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Case Study

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XANTHELASMA PALPEBRARUM: A CLINICOPATHOLOGIC CASE REPORT

Naqsh Thakur[1]*, Yogita Bhansali[2] and Tapsh Thakur[3]

[1,2]Department of Pathology, Shri B.M Patil Medical College, Hospital and Research Centre, Vijayapura, Karnataka.
[3]Department of Surgery, Dr. Rajendra Prasad Govt. Medical College, Kangra, Himachal Pradesh.

***Corresponding Author: Dr. Naqsh Thakur**

Department of Pathology, Shri B.M Patil Medical College, Hospital and Research Centre, Vijayapura, Karnataka.

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ABSTRACT

Xanthelasma palpebrarum is the most common form of cutaneous xanthomas and is typically characterized by yellowish plaques on the periorbital skin. While often considered a cosmetic concern, xanthelasma can be an important clinical marker of underlying dyslipidemia and increased cardiovascular risk. We present a detailed case report of a 52-year-old woman who presented with bilateral periorbital yellowish plaques, which were diagnosed as xanthelasma. The case is examined in the context of clinical presentation, diagnostic evaluation, histopathological findings, and management options, along with a comprehensive literature review to underline the systemic implications of this condition. This report emphasizes the significance of recognizing xanthelasma as not merely a dermatological entity but also a potential signpost for metabolic and cardiovascular disorders.

INTRODUCTION

Xanthelasma palpebrarum is a benign, lipid-rich lesion most commonly found in the periorbital region (Wang et al., 2019). It manifests as soft, yellowish, flat plaques, typically located on the medial aspect of the upper eyelids, although it may also affect the lower eyelids. The condition is more common in middle-aged and older adults, with a higher incidence in women (James et al., 2015).

Histologically, xanthelasma consists of lipid-laden foamy histiocytes situated within the superficial dermis (Mehregan et al., 2010). While the lesions are usually asymptomatic, their presence may signify underlying lipid metabolism disorders, including familial hypercholesterolemia or mixed hyperlipidemia (Bergman et al., 2018). Even in normolipidemic individuals, studies have reported a higher incidence of cardiovascular events associated with xanthelasma (Christoffersen et al., 2011).

The exact pathogenesis remains incompletely understood. However, it is believed to be associated with altered lipid transport and macrophage activity in the dermal vasculature (Ramasamy et al., 2020). Diagnosis is often clinical, but confirmation via histopathology can be necessary in ambiguous cases. Treatment options range from observation to cosmetic interventions such as laser ablation, surgical excision, or chemical cauterization, depending on patient preference and the lesion's extent (Reddy et al., 2016).

This report presents a classic case of xanthelasma in a middle-aged woman, highlighting diagnostic strategies and therapeutic considerations, while also exploring its relevance in systemic disease.

Case Details

A 52-year-old woman presented to the dermatology outpatient department with concerns about yellowish discoloration around both eyes, which had been progressively increasing in size over the past three years. The lesions were asymptomatic, but she was concerned about their appearance.

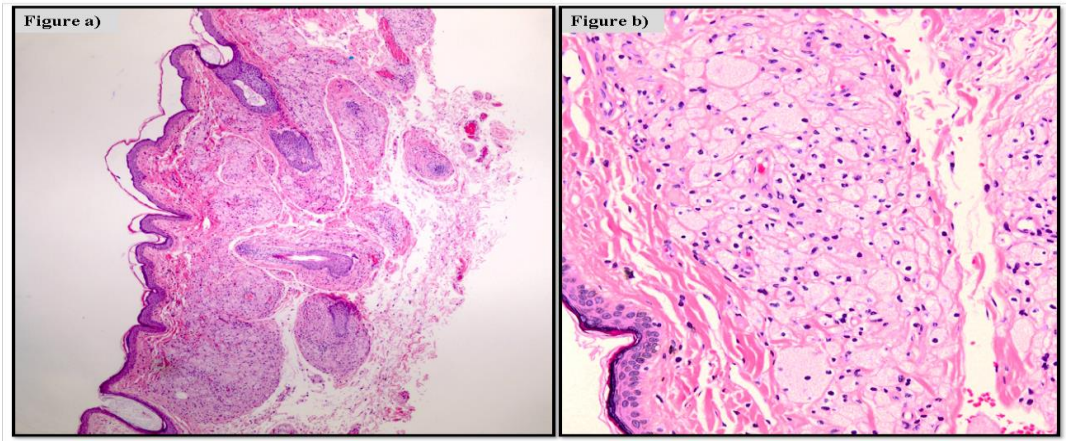
Medical history: The patient had a medical history of type 2 diabetes mellitus, diagnosed six years earlier, managed with oral hypoglycemics. She also reported a history of hypertension and was on regular antihypertensive medications. There was no personal or family history of premature cardiovascular disease.

