道及文献回顾

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【摘要】目的 探讨口腔疣状黄瘤的临床和病理特点、诊断及鉴别诊断, 为临床发现并正确诊治该病提供参考。**方法** 报道2例分别发生于下颌牙龈和前庭沟黏膜的疣状黄瘤病例, 展示两个病例的临床表现特点及病理学特征, 并结合既往文献对疣状黄瘤进行分析。**结果** 病例1为37岁女性, 发现右下后牙牙龈粉色粗糙病损1个月, 大小约14 mm × 7 mm, 质地坚韧, 无疼痛, 完善牙周基础治疗后于局麻下行病损切除术, 术后病理检查显示上皮钉突细长, 大量泡沫细胞填充于结缔组织乳头, 诊断为疣状黄瘤。病例2为36岁男性, 发现右下前牙前庭沟粉白色肿物3个月, 大小约18 mm × 10 mm, 边缘不规则, 质地中等, 无疼痛, 于局麻下行右下颌前庭沟肿物切除术, 术后病理检查见上皮不全角化, 钉突肥大伸长, 固有层乳头区可见较多泡沫细胞, 诊断为疣状黄瘤。文献复习结果表明, 疣状黄瘤发病率为0.025% ~ 0.094%, 多发于50 ~ 70岁患者, 男性发病率略高于女性, 口腔内主要好发于硬腭、牙龈等, 一般无浸润性。该病病因及发病机制尚不明确, 临床表现缺乏特异性, 故常被误诊为鳞状细胞乳头状瘤、寻常疣、尖锐湿疣、鳞状细胞癌或疣状癌等。其最终诊断依赖病理表现, 疣状黄瘤的典型特征是上皮结缔组织乳头中大量泡沫细胞聚集。**结论** 疣状黄瘤是一种罕见的口腔黏膜病变, 其临床表现缺乏特异性, 误诊率较高; 临床上需与乳头状瘤、寻常疣、尖锐湿疣、鳞状细胞癌或疣状癌等疾病进行鉴别; 最终诊断依靠病理检查; 该病的主要治疗方式为手术切除, 术后复发率低, 且恶变少见。

【关键词】 疣状黄瘤; 口腔黏膜病变; 下颌牙龈; 前庭沟; 人乳头状瘤病毒; 寻常疣; 尖锐湿疣; 鳞状细胞癌; 疣状癌

【中图分类号】 R78 **【文献标志码】** A **【文章编号】** 2096-1456(2025)04-0305-08

【引用著录格式】 杨梦馨, 湛尧, 宋治锋. 下颌牙龈和前庭沟疣状黄瘤2例报道及文献回顾[J]. 口腔疾病防治, 2025, 33(4): 305-312. doi:10.12016/j.issn.2096-1456.202440494.

Verruciform xanthoma in mandibular gingiva and vestibular sulcus: two cases report and literature review

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【Abstract】Objective To explore the clinical and pathological characteristics, diagnosis, and differential diagnosis of oral verruciform xanthoma, and to provide a reference for accurate clinical identification and treatment. **Methods** Two cases of verruciform xanthoma occurring on the gingiva and vestibular mucosa are reported. The clinical features and pathological characteristics of both cases are described in detail, and information from a literature review on verruciform xanthoma is provided. **Results** Case 1: a 37-year-old female patient presented with a pink, rough lesion on the gingiva of the right mandibular posterior teeth for one month. The lesion measured approximately 14 mm × 7 mm, and it was firm and painless. After periodontal therapy, the lesion was excised under local anesthesia. Postoperative pathological examination showed that the epithelial nail protruded and was elongated, and a large number of foam cells filled the connective tissue papilla, leading to the diagnosis of verrucous xanthoma. Case 2: a 36-year-old male patient presented with a pale pink lesion on the right lower vestibular mucosa for three months. The lesion measured approximately 18

