Eruptive xanthomas as revealing sign of type V hyperlipoproteinemia in a patient with a psychotic syndrome

E. Sordi, M. Concetta Fargnoli, O. Sordi and K. Peris

SUMMARY

We describe a 33-year-old man affected with a psychotic syndrome, who developed eruptive xanthomas on the knees, elbows, buttocks and neck. In addition, diabetes mellitus, obesity and alcohol abuse but no family history of hyperlipidemia could be identified, suggesting the diagnosis of type V pattern of hyperlipoproteinemia. Complete regression of cutaneous lesions was observed 12 weeks after dietary restrictions and medical management of diabetes. Six months after disappearance of eruptive xanthomas, the patient is still under treatment and no recurrence has been observed.

KEY WORDS

eruptive xanthomas, type V hyperlipoproteinemia, diabetes mellitus, psychotic syndrome

Introduction

Xanthomas are localized deposits of lipids in the skin and more rarely in the subcutaneous tissue, which are frequently associated with disturbances of lipoprotein metabolism (1). Metabolic lipoprotein abnormalities may be seen as manifestation of specific genetic disorders (primary hyperlipoproteinemias) or as an associated phenomenon secondary to an underlying disease such as diabetes mellitus, hypothyroidism, primary biliary cirrhosis, nephrotic syndrome and pancreatitis (secondary hyperlipoproteinemias).

Xanthomas have been clinically classified as tendinous, eruptive, tuberous, planar and generalized on the basis of anatomic distribution and mode of development (1). Eruptive xanthomas occur mainly in the setting of severe hypertriglyceridemia, high serum concentrations of chylomicrons and/or very low density lipoproteins (VLDL) and contain greater amounts of triglycerides than other types of xanthomas. They appear as pin-head or larger yellowish papules, with a slightly erythematous base, preferentially located over pressure sites such as extensor surfaces of the upper and lower extremities and buttocks (2). They are not rarely associated with pruritus. Histologic features of eruptive xanthomas include a dermal infiltrate composed of histiocytes with foamy cytoplasm admixed with neutrophils, mononuclear cells and sometimes multinucleated giant cells.

We describe a 33-year-old patient affected with a psychotic disorder who developed eruptive xanthomas caused by a severe hypertriglyceridemia secondary to diabetes mellitus; obesity and alcohol abuse were also noted. Complete regression of cutaneous lesions was observed after dietary restrictions and medical management of diabetes.

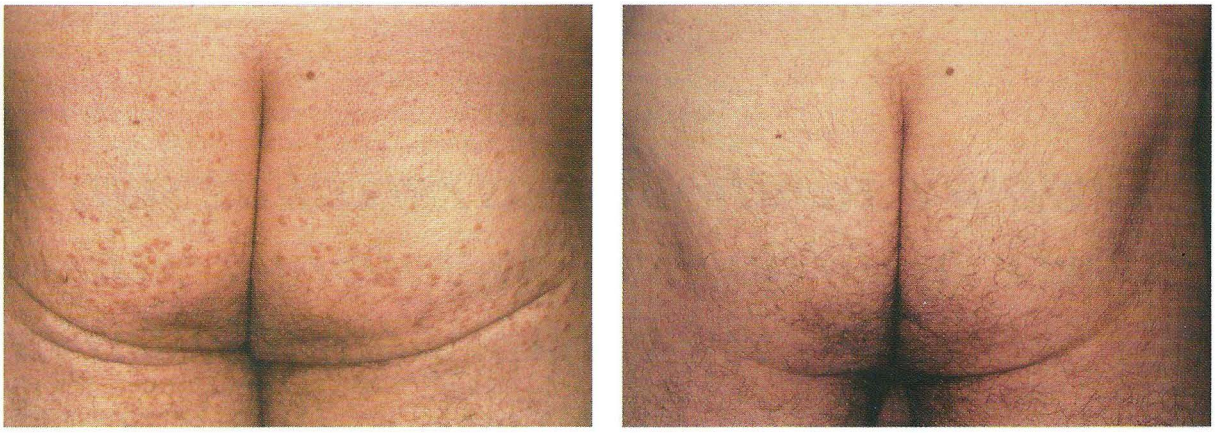

Figure 1. Eruptive xanthomas over the buttocks (a); complete regression of cutaneous lesions after dietary restrictions and medical management of diabetes (b).

Case report

A 33-year old male was examined for a disseminated, asymptomatic papular eruption, which had appeared in crops over the previous 5 months (Fig. 1a). His medical history included a psychotic disorder fulfilling DSM IV criteria for schizophrenia and has been treated since the age of 23 with chlorpromazine hydrochloride (50 mg/day). The patient was alcoholic and a heavy smoker. Family history was negative for metabolic and psychiatric disorders. Physical examination revealed obesity with hundreds of pink to yellowish, soft papules located over the buttocks, knees, elbows and neck. Hepatomegaly was also expressed. Laboratory findings included a grossly lipemic serum with markedly elevated serum levels of triglycerides 3248 mg/dl (n.v.: 50-200 mg/dl), cholesterol 609 mg/dl (n.v.: 50-200 mg/dl), serum glucose 328 mg/dl (n.v.: 70-110 mg/dl) and ALT levels 61 U/I (n.v.: 0-40 U/I). Serum lipoprotein electrophoresis showed a marked increase in chylomicrons and in the level of VLDL 700 mg/dl (n.v.: up to 40 mg/dl) as well as a decrease in high-density lipoprotein level (HDL) 23,7 mg/dl (n.v.: 35-120 mg/dl). Increase of apo-lipoprotein-B levels 264 mg/dl (n.v.: 55-135 mg/dl) was also observed. The analysis of urine disclosed 3+ glucose, 1+ protein, 1+ hemoglobin and 1+ ketonic compound. In addition, by ophthalmologic examination lipemia retinalis was detected and by ultrasonography hepatic steatosis. Histopathologic examination of the skin biopsy specimen from the buttock showed a mixed dermal inflammatory infiltrate composed of numerous, large foamy cells surrounded by lymphocytes and histiocytes (Fig. 2).

