THE CUTANEOUS MANIFESTATIONS OF NORMOCHOLESTEREMIC XANTHOMATOSES

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Xanthomatosis, the presence of clinically recognisable deposits of cholesterol and other fats in the skin, bones, and tendons, occurs in many diseases. No attempt will be made here to discuss the hyperlipidemic xanthomatoses which are secondary to other disease or those xanthomatoses characterized by a primary, usually hereditary disorder of lipoprotein metabolism, unassociated with a recognizable underlying disease (Mishkel 1968.) This discussion will be restricted to those cutaneous xanthomatoses associated with normocholesteremia as the following case represents.

Case Report:

A 50 year old Nepalese male was first seen at Shanta Bhawan Hospital on 2/1/70. He gave a history of being well until five year ago when he developed several small nodules on the medial area of his left eye lids followed by similar lesions on the right eye lids. The nodules continued to grow in size and weight until admission when he complained of visual difficulties because of difficulty raising his eyelids. About four years ago he developed similar nodular lesions bilaterally in his supraclavicular, axillary and inguinal areas. One year ago he had a left lid biopsy at the Bir Hospital which showed xanthoma. The patient had no other complaints except weak vision in his right eye since a small child.

There are no family members known to have similar lesions.

On physical examination the patient's vital signs were normal. No arcus senili were present. The corneas and conjunctiva showed no evidence of xanthomatous infiltration. The visual acuity was 20/40 in his left eye and 20/200 in the right eye. The right fundus showed perivascular cuffing, but the fundi were otherwise normal. The patient was able to open his eyelids about 1mm. He was able to look superiorly only about thirty degrees voluntarily but Bell's phenomena was intact. Other extraocular movements were intact. The entire lid surfaces had tubular, rubbery, elevated, confluent, yellowish-brown nodules several mm in height and 4-7 mm in diameter, as well as several small typical xanthelasmas. There was a 1 cm diameter rubbery subcutaneous mass just inferior and lateral to the right lateral canthus. In the supraclavicular areas he had a 4 cm diameter area of similar, but sacculated,

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Received for publication May 1970.

nodules about 4mm high. The axillary and groin regions had areas about 5 cm by 15 cm of rough papular areas about 1 mm high of similar consistency. There were no xanthomas noted on the mucus membranes, tendons, fascia, periosteum or other areas of the skin.

The rest of the physical examination was normal except a right hydrocele and a lipoma on the right anterior chest wall.

The laboratory examinations showed cholesterol levels of 68, 88, 159 and 289 mg% (normal at Shanta Bhawan Lab is 150-250 mg%). The erythrocyte sedimentation rate was elevated. The glucose tolerance test, blood urea liver function studies and electrocardiogram were normal. The chest x-ray showed an increase in the transverse diameter of the heart and an increase in the bronchial markings. Skull x-ray showed no evidence of xanthomatous deposits. A skin biopsy of the left supraclavicular nodules showed xanthomatous tissue.

The patient underwent surgery to remove the tumors from the eyelids, which operative pathology specimens showed to be xanthomatous deposits.

Discussion:

The xanthomas associated with normocholesteremia are characterized by large increases in tissue lipids, primarily cholesterol. There is no associated hyper-lipidemia and it has been proposed that there is a defect in the cholesterol metabolism which may be responsible for the formation of xanthomas. It is more widely held that these xanthomas are secondary features of a more generalized process, the etiology of which is unknown.

The system complex of granulomatous hyperplasia of the reticuloendothelial system and xanthomatous infiltrations, may manifest itself by affecting the entire organism (Hand-Schuller-Christian syndrome or Lettere-Siwe syndrome), or by affecting primarily a single organ (the bone in eosinophilic granuloma or the skin in xanthoma disseminatum and juvenile xantho-granuloma. (Nelson 1964, Smith et al 1969) The cutaneous manifestations are of two types: one, a non-specific petechial exanthem in the Hand-Schuller-Christian and Lettere-Siwe disease and secondly, the xanthomatous type disseminatum which the above case is thought to represent and will be further discussed. (Pillsbury et al 1956)

The onset of xanthoma disseminatum is gradual and the small brownish yellow papules and plaques appear primarily on the flexor surfaces, particularly in the axillary folds, groin and sides of the neck. The infiltrates may also occur in the mucus membranes of the oropharynx as well as involving the pituitary regions causing a mild diabetes insipidus (Albert et al 1968, Harrison 1962; Pillsbury et al 1955). Duke-Elder (1965) says the deposits may also occur on the lids as well as the palpebral and bulbar conjunctiva or the cornea.

Microscopic sections show fat laden histiocytes throughout the corium and also in the subcutis. (Hogan et al 1962; Pillsbury et al 1956) The cytoplasm appears foamy in paraffin sections but Sudan stain shows them to be filled with fat. (Hogan et al 1962).

The presented case is felt to represent an unusual case of xanthoma disseminatum since it also presents with several more typical palpebral xanthomas plus the very

unique tubercous deposits on the eyelids and supraclavicular areas. Arcus senilis, in older patients, and xanthoelasma may occur in the absence of hypercholesteremia but most of these patients are said to have hyperlipoproteinemia. (Stahbury et al 1960)

It should be noted that Fredrickson and Lees (1960) say that tubercous xanthomas are almost always associated with familial hyperlipoproteinemias, (but this case is thought to represent an exception).

Treatment is symptomatic and surgery is usually done for cosmetic purposes although occasionally if the xanthomas interfere with some normal body function, surgery is required. Diet therapy has not been adequately evaluated because of the rarity of cases. (Pillsbury et al)

The importance of this discussion lies in the differentiation of xanthoma disseminatum from those noncholesterol esterase xanthomas affecting the bone and entire organism or the hyperlipidemias with xanthomatous manifestations which carry a poorer prognosis.

Summary:

A case of xanthoma disseminatum is presented and is unusual in that it presents with tubercous manifestations. A short discussion of xanthoma disseminatum is presented and the differentiation of this disease from more serious disease which present in a similar cutaneous manner is stressed.

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