【收稿日期】 2024-12-05; **【修回日期】** 2025-01-26

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mm × 10 mm with irregular margins, and it was firm and painless. The lesion was excised under local anesthesia, and postoperative pathological examination showed parateratosis of epithelium, hypertrophy and elongation of the nail process, and more foam cells in the lamina propria papilla area. The diagnosis was xanthoma verrucosa. The results of a literature review show that the incidence of verruciform xanthoma is 0.025%-0.094%, it primarily occurs in patients aged 50-70 years, the incidence in males is slightly higher than that in females, and it primarily occurs in areas of the oral cavity that include the hard palate and gums. It is generally non-invasive. The etiology and pathogenesis remain unclear. Clinically, verruciform xanthoma lacks specific characteristics, so these lesions are frequently misdiagnosed as other conditions, such as papilloma, common warts, condyloma acuminatum, squamous cell carcinoma, or verrucous carcinoma. The key to diagnosis lies in histopathology, with the hallmark feature being the accumulation of foam cells in the connective tissue papilla beneath the epithelium. **Conclusion** Verruciform xanthoma is a rare oral mucosal lesion with non-specific clinical manifestations and a high rate of misdiagnosis. It must be differentiated from conditions that include squamous papilloma, common warts, condyloma acuminatum, squamous cell carcinoma, and verrucous carcinoma. Definitive diagnosis depends on histopathological examination, and the primary treatment is surgical excision, with a low recurrence rate and minimal risk of malignant transformation.

【Key words】 verruciform xanthoma; oral mucosal lesions; mandibular gingiva; vestibular sulcus; human papillomavirus; common warts; condyloma acuminatum; squamous cell carcinoma; verrucous carcinoma

J Prev Treat Stomatol Dis, 2025, 33(4): 305-312.

【Competing interests】 The authors declare no competing interests.

疣状黄瘤(verruciform xanthoma)是一种罕见的良性黏膜皮肤病变,其病因和发病机制尚不明确。研究表明,疣状黄瘤在人群中的发病率仅为0.025%~0.094%,最常见于中老年人群,男性略多于女性^[1]。临床上,口腔疣状黄瘤主要表现为凸起于黏膜的单个黄白色或粉色斑块或肿物,通常无症状,且生长缓慢^[2]。由于其临床表现不具有特异性,常被误诊。有研究指出,首次就诊时,仅0.53%的病例被正确诊断,这提示临床上对该疾病的认知和鉴别诊断水平仍有待提高^[3]。本文报道了2例发生于不同部位的疣状黄瘤病例,并结合相关文献进行了探讨,旨在为临床上及时、正确地诊治该疾病提供参考。

1 临床资料

1.1 病例1

患者,女,37岁。主诉:右下后牙牙龈粗糙病损1个月。现病史:患者于1个月前发现右下后牙牙龈出现粗糙病损,病损无触痛,无明显消长史;否认自发痛及刺激痛史。既往史:否认系统性疾病及过敏史,否认传染病史,否认吸烟、外伤及相关家族史。