Physical examination: Dermatological examination revealed soft, yellowish, flat plaques on the medial aspects of both upper eyelids, measuring approximately 1.5 cm in length and 0.8 cm in width. No erythema, ulceration, or induration was observed. The lesions were symmetrical and well-demarcated. No other xanthomas were found elsewhere on the body.

Investigations: Laboratory workup included: Complete blood count: Within normal limits, Fasting blood glucose: 142 mg/dL, HbA1c: 7.4%, Lipid profile: Total cholesterol: 261 mg/dL, LDL: 174 mg/dL, HDL: 42 mg/dL and Triglycerides: 196 mg/dL.

Given the elevated cholesterol levels, the patient was referred for a cardiology evaluation. Electrocardiography and echocardiography were unremarkable, with no evidence of ischemic changes.

Histopathology: A punch biopsy was obtained from one of the lesions under local anesthesia. Hematoxylin and eosin (H&E) staining showed a dense infiltrate of lipid-laden foam cells within the superficial dermis, consistent with xanthelasma.



Management: The patient was counseled on the benign nature of the lesion but also educated about its association with hyperlipidemia and cardiovascular risk. She was advised dietary modifications and started on atorvastatin 20 mg daily. For cosmetic reasons, she opted for carbon dioxide laser ablation. The procedure was well-tolerated, with no significant complications. At 6-month follow-up, there was no recurrence.

DISCUSSION

Xanthelasma is a distinctive clinical entity that combines dermatological and systemic features. It often serves as a cutaneous marker for underlying lipid abnormalities and cardiovascular risk (Christoffersen et al., 2011). Though not always associated with dyslipidemia, nearly 50% of individuals with xanthelasma demonstrate lipid profile abnormalities (James et al., 2015).

The prevalence increases with age and is more common among women, possibly due to hormonal influences on lipid metabolism (Wang et al., 2019). In our patient, the coexistence of type 2 diabetes and dyslipidemia further underscored the metabolic context in which xanthelasma develops. Histologically, the foam cells observed in the dermis originate from macrophages that engulf circulating lipids, a process linked to local microvascular changes and increased vascular permeability (Mehregan et al., 2010).

From a diagnostic standpoint, xanthelasma is generally recognized clinically; however, dermoscopy and biopsy can aid in uncertain cases (Ramasamy et al., 2020). Dermoscopically, xanthelasma shows yellowish homogenous areas with ill-defined borders.

While treatment is not mandatory, many patients seek removal for cosmetic reasons. Options include surgical excision, trichloroacetic acid application, laser therapy (CO2 or Er: YAG), and cryotherapy (Reddy et al., 2016). CO2 laser ablation has been widely used due to its precision and minimal scarring. However, recurrence rates can vary between 26% and 40%, particularly in patients with persistent dyslipidemia (Christoffersen et al., 2011).

Systemically, the presence of xanthelasma should prompt evaluation of lipid levels and cardiovascular risk factors. Christoffersen et al. (2011) conducted a large cohort study and demonstrated that xanthelasma was independently associated with an increased risk of myocardial infarction, ischemic heart disease, and death, even in individuals with normal lipid profiles.

Management should thus be multidisciplinary, encompassing dermatologic treatment, lipid control, and cardiovascular risk modification. Statin therapy, lifestyle changes including dietary regulation, exercise, and smoking cessation are essential in patients with metabolic syndrome features, as seen in our case.

CONCLUSION

Xanthelasma, although primarily a benign dermatological condition, holds systemic significance due to its association with lipid abnormalities and cardiovascular risk. Our case underscores the importance of a thorough systemic evaluation in patients presenting with xanthelasma. Early recognition, appropriate metabolic workup, and coordinated care can help mitigate long-term cardiovascular complications. Cosmetic treatment should be tailored to the patient's expectations and medical profile, with awareness of recurrence risks.

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