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Case report

An Eruptive Xanthoma in A Libyan Patient: Case report and review of literature.

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Abstract
Xanthoma is a cutaneous manifestation of lipidosis characterized by quantitative changes in plasma lipoproteins and free fatty acids, leading to lipid accumulation in foam cells within the tissue. Lipids, being insoluble, require transport as lipoprotein complexes, which include chylomicrons, LDL, VLDL, and HDL. Four clinical forms of cutaneous xanthoma are associated with hyperlipidemia: tuberous, tendon, eruptive, and striatum palmare. We report the case of a 39-year-old Libyan woman with type II diabetes mellitus who presented with pruritic yellow-orange papules distributed over the body, predominantly on extensor surfaces, persisting for two years. Laboratory investigations revealed markedly elevated fasting lipid profiles, fatty liver, and bilateral pyelonephritis. Histopathology confirmed eruptive xanthoma. Management included intensified glycemic control, dietary modification, weight management, and close metabolic follow-up. Subsequent improvement in triglyceride levels was accompanied by regression of lesions. This case highlights the importance of early recognition of eruptive xanthoma as a marker of severe hypertriglyceridemia. Prompt diagnosis and treatment not only lead to the resolution of lesions but also prevent serious complications such as acute pancreatitis and atherosclerosis.
Keywords. *Xanthoma, Libyan Patient, Case report, review of literature.*

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Introduction

Cutaneous Xanthoma develops because of intercellular and dermal deposition of lipids. It is characterized by yellow to orange hue lesions, which may present with a variety of morphologies, from macules, papules, plaques, and nodules [1,2]. Xanthoma can exist in the setting of primary or secondary disorder of lipid metabolism [3-10]. Early recognition of these lesions can make a significant impact on the diagnosis, management, and prognosis of patients who suffer from an underlying disease. Prompt recognition and proper treatment can lead to xanthoma resolution as well as prevention of potentially life-threatening complications.

Hyperlipidemia is quite common in the general population. In North America alone, it is estimated that over 100 million people have an elevated serum cholesterol level > 200 mg/dl [2,15]. Despite the large number of people who suffer from hyperlipidemia, only a minority will develop cutaneous xanthoma, because the exact mechanism by which they form is not yet fully understood. It is believed that xanthoma lesions result from the permeation of circulating plasma lipoprotein through dermal capillary blood vessels, followed by their phagocytosis by macrophages, forming lipid-laden cells known as foam cells [2,7].

Certain diseases or drugs raise the triglyceride levels either by increased production, decreased catabolism, or decreased excretion; these include diabetes mellitus, obesity, pancreatitis, chronic renal failure, hypothyroidism, and treatment with estrogen, corticosteroid, or systemic retinoids [3,5,11]. The Koebner phenomenon has been reported to occur with eruptive xanthoma [6. The treatment of eruptive xanthoma involves the identification and treatment of the underlying causes of hypertriglyceridemia. Failure to recognize and treat the patient with hypertriglyceridemia could lead to complications of acute pancreatitis or atherosclerosis. Dietary and pharmacologic lowering of the circulating triglyceride to reasonable levels will result in the prompt resolution of the eruptive lesions.

Case report

A 39-year-old Libyan lady, who is a known case of diabetes mellitus type II, was admitted to the dermatology department, Tripoli central hospital, with itchy small yellowish to orange papules all over the body, mainly on the extensor surfaces of the arms and legs, for a 2-year duration. Fasting lipid profiles were very high, and the abdominal ultrasound showed an enlarged fatty liver and bilateral pyelonephritis. A biopsy was done, which confirmed the diagnosis of eruptive xanthoma.

The patient was managed with intensified glycemic control using a basal-bolus insulin regimen, counseling on a low-fat and low-simple-carbohydrate diet, weight management measures, and close metabolic follow-

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up. On subsequent follow-up, serum triglyceride levels improved markedly with gradual flattening and regression of the papular lesions over time, with no new significant eruptions reported.

This is the first case of eruptive xanthoma reported by the dermatology department, Tripoli Central Hospital.

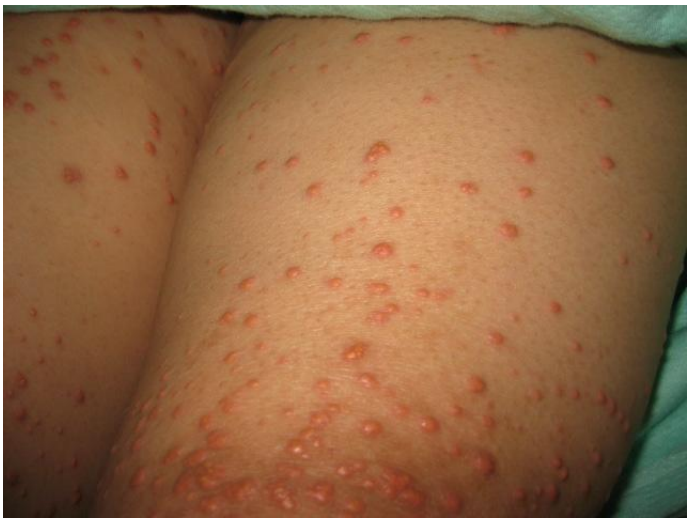

Figure 1. Yellowish-orange Papules Over the Thighs and Knees.