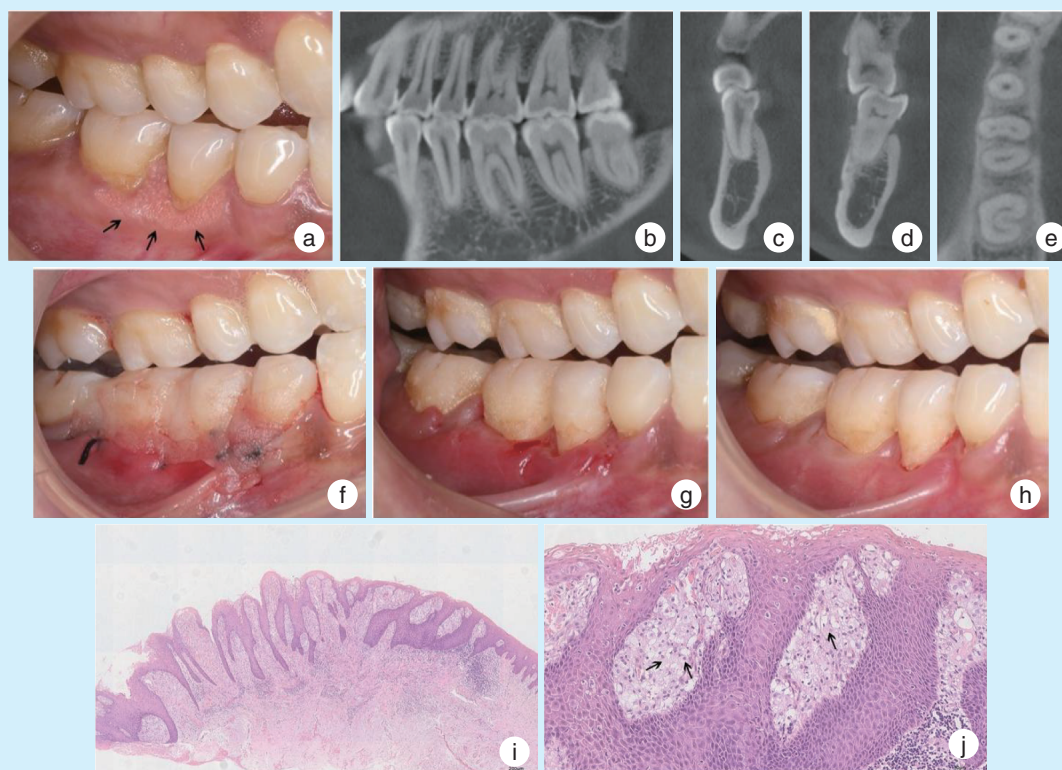
1.1.1 专科检查 45、46牙颊侧牙龈可见一粉红色病损,大小约14 mm × 7 mm,波及龈乳头,未波及舌侧。病损表面呈颗粒状,质韧无触痛,龈缘伴

有约2 mm的牙龈退缩(图1a)。口腔卫生欠佳,菌斑指数2,牙石指数1,全口牙周探诊深度约2~4 mm,探诊出血阳性,龈缘充血、轻度水肿,质地中等,口腔内其余牙龈及黏膜无明显异常,未触及淋巴结肿大。CBCT检查示45、46牙未见明显异常,牙槽骨高度尚可(图1b~1e)。

1.1.2 诊疗经过 因患者口腔卫生欠佳,首先对其进行口腔卫生宣教,指导菌斑控制,并完善牙周基础治疗。1周后,患者在局部麻醉下行右下后牙牙龈病损切除术。术中沿病损边缘外2 mm完整切除病损,生理盐水冲洗,冠向复位瓣关闭创口并严密缝合,术区覆牙周塞治剂(图1f)。术后两周拆线(图1g)。术后1个月,见术区牙龈愈合良好,伴有1~2 mm牙龈退缩增加(图1h)。患者口腔卫生欠佳,右侧后牙区牙石指数1,探诊出血阳性,局部行龈上洁治并加强口腔卫生宣教。病理检查低倍镜下见上皮过度不全角化,钉突细长,固有层炎性细胞浸润。高倍镜下见大量泡沫细胞填充于结缔组织乳头(图1i、1j),未发现任何异型增生。根据病理学检查与临床表现诊断为疣状黄瘤。

1.2 病例2

患者,男,36岁。主诉:右下颌前庭沟肿物3个月。现病史:患者3个月前在右下前牙区前庭沟处发现一肿物,逐渐增大,现偶尔影响进食,但无疼痛症状。既往史:否认系统性疾病及过敏史,否认



a: a pink and flat lesion with a granular surface (arrow) measuring approximately 14 mm × 7 mm on the buccal gingiva between teeth 45 and 46. b-e: CBCT examination shows no abnormality of teeth 45 and 46. f: the lesion was completely excised and the wound was sutured with periodontal dressing placed over the surgical site. g: stitches were removed after two weeks. h: the gingiva healed well after one month with a slight increase of recession. i & j: histological findings of hematoxylin and eosin staining showing epithelial hyperplasia with parakeratosis and elongated rete pegs, with foam cells (arrow) filling in the connective tissue papillae (magnification: i: ×40, j: ×200)

