[BRIEF REPORT]

Periorbital Hyperpigmentation in Patients with Xanthelasma Palpebrarum

An Interesting Observation

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ABSTRACT

Background: Xanthelasma palpebrarum refers to xanthomas that occur more often near the inner canthus of the eyelid. Periorbital hyperpigmentation presents as a dark area surrounding the eyelids. **Objective:** In the present study, the authors examined the prevalence and the associated factors of periorbital hyperpigmentation among patients with xanthelasma. **Methods:** One hundred and fourteen patients with xanthelasma palpebrarum were examined for the presence of dark circles. Detailed questionnaires regarding the history of diabetes, hypothyroidism, smoking status, and weight were completed by all patients. They were also tested for serum lipids (cholesterol, low-density lipoprotein, triglycerides, apolipoprotein A and apolipoprotein B). **Results:** From the 114 patients with xanthelasma, 94 (82.4%) were diagnosed with periorbital hyperpigmentation. At the time of the survey, 46 patients were smokers (48.9%), 23 of them had hypothyroidism (24.4%), and 16 patients were obese (17%). Only four patients had a history of diabetes. Cholesterol levels were elevated in 65 patients (69.1%). In 52 patients (55.3%), low-density lipoprotein was increased and in 51 patients (54.2%), both cholesterol and low-density lipoprotein were elevated. Apolipoprotein A was increased in 35 patients (37.2%), whereas apolipoprotein B was increased in 23 patients (24.4%). **Conclusions:** This study showed that a significant number of patients with xanthelasma exhibited periorbital hyperpigmentation. Smoking, obesity, and hyperlipidemia were observed in these patients. (*J Clin Aesthet Dermatol.* 2016;9(4):52–54.)

Periorbital hyperpigmentation (POH) and xanthelasma palpebrarum constitute two main aesthetic facial concerns. Periorbital hyper-pigmentation presents as a dark area surrounding the eyelids. The age of onset is usually after puberty or in early adulthood (16–25 years). It is more pronounced in certain ethnic groups, commonly seen in skin of color patients, and frequently seen in multiple members of the same family.[1,2] The exact origin is not well known. A number of etiologic factors have been associated with increased risk of developing periorbital hyperpigmentation. Xanthelasma palpebrarum is a sharply demarcated yellowish deposit of fat underneath the skin that occurs more often near the inner canthus of the eyelid. It has been known to be associated with atherosclerosis, dyslipidemia, and coronary artery disease, but the exact pathogenesis remains obscure.[3–5]

OBJECTIVE

In the present study, the authors examined the prevalence and associated factors of periorbital hyperpigmentation among patients with xanthelasma.

MATERIALS AND METHODS

This study was conducted in the dermatology department of Andreas Sygros Hospital of Cutaneous and Venereal Diseases in Athens, Greece. The study protocol was approved by the Ethics Committee of the hospital and written informed consent was obtained from all patients. One hundred and fourteen patients with xanthelasma palpebrarum that attended the outpatient clinic from April 2013 to June 2014 constituted the study group. One hundred of them were women and 14 were men. The patients were examined for the presence of

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dark circles. Detailed questionnaires regarding the history of diabetes, hypothyroidism, smoking status, and weight were completed from all patients. Blood samples for serum lipids (cholesterol, low-density lipoprotein, triglycerides, apolipoprotein A, and apolipoprotein B) were collected.

RESULTS

From the 114 patients with xanthelasma palpebrarum, 94 (82.4%) were also diagnosed with periorbital hyperpigmentation. Female predominance was observed since 81 of them (86.2%) were women and 13 (13.8%) were men. Both conditions were most prevalent in the 41 to 60 years of age group (69.1%). At the time of the survey, 46 patients were smokers (48.9%), 23 had hypothyroidism (24.4%), and 16 were obese (17%). Only four patients had a history of diabetes (4.2%) (Table 1). Cholesterol levels were elevated in 65 patients (69.1%). In 18 patients, hypertriglyceridemia coexisted with hypercholesterolemia. In 52 patients (55.3%), low-density lipoprotein was increased and in 51 patients (54.2%), both cholesterol and low-density lipoprotein were elevated. Apolipoprotein A was increased in 35 patients (37.2%), whereas apolipoprotein B was increased in 23 patients (24.4%).

TABLE 1. Incidence of hypercholesterolemia, smoking, hypothyroidism, obesity and diabetes in patients with both periorbital hyperpigmentation and xanthelasma palpebrarum

RISK FACTORS	NUMBER OF PATIENTS (%)
Hypercholesterolemia	65 (69.1%)
Smoking	46 (48.9%)
Hypothyroidism	23 (24.4%)
Obesity	16 (17%)
Diabetes	4 (4.2%)

DISCUSSION

POH and xanthelasma palpebrarum are two common worldwide problems, with a complex etiology and an expanding knowledge base. People tend to complain for mainly for aesthetic reasons. POH has a multifactorial pathogenesis, including genetic or constitutional pigmentation, postinflammatory hyperpigmentation secondary to atopic or allergic contact dermatitis, nutritional deficiency, fatigue, prominent superficial blood vessels, and shadowing from skin laxity.[2,6,7] On the other hand, xanthelasma palpebrarum, despite being considered a benign lesion causing no functional disturbance, has been correlated with lipid abnormalities and an increased risk of cardiovascular disease.[4] Studies have shown a varying incidence of dyslipidemia in individuals with xanthelasma, ranging from as low as 9.1 percent to as high as 67.9 percent.[8,9] The authors' study showed that a significant number of patients with xanthelasma simultaneously exhibited POH. To date, this observation has never been described in the literature. A possible explanation could be that the authors' finding is a demographic characteristic of the Greek population. According to their results, smoking, hyperlipidemia, obesity, and hypothyroidism may be possible markers for increased risk of both xanthelasma and POH. It would be interesting to clarify the association and pathophysiology mechanisms leading to the presence of POH in patients with xanthelasma. Management of patients with either xanthelasma or POH can be challenging. Despite the various therapeutic options available, they can both be notoriously resistant to treatment and recurrence rates remain high.[10–13] Therefore, it is important to identify early the abovementioned clinical and laboratory risk factors in individual patients, as they can be modified, treated, and controlled by lifestyle changes and taking the appropriate medication.

CONCLUSION

The authors conclude that the majority of patients with xanthelasma palpebrarum were also diagnosed with POH. Possible causative agents were identified. To the best of the authors' knowledge, the association and the contributing factors of these two conditions has not been previously described. A limitation of the current study was the absence of a control group. Further studies are therefore needed to confirm this preliminary study.

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