A Case of Disfiguring Xanthelasma Palpebrarum

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We report a case of xanthelasma palpebrarum (XP) with bilateral extensive and disfiguring involvement of all four eyelids. The patient was a 28-year-old woman and noticed this condition eight years ago. Physical examination showed yellowish flat topped bilateral extensive plaques around the eyes. Laboratory result was remarkable for a decrease of a serum high density lipoprotein cholesterol (HDL-C). Other laboratory findings were within normal limits. Histopathologic findings showed diffuse infiltrations of foamy cells, histiocytes and foreign body giant cells in the dermis. Electronmicroscopic examination showed that the dermal infiltrate was composed of lipid laden histoncytes showing multiple villi which indicated an activated state of histioncyte.

Bilateral and extensive XP is very rare. Only two cases have been reported in the literatures as far as we know. (Ann Dermatol 6:(1) 94~97, 1994)

Key Words: Bilateral, Extensive, High density lipoprotein cholesterol (HDL-C), Xathelasma palpe brarum

Xanthelasma palpebrarum (XP) is a benign collection of yellow, lipomatous plaque which usually occurs in the inner canthus, but frequently spread into the medial aspects of upper and lower eyelids in an arc like fashion. It is the most common form of skin xanthoma and begins in early middle age, often in woman[1]. It is usually not associated with systemic disoders of lipid metabolism[2,3]. But some recent studies have shown lower levels of high density lipoprotein cholesterol (HDL-C) in xanthelasma patients[4,5].

Few cases of extensive and bilateral XP have been reported previously [6,7]. In clinical findings, our case was unique in its shape; extensive and disfiguring bilateral involvements of four eyelids, like the eyes of a panda, which is a rare big mammal in China.

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REPORT OF A CASE

A-28-year old woman visited our hospital because of bilateral and extensive xanthelasma involving both the upper and lower eyelids (Fig.1). The patient had first noticed a pinhead sized yellowish papule on the right medial epicanthal area at the age of twenty years. The lesions progressively enlarged and extended to form large yellowish indurated plaques arround the eyes. She had taken herb medication and electrocauterization in partial area at private clinics, but no treatments were effective for her lesions. Her family history was non-contributory.

Her past histroy showed she had suffered from eclampsia eight years ago. Physical examination revealed yellowish flat topped bilateral and extensive plaques arround the eyes, like the eyes of a panda. There was also a walnut sized subcutaneous nodule on the right knee without surface changes. The patient had no complaints of ocular or general distress except for cosmetic problems.

Laboratory results were remarkable for a decrease of serum HDL-C of 27.0 mg/dl(reference

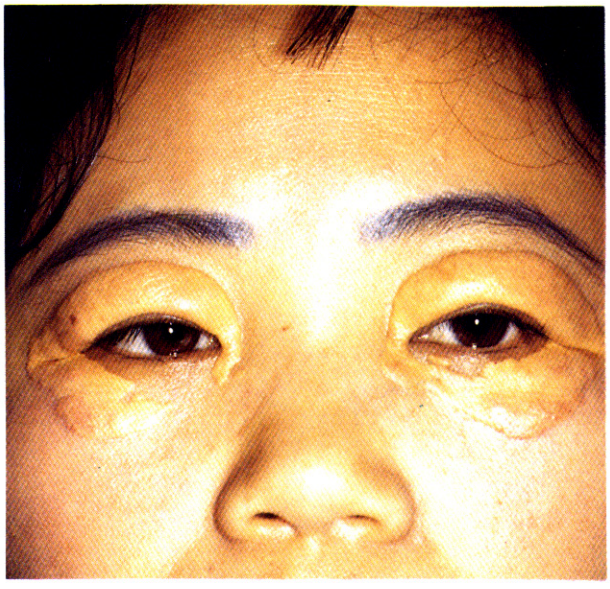

Fig. 1. Bilateral and extensive involvement of all four eyelids by firm raised yellow plaques.

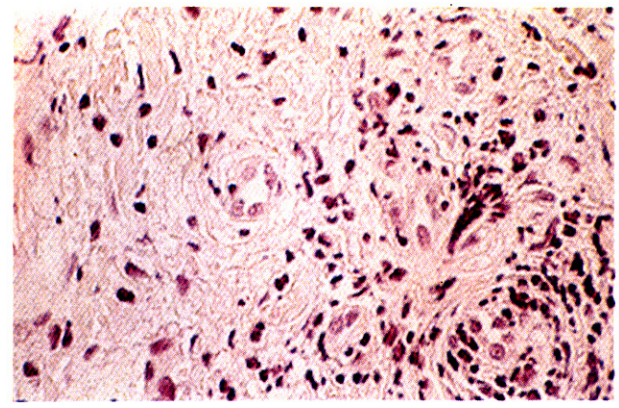

Fig. 2. The dermis were diffusely infiltrated by foamy histocytes. A few of foregin body giant cells were seen and some nuclear dusts were observed around it(HE × 400).