Figure 1 Pre- and post-treatment intraoral photographs, radiographic findings, and histopathological examination of a 37-year-old female patient with verruciform xanthoma on the mandibular gingiva

图1 37岁女性下颌牙龈疣状黄瘤患者治疗前后口内照及影像学 and 病理学检查

传染病史,否认吸烟、外伤及相关家族史。

1.2.1 专科检查 右下前牙区前庭沟黏膜处见一外生性肿物,边缘不规则,大小约 18 mm × 10 mm,表面呈细小突起及颗粒状,颜色粉白,质地中等,无触痛,周围黏膜轻度充血(图 2a)。双侧颌下及颌下淋巴结未触及明显肿大。口腔卫生一般,未见明显龈上牙石,牙龈呈粉红色,形态一般,质地中等。口腔内其他部位的牙龈及黏膜无明显异常。

1.2.2 诊疗经过 患者在局麻下行右下前庭沟肿物切除术,术中使用高频电刀沿肿物边缘外 2 mm 处完整切除病变,创面电凝止血,并用大量生理盐水冲洗,检查无肿物残留,术后用纱布压迫止血(图 2b)。术后两周随访,术区愈合良好(图 2c)。病理检查:低倍镜下见上皮显著增厚,棘层增生,钉突肥大伸长,上皮不全角化,结缔组织中可见大

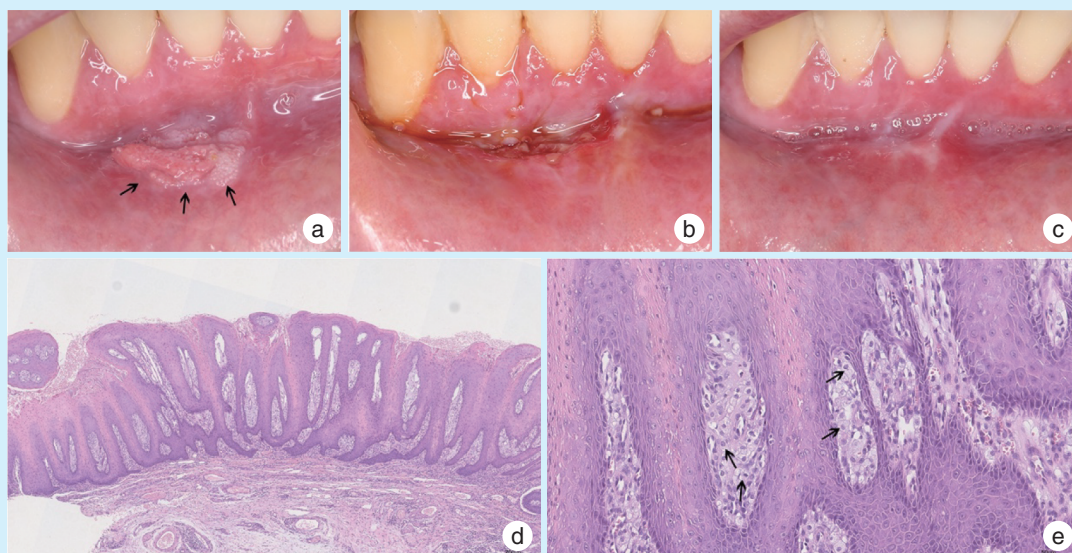
量炎性细胞浸润。高倍镜下固有层乳头区可见泡沫细胞(图 2d、2e),未见任何异型增生。根据病理学检查与临床表现诊断为疣状黄瘤。

