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Gingival Tattooing: Literature Review and Report of Three Clinical Cases of Cultural Gingival Tattooing

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Abstract: **Background:** Gingival pigmentation may arise from physiologic melanin, systemic disease, or exogenous deposition. Cultural gingival tattooing is an uncommon but important differential diagnosis in multicultural clinical practice and may mimic more serious lesions if history is not obtained carefully. **Case Description**: Three West African women (19–56 years) presented with incidental bilateral pigmentation of the maxillary attached gingiva. The lesions were flat, symmetrical, sharply demarcated, and clinically stable. Clinical examination, palpation, and radiographic assessment revealed no inflammatory change, induration, ulceration, or associated osseous/radiopaque pathology. A detailed history confirmed prior traditional gingival tattooing performed for cultural and esthetic reasons. **Conclusion:** Cultural gingival tattooing should be recognized as a benign exogenous pigmentation. Careful history-taking, pattern recognition, and selective use of radiographs can prevent unnecessary biopsy, overtreatment, and patient anxiety. **Clinical Significance:** General dentists increasingly encounter culturally diverse patients; awareness of gingival tattooing improves differential diagnosis and supports culturally competent care.

Key Words: Cultural Gingival Tattooing, Gingival Pigmentation, Exogenous Pigmentation, Amalgam Tattoo, Oral Melanoma, Differential Diagnosis

INTRODUCTION

Gingival pigmentation is a frequent clinical finding and may be physiologic, systemic, drug-related, neoplastic, or exogenous in origin. The practical challenge for dentists is that some benign pigmented lesions can resemble potentially serious disease, leading to unnecessary referral or biopsy when the clinical context is overlooked [1].

Traditional gingival tattooing is a culturally rooted practice reported mainly in parts of Africa and the Middle East. It may be performed for esthetic reasons, social identity, femininity, or perceived health benefits. Pigment is manually introduced into the attached gingiva using simple instruments and may produce slate-grey, blue-grey, or black discoloration that persists for years [2-4].

The principal diagnostic look-alikes include physiologic/racial pigmentation, melanotic macule, melanocytic nevus, amalgam tattoo, drug-related pigmentation, smoker's melanosis, and oral melanoma. Distinguishing features include a history of tattooing, stable color over time, bilateral symmetrical distribution, sparing of the marginal gingiva, and the absence of ulceration, bleeding, induration, or rapid change [1,5-13].

This report aimed to document three clinically similar cases of cultural gingival tattooing in West African women, summarize the relevant literature, and provide a practical diagnostic approach that helps clinicians avoid unnecessary invasive procedures while maintaining vigilance for red-flag lesions (Table 1-2).

Objectives

- To describe the shared clinical features of three cases of cultural gingival tattooing
- To summarize the main differential diagnoses and the role of history-taking, examination, and radiography
- To provide a practical approach for deciding when observation is appropriate and when biopsy/referral is required

Table 1: Summary of the Three Clinical Cases

Case	Age	Country	Site/distribution	Color/pattern	Symptoms/findings	Clinical impression
A	19	Mauritania	Bilateral maxillary attached gingiva, midline to premolars	Bluish-grey band	No pain, ulceration, induration, or radiographic abnormality	Typical cultural gingival tattoo
B	56	Senegal	Bilateral maxillary attached gingiva, midline to premolars	Dense slate-grey, high saturation	Asymptomatic; no inflammatory or radiographic changes	Typical cultural gingival tattoo
C	Adult	Mauritania/Senegal	Bilateral maxillary attached gingiva, midline to premolars	Patchy grey-black with lighter zones	Asymptomatic; clinically stable; no bony/radiopaque pathology	Typical cultural gingival tattoo

Table 2: Practical Differential Diagnosis of Maxillary Gingival Pigmentation

Entity	Typical clues	Radiographic/clinical aids	When biopsy/referral is needed
Cultural gingival tattoo	Bilateral, symmetrical, flat, stable; history of traditional tattooing	Clinical exam + history; radiographs usually negative for radiopaque material	Usually not needed if typical and stable
Amalgam tattoo	Adjacent dental restorations; grey-blue focal macule	May show radiopaque particles on radiograph	If history/radiograph are inconclusive
Physiologic/racial pigmentation	Diffuse melanin pigmentation; long-standing; ethnic pattern	Clinical pattern and history	Only if atypical change occurs
Oral melanoma / suspicious melanocytic lesion	Asymmetry, irregular borders, color variegation, growth, ulceration, bleeding, induration	Urgent specialist assessment	Biopsy/referral indicated

CASE PRESENTATION

Three Black female patients from Mauritania and Senegal presented for unrelated dental complaints. In each case, an incidental bilateral pigmentation of the maxillary attached gingiva was identified from the midline to approximately the second premolar region. The pigmentation spared the marginal gingiva and interdental papillae. None of the patients reported pain, burning, swelling, bleeding, ulceration, or a change in lesion size. Palpation revealed no tenderness or induration. Periapical and panoramic radiographs showed no associated dental, osseous, or radiopaque foreign-body pathology. Detailed history confirmed prior traditional gingival tattooing in the country of origin for cultural/cosmetic reasons. Based on the typical appearance, stable history, and absence of suspicious features, biopsy was not indicated.

LITERATURE REVIEW AND DISCUSSION

Published reports describe cultural gingival tattooing as a flat exogenous pigmentation that most often affects the maxillary attached gingiva and is usually bilateral and symmetrical. The color ranges from blue-grey to black depending on pigment material, density, and the time elapsed since tattooing. Prior reports also indicate that the practice is commonly undertaken during adolescence or before marriage in some communities [2-4,12].

The central clinical issue is differentiation from other pigmented lesions. Amalgam tattoo is among the closest mimics, but it is often associated with adjacent restorative history and may show radiopaque particles. Melanotic macules and physiologic pigmentation usually do not have the same sharply patterned cultural history. Oral melanoma, although rare, remains the most important exclusion because delayed diagnosis carries major consequences [5-9,13].

In the present series, the lesions were benign in appearance because they were bilateral, symmetrical, non-elevated, stable, and unaccompanied by bleeding, ulceration, induration, or rapid change. Radiographs helped exclude metallic foreign material or other pathology. These findings, together with the documented history of traditional tattooing, supported a clinical diagnosis without biopsy [2-4,12].

Biopsy should still be considered when any red flags are present, including an unclear history, unilateral/asymmetric distribution, irregular or enlarging borders, variegated pigmentation, nodularity, ulceration, bleeding, pain, induration, or rapid change over time. In routine practice, dentists should document the history, photograph the lesion, note the distribution, and review the patient if uncertainty remains [6,13-15].

Cultural awareness is essential in increasingly diverse clinical settings. Correct recognition of gingival tattooing can reduce patient anxiety and avoid unnecessary invasive procedures, while a structured diagnostic approach preserves safety [12].

CONCLUSION

Cultural gingival tattooing is a benign form of exogenous oral pigmentation that may mimic disease in multicultural dental practice.

General dentists should obtain a focused cultural and procedural history, assess symmetry and stability, document the lesion photographically, and use radiographs selectively to exclude other causes.

When the history is unclear or red-flag features are present, biopsy or specialist referral is warranted; otherwise, correct diagnosis can prevent unnecessary intervention and patient anxiety.

Authors' Contributions

All authors contributed to study conception, data collection, analysis, manuscript drafting, and final approval.

Informed Consent

Written informed consent was obtained for clinical photography and publication of anonymized case details.

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Conflict of Interest

The authors declare no conflict of interest.

Reporting Guideline

The case descriptions were organized in accordance with CARE principles to improve reporting consistency.

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