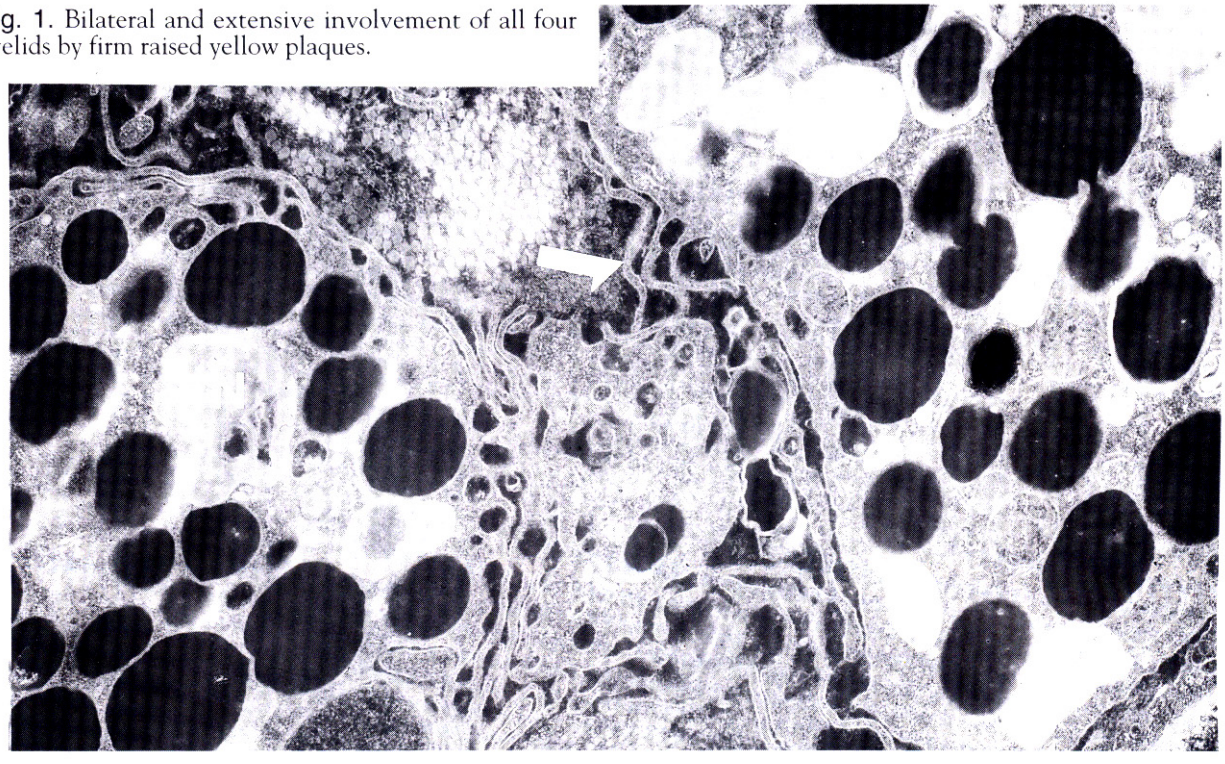

Fig. 3. The dermal infiltrate was composed of lipid laden histiocytes showing multiple villi (arrow) which indicated activated state of histiocytes. The histiocytes were filled with predominantly nonmembrane-bounded cytoplasmic lipid vacuoles (× 12,000).

values:30-38 mg/dl), and the serum cholesterol and triglyceride were in the normal ranges. The lipoprotein electrophoresis was within normal limits.

Abdominal ultrasonogram revealed a mild fatty liver and other routine examinations such as electrocardiogram and chest roentgenogram were negative. Histopathologic examination of a skin biopsy from the eyelid showed the flattened epidermis with mild hyperkeratosis. The dermis was diffusely infiltrated by foam cells and histiocytes. A few foreign body giant cells were seen and some nucle-

ar dust were observed arround it. Inflammatory cells were sparse and mainly consisted of mononuclear cells (Fig.2). There was no evidence of fibroblastic proliferation or collagenization. The subcutaneous nodule on the right knee was compatible with tuberous xanthoma histopathologically and clinically.