2 讨论

2.1 疣状黄瘤的病因与发病机制

疣状黄瘤具体病因尚未完全明确,目前的假设包括病毒感染、炎症反应、创伤刺激及免疫反应等因素^[3]。虽然有研究提出该病可能与人乳头瘤病毒(human papilloma virus, HPV)感染有关,但多数病例中未发现 HPV。因此,HPV 与疣状黄瘤的关联仍然存在争议。近期报道指出,新型冠状病毒肺炎流行后发现的皮肤疣状黄瘤病例数高于过去,并报告 2 例有新冠阳性史的疣状黄瘤病例,提示新型冠状病毒对该病可能有潜在影响^[4]。

目前普遍认为,慢性局部炎症反应可能是该



a: a raised irregular pinkish lesion with a granular surface (arrow) measuring approximately 18 mm × 10 mm on the mandibular vestibular area. b: the lesion was completely excised with a high frequency electrotome. c: the surgical site healed well after two weeks with a small white scar left on the mucosa. d&e: histological findings of hematoxylin and eosin staining showing hyperplasia of the stratified squamous epithelium and thick elongated rete ridges with foam cells (arrow) filling in the connective tissue cores and inflammatory cells infiltrating the lamina propria (magnification: d: ×40, e: ×200)

Figure 2 Pre- and post-treatment intraoral photographs and histopathological findings of a 36-year-old male patient with verruciform xanthoma on the mandibular vestibular mucosa

图2 36岁男性前庭沟疣状黄瘤患者治疗前后口内照及病理学检查

病的重要发病机制。由于临床观察到疣状黄瘤多发于易受创伤或食物刺激的咀嚼黏膜,有学者提出“局部刺激”是该疾病的重要诱因。局部的慢性创伤或刺激引起上皮损伤,伴随中性粒细胞浸润,进而促进上皮角质形成细胞的降解。这些降解的细胞碎片和坏死的中性粒细胞被巨噬细胞吞噬,从而形成泡沫细胞。然而这一理论难以解释在软腭或口底等创伤不常见部位发病的情况^[3]。此外,显微镜检查并未发现上皮细胞降解的充分证据,而泡沫细胞却在结缔组织中持续存在^[5]。因此,另一种观点认为,结缔组织中的泡沫细胞优先产生并大量积聚,进而推动结缔组织乳头突入上皮,引发钉突伸长,导致上皮结构的改变。在此过程中,上皮细胞的代谢可能会受到影响,从而出现过度角化现象^[6]。有学者主张疣状黄瘤是一种反应性改变,潮湿的微环境、病原体、机械刺激、烟草、酒精和药物等都可能是潜在诱因,并指出当慢性刺激导致局部产生炎症反应时,活化的T淋巴细胞可上调角质细胞内单核细胞趋化蛋白-1(monocyte chemoattractant protein-1, MCP-1)和巨噬细胞趋化因子受体2(chemokine receptor type 2, CCR2)的表

达,二者形成配对,从而招募大量巨噬细胞聚集于结缔组织乳头。同时,巨噬细胞的清道夫受体(macrophage scavenger receptor, MSR)表达上调,这些巨噬细胞识别、捕获和内化上皮细胞中的低密度脂蛋白并将其氧化,从而形成泡沫细胞。而氧化低密度脂蛋白(oxidized low-density lipoprotein, ox-LDL)诱导的泡沫细胞坏死和巨噬细胞依赖的碎片吞噬过程将循环往复,使疾病周期性地延续、进展^[7]。

此外,尽管部分疣状黄瘤的结缔组织中富含脂质,但大多数患者并未表现出明显的系统性脂质代谢异常^[1]。部分病例报告显示,疣状黄瘤可能与某些自身免疫性疾病相关,如扁平苔藓、盘状红斑狼疮、寻常型天疱疮等,这提示免疫因素可能在其发病机制中发挥了一定作用^[8-9]。

2.2 疣状黄瘤的临床及病理表现

口腔疣状黄瘤常见于50~70岁的中老年患者,男性发病率略高于女性(约1.4:1)^[1,3]。其常见发生部位为咀嚼黏膜,如牙龈、硬腭等,也可出现在颊侧黏膜、口底和唇部等,但较为罕见^[1,10]。病损通常表现为疣状、乳头状或扁平的斑块或结节,