A multidisciplinary approach including the psychiatrists and the diabetologists was introduced. The patient was treated with insulin 5 to 20 IU/day and a hypo caloric diet in addition to 50 mg/day of chlorpromazine hydrochloride. Improvement of cutaneous lesions was observed after 5 weeks of combined treatment, and complete regression was achieved within 12 weeks (Fig. 1b). Serum levels of triglycerides and cholesterol significantly decreased after 4 weeks of treatment and a reduction of hepatic steatosis was detected by ultrasonography after 12 weeks. The patient is currently under treatment including dietary restrictions and 5 IU/day of insulin, no recurrence of cutaneous lesions has been observed twelve months after clearing.

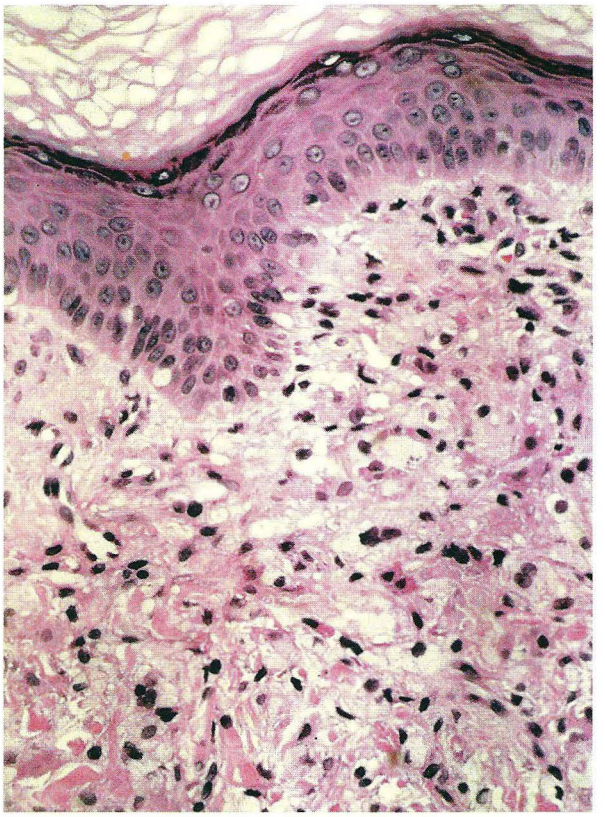

Figure 2. "Foamy cells" admixed with an inflammatory infiltrate in the superficial dermis (Hematoxylin-Eosin stain; original magnification x250).

Discussion

Eruptive xanthomas are frequently observed in the hypertriglyceridemic syndromes such as type I and V primary hyperlipoproteinemias (1-3). Type I primary hyperlipoproteinemia is an autosomal recessive disease, occurring at an early age, and is caused by an impaired lipoprotein lipase activity with defective serum removal of chylomicrons, resulting in severe hyperchylomicronemia. In type V hyperlipoproteinemia, the dual defect in triglycerides metabolism, overproduction of VLDL and defective removal of triglycerides-rich lipoproteins, results in a combined elevation of chylomicron and VLDL levels. In addition to eruptive xanthomas, of a marked hyperchylomicronemia can include abdominal pain associated with acute pancreatitis, hepatosplenomegaly and lipemia retinalis. Eruptive xanthomas have been rarely observed in patients with type IV primary hyperlipoproteinemia characterized by an accelerated hepatic production of VLDL. Finally, eruptive xanthomas have been reported in patients with acquired forms of hypertriglyceridemia secondary to uncontrolled diabetes mellitus, nephrotic syndrome, alcohol and drug abuse (estrogens, corticosteroids and 13-*cis* retinoic acid) at sites of a prior injury (1, 4-7). In our patient diabetes mellitus and obesity in addition to alcohol abuse suggested the diagnosis of secondary hypertriglyceridemia. Anamnestic data and serum lipid levels of other members of the patient's family excluded a familial occurrence. There is growing evidence that insulin deficiency and/or resistance associated with uncontrolled diabetes and insulin resistance secondary to obesity can induce hepatic overproduction of VLDL as well as a defective lipolysis of VLDL and chylomicrons. In addition, ethanol ingestion by stimulating VLDL triglycerides liver production further accentuates the lipemia (1).

Treatment of eruptive xanthomas consists of dietary restrictions and anti-hyperlipidemic drugs (8). In our patient, insulin administration in addition to diet and weight reduction induced complete regression of cutaneous lesions. In 1994, Sartori et al. described a similar case of a 32-year-old patient affected by psychosis, who developed eruptive xanthomas in the presence of type V hyperlipoproteinemia (9). In contrast to our patient a regression of cutaneous lesions was not achieved due to the low patient's compliance to therapy (9).

Conclusion

Eruptive xanthomas can occur in primary and secondary hyperlipoproteinemias, therefore a careful personal and family history as well as laboratory investigations are recommended in order to detect an underlying metabolic disorders.

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