Electronmicroscopic examination showed that the dermal infiltrates were composed of lipid laden histioncytes which showed multiple villi formations, indicating an activated state of the histiocytes. The histiocytes were filled with predominantly nonmembrane-bounded cytoplasmic lipid vacuoles(Fig. 3).

DISCUSSION

Xanthelasma palpebrarum is a benign condition characterized by bright yellow colored papules in the upper or lower eyelids and it is a relatively common dermatologic condition. In a study of 8, 000 healthy males and females, 1.1% of the females and 0.3% of the males had xanthelasma[8]. XP is caused by the deposition of low density lipoproteins derived cholesterol esters in tissue macrophages located in the interstitial space of the dermis. It is usually not associated with systemic disorders of lipid metabolism but it may occur in patients with hyperlipidemia, especially hypercholesterolemia. The prevalence of hyperlipidemia in XP patients was reported as 5-67.9% by many authors[10-12]. But XP may be present even when serum lipid and lipoprotein levels are normal[6,7].

Recently, some studies have shown low levels of HDL-C in XP patients. Bates[4] reported a most striking lipid abnormality in XP patients. It was the preponderance of a decreased level of HDL-C. In 94% of the study population(25 female and 16 male XP patients), HDL-C values were less than the mean values of the age matched reference population. Therefore, the xanthelasma may represent a clinical indicator of decreased levels of HDL-C. Since the level of HDL-C has been shown to be inversely related to the incidence of cardiovascular disease, it is important to evaluate cardiovascular risks in XP patients[5].

Extensive and bilateral XP involving four eyelids is very rare. Two cases were reported as far as we know[6,7]. Tosti[7] reported a case of XP with extensive and disfiguring involvement of all four eyelids without abnormal serum lipid levels. The pathogensis of this condition is still obscure but several factors had been advocated. First, the peculiar structure of the palpebral dermis; it is the most delicate in the body and has rich vasculature. Second, it may be that the constant movement of eyelids(with blinking occuring 10 to 30 times a minute), in which the orbicularis muscles contract and squeeze the overlying dermis. This results in a pulsatile increase in the intracapillary pressure, causing the extravasation of lipid bearing serum into interstitium. The lipid materials are phagocytosed by histiocytes, and such histiocytes form foamy cells. Third, in most individuals, this lipid material may be removed very rapidly through the lymphatic network. If there is relative stagnation of the lymphatic network from unkown local factors, it provokes the recruitment of histiocytes to remove the interstitial lipidemic material and then forms foamy cells. Therefore, the physiologic trauma of blinkng may be a sufficient basis to produce vascular lipid material leakage and form foamy cells[6,7].

Our case was extensive and bilateral involving four eyelids. Her appearance was like a panda from China and her serum lipid levels were in normal ranges except low level of HDL-C.

REFERENCES

1. Trevor-Roper PD:The eye and its disorders. Int Ophthalmol Clin 14:362-93, 1974.
2. Vinger PF, Sachs BA:Ocular manifestations of hyperlipoproteinemia. Am J Ophthalmol 70:563-73, 1970.
3. Martinez-Rovira GR:Xanthelasma in association with hyperthyroidism. JAMA 206:1081-3, 1968.
4. Bates MC, Warren SG:Xanthelasma: Clinical indicator of decreases levels of high-hensity lipoprotein cholesterol. Southern Med J 82:570-74, 1989.
5. Watanabe A, Wakasugit T, Yoshimura A, et al: Serum lipids, lipoprotein lipids and coronary heart disease in patients with xanthelasma palpebrarum. Atherosclrosis 38:282-90, 1981.
6. Deport MJ, Jakobiec FA:Bilateral and extensive xanthelasma palpebrarum in young man. Ophthalmol 91:522-27, 1984.
7. Tosti A, Varotti C, Tosti G et al: Bilateral extensive xanthelasma palpebrarum. Cutis 41:113-14,

1988.
8. Johnsson A, Sigfusson N:Significance of xanthelasma palpebrarum in normal population. Lancet 76: 272, 1976.
9. Mendelson BC, Masson JK:Xanthelasma: Follow-up on result after surgical excision. Plast Reconstr Surg 58:535-38, 1976.
10. Montgomery H:Cutaneous metabolisms of diseases of lipid metabolism. J Clin North Amer 24:1249, 1940.
11. Epstein NN, Rosenman RH, Gofman JW:Serum lipoprotein and cholesterol metabolism in xanthelasma. Arch Dermatol Syphilol 65:70, 1952.
12. Cutis A, Burger J: Effect of feeding a lipotrophic substance to patients with xanthelasma. Arch Dermatol Syphilol 52:252, 1945.