表面粗糙,边界清晰,颜色因上皮角化程度不同而呈现白色、淡黄色或淡粉色等,通常生长缓慢,且无明显症状^[8]。

在组织病理学上,疣状黄瘤最典型的特征是泡沫细胞填充在结缔组织乳头中,且上皮钉突可有不同程度的伸长或增厚,同时固有层中常见慢性炎性细胞浸润,通常不具有细胞异型性表现^[11-12]。根据显微镜下的表面结构,疣状黄瘤可分为3种类型:①疣状型,特征为过度角化、棘层肥厚及上皮钉突伸长;②乳头状型,表现为结缔组织上覆复层鳞状上皮呈指状突起;③平坦型,显示轻度棘层增生、钉突不同程度伸长,上皮伴有轻度不全角化^[3]。此外,既往研究提示免疫组化结果对辅助诊断疣状黄瘤具有一定意义。在许多病例的泡沫细胞中发现了多个巨噬细胞标志物呈阳性染色,如 CD68、CD63、CD163 和 Cathepsin-B 等,且 CD34 在病变上皮的微血管内皮细胞中较正常上皮显著高表达^[3, 13]。但尽管如此,这些免疫组化标志物如何应用于辅助诊断或鉴别疣状黄瘤,目前尚缺少

统一、完善的标准。

2.3 疣状黄瘤的鉴别诊断

由于疣状黄瘤的外观缺乏特异性,临床上易发生误诊。一项对 212 例口腔疣状黄瘤分析的系统性综述表明,临床上对该疾病的初诊断最常见为鳞状细胞乳头状瘤和寻常疣(占 31.6%),其次是未知待查(19.3%)和过度角化(11.3%),少数被诊断为纤维瘤、白斑、扁平苔藓等^[3]。个别发生于下唇的病例曾被误诊为黏液囊肿^[5]。由此可见,临床上对该病的鉴别诊断水平亟待提高,然而,当前大多数研究和病例报道对鉴别诊断的讨论并不深入,临床参考意义不足。疣状黄瘤主要需与 HPV 感染相关病变,如鳞状细胞乳头状瘤、寻常疣、尖锐湿疣等进行鉴别,同时还需与一些恶性病变如鳞状细胞癌、疣状癌等进行区分,以避免过度治疗^[14-15]。本文回顾文献并讨论了这些疾病的发病特点、临床表现及病理特征,并与疣状黄瘤进行对比(表 1),为临床上进行鉴别诊断提供一定的依据和参考。

表 1 疣状黄瘤及相似病变的诊断和鉴别诊断

Table 1 Diagnoses and differential diagnoses of verruciform xanthoma and similar lesions

Lesion	Age	Gender	Sites	Clinical presentation	Histological presentation
Verruciform xanthoma	Fifth to seventh decade	A slight male predominance	Gingiva, palate, buccal mucosa, alveolar ridge, tongue	Pink, red to yellowish in coloration; asymptomatic solitary, flat, or slightly raised, verrucous, papillary, or even cauliflower-like ^[8]	Large swollen foam cells (xanthoma cells) filling the connective tissue papillae between elongated rete pegs of epithelium ^[11]
Squamous papilloma	Third to seventh decade	A notable female predilection	Tongue, soft palate, labial mucosa	Pink to white, papillary or warty with exophytic projections, likely to be solitary and pedunculated	An exophytic and papillary architecture at low power; the epithelium may appear in a normal maturation pattern with scattered basilar or parabasilar mitotic figures in the basal layer, with koilocytes in the upper spinous layers ^[33]
Verruca vulgaris	Any age (preference in children)	No prominent difference	Palate, labial mucosa, tongue	White or pink, sessile, with exophytic fronds and a discrete border; size and number can vary ^[34]	Exophytic projections with a verrucous architecture with a chevron imparted by thick keratinization; has koilocytes in the upper epithelial layers ^[33]
Condyloma acuminatum	More common in teenagers or young adults	A predilection for females	Tongue, lips, buccal mucosa, palate, floor of the mouth	Pink to white, tendency to appear in multiples (or merge into a large one), more often sessile but can also be pedunculated with a cauliflower-like or moruloid surface texture ^[20]	Exophytic papillary squamous proliferation with a parakeratinized epithelium cryptically invaginating into an acanthotic spinous cell layer; koilocytes are found in the upper spinous and corneal layer ^[33]
Squamous cell carcinoma	Elderly or middle-age	A notable male predilection	Tongue, lips, floor of the mouth	Red or white ulcerated mucosal lesion with necrotic central area and raised borders, or an exophytic growth with a smooth, ulcerated or verrucous surface ^[23]	Characterized by the extent of cellular atypia and squamous differentiation; well-differentiated are stratified epithelium organized into layers with irregular keratinization shown as "keratin pearl," while poor-differentiated are immature cells with nuclear pleomorphism and atypical mitoses ^[24, 27]
Verrucous carcinoma	Mean age of 69.5 years	No prominent difference	Buccal mucosa, gum, tongue	Soft, exophytic, with a cauliflower-like warty surface, growing slowly but can reach a significant size and infiltrate adjacent tissues such as muscles and bone ^[29]	Parakeratotic epithelium without dysplasia, deep bulbous ridges pushing into the connective tissue with an intact basement membrane; tumor cells show barely mitotic activity and pleomorphism ^[32]

2.3.1 鳞状细胞乳头状瘤、寻常疣和尖锐湿疣 鳞状细胞乳头状瘤、寻常疣和尖锐湿疣均与 HPV 感染相关^[16-17]。鳞状细胞乳头状瘤常见于舌头和软腭,通常表现为粉色或白色的外生性肿物,表面呈“手指状”或“疣状”,最大直径一般不超过 1 cm,且多有蒂。寻常疣通常发生在上腭和唇黏膜,偶尔可见于舌部,表现为白色或珊瑚粉色的无蒂外突性生长,边缘清晰,多具有自限性,但病损的大小和数量不一^[18-19]。尖锐湿疣发生在口腔黏膜时,常累及舌、唇、颊黏膜、上腭及口底,常见于青少年和年轻人。其病变表面呈菜花状或团块状,有蒂或无蒂,颜色可从粉红色到白色不等,且常见多发,一些病变可融合成较大的病灶^[20-21]。组织病理学上,HPV 感染引起的细胞形态学改变具有特异性,表现为核大、深染,常见双核或多核,核周可见透亮区,胞质边缘呈围堤状浓染,形成“挖空细胞”,这一特征是鉴别和诊断 HPV 相关疾病的重要组织学依据之一^[22]。

2.3.2 鳞状细胞癌 口腔鳞状细胞癌(oral squamous cell carcinoma, OSCC)是口腔内最常见的恶性肿瘤,通常表现为溃疡性病变,边缘发硬、不规则,有时也可表现为具有光滑、溃疡状或疣状表面的外生性肿物,多发于舌、唇和口底,呈白色或红色^[23]。OSCC 在中老年人群中发病率更高,男性发病率显著高于女性,其主要的致病因素包括烟草、槟榔和酒精等^[24-26]。组织病理学上,OSCC 的特征表现为不同程度的细胞异型性和鳞状化生:分化良好的病变与正常鳞状上皮相似,细胞角化明显、排列成层状,通常表现为“角化珠”;分化差的病变则显示未成熟细胞的特征,角化少,细胞间桥几乎不能发现,核具有多形性及不正常分裂^[27-28]。

2.3.3 疣状癌 疣状癌是一种较为少见的低度恶性病变,主要发生在颊黏膜、牙龈和舌,发病年龄通常为 49 ~ 69.5 岁,男性发病率较高。该病变表现为具有宽大基底的肿物,质地柔软,表面呈菜花状或小颗粒状^[29]。尽管疣状癌一般生长缓慢,但仍可能发展为较大病变,并可能侵袭邻近的肌肉和骨组织。然而,即便病变存在局部浸润,疣状癌较少出现区域淋巴结转移或远处转移^[30]。组织学上,疣状癌表现为高角化、分化良好的鳞状上皮突入间质内,核分裂活动和细胞多形性较少,缺乏异型性表现。病变边缘呈局部推进性而非浸润性侵犯^[31-32]。

2.4 疣状黄瘤的治疗与预后

口腔疣状黄瘤的首选治疗方式为手术切除并去除局部刺激因素,预后良好^[15]。除传统手段外,激光、冷冻疗法及光动力疗法等新技术也有一定应用前景。激光因操作简单、出血少、术后瘢痕小等优势已广泛应用于治疗,但目前尚缺少高质量的随机对照试验对比各种激光的治疗效果,尤其是远期疗效^[35]。冷冻疗法利用低温冷冻技术破坏病变组织,具有安全、方便、不良反应少等优点,许多口腔黏膜疾病如溃疡、扁平苔藓、白斑等也是其理想应用场景,但实际操作中对冷冻程度精确性的控制难度较高,且缺乏方便可靠的监测手段,疗效不一^[36]。光动力疗法是通过光动力学反应选择性破坏病变组织的微创治疗手段,对正常细胞损伤小,靶向特异性高,全身毒副作用低并且可重复治疗,故近年来逐渐应用于多种口腔黏膜疾病的治疗,但光敏剂剂型和光源的选择、光学参数的准确选择、适应证的选择等还需进一步探索,且缺乏基于循证医学的规范诊疗流程^[37-38]。

临床上,口腔疣状黄瘤复发罕见,目前仅 3 例复发被报道,然而有学者回顾过往病例指出,大多数样本缺少临床随访数据,且由于报道的病例大多来自不同临床医生群体,缺少对该疾病的系统随访研究,故实际复发率可能存疑^[3]。尽管目前认为疣状黄瘤恶变少,但仍有一些与癌前病变甚至恶性肿瘤伴发的病例报道,如口腔黏膜下纤维化、口腔扁平苔藓、红斑及 OSCC 等^[9]。有学者强调,当病变位于口底、舌等高风险部位,或口腔局部环境长期暴露于一些与恶性病变高度相关的刺激因素(如烟草、槟榔等)时,需注意是否伴有其他病变或恶性肿瘤发生,如 OSCC 或原位癌^[13]。此外,近年来研究还发现疣状黄瘤的泡沫细胞中 CD163 呈阳性表达,而 CD163⁺巨噬细胞与口腔癌前病变和诱导上皮异常增生存在相关性^[39]。虽然目前缺乏足够证据将泡沫细胞归类为肿瘤相关性巨噬细胞,但仍需对该疾病潜在的恶变可能性保持一定怀疑。

口腔疣状黄瘤是一种较罕见的黏膜病变,临床上常见误诊。掌握其临床和病理表现以及与相似病变的鉴别诊断,对正确诊治该疾病具有重要意义。尽管目前疣状黄瘤的发病机制尚不完全明确,但已有研究提示局部慢性刺激可能是其发生的诱因之一。此外,尽管目前尚无充分证据表明该病变具有恶变倾向,但鉴于大多数病例缺乏长

期的系统性随访研究,不能排除随着病例积累和研究的深入,未来在该病的恶变潜能方面可能会有新的发现。因此临床上对其潜在恶变风险仍需保持一定警觉,建议对相关病例定期随访,重点关注病变有无复发、进展或恶变倾向,并早期干预。

【Author contributions】 Yang MX collected the data and wrote the article. Zhan Y collected the data and relevant references. Song ZF conceptualized and reviewed the article. All authors read and approved the final manuscript as submitted.

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