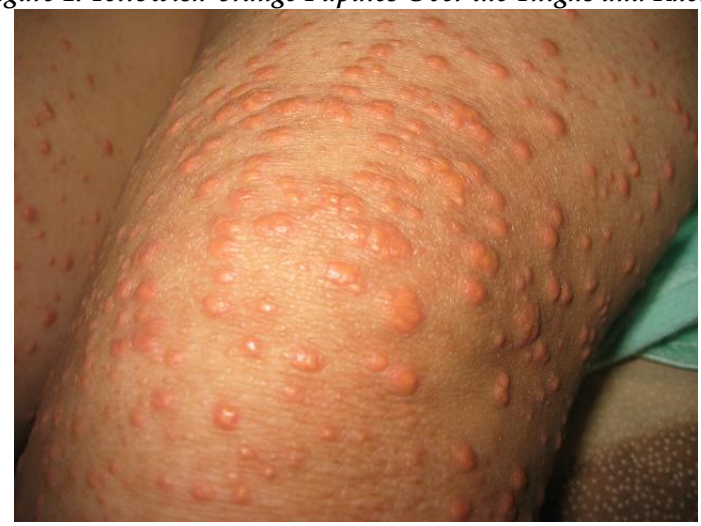

Figure 2. A close-up picture showing the yellowish papules

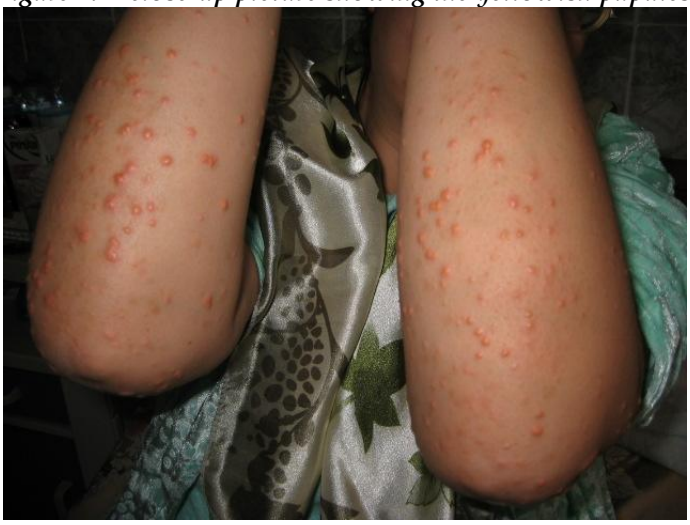

Figure 3. Same yellowish papules over the upper limbs.

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Discussion

Xanthoma is a cutaneous manifestation of lipidosis in which the plasma lipoproteins and free fatty acids are changed quantitatively. There is an accumulation of lipids in large foam cells in the tissue [3. Lipids are insoluble and must form soluble lipid-protein complexes or lipoproteins to be transportable in the plasma. The four fractions of plasma lipoproteins can be recognized through their electrophoretic patterns as: Chylomicrons, low-density lipoprotein (LDL), very low-density lipoprotein (VLDL), and high-density lipoprotein (HDL).

The lipid transport system consists of two pathways: an exogenous one beginning in the intestine and an endogenous one beginning mainly in the liver. Chylomicrons, formed from dietary triglycerides in the intestine, are a component of the exogenous pathway; they enter the peripheral circulation and deliver their triglyceride to adipose tissue and muscle. The endogenous pathway begins in the liver, where VLDLs are synthesized. Progressive hydrolysis of the triglyceride by the enzyme lipoprotein lipase and loss of the apoprotein E led to the formation of LDLs [10,6].

Increased levels of serum lipids and lipoproteins may be genetically determined (primary hyperlipoproteinemia) or secondary to other underlying diseases such as primary biliary cirrhosis, nephrotic syndrome, chronic pancreatitis, myxedema, diabetes mellitus, paraproteinemia, multiple myeloma, and drugs such as oral contraceptives and isotretinoin [10,13,14,18]. The secondary hyperlipidemia is much more common than the familial types and is the most common cause of skin xanthomatosis.

Four clinical forms of skin Xanthoma are known to be associated with hyperlipidemia: Tuberous Xanthoma, tendon Xanthoma, eruptive Xanthoma, and Xanthoma striatum palmare.

Eruptive xanthoma consists of yellow 1-4mm papules with a red halo around the base [2,5]. They appear suddenly in crops over the entire body, mainly on the extensor surface of the arms, legs, buttocks, and over pressure points [3,4]. They may occur anywhere on the body and are often pruritic [5. Eruptive xanthoma can be seen in the setting of primary or secondary hyperlipidemia [9. Triglyceride levels in patients with eruptive xanthoma are often very high [2,3]. Lesions clear rapidly when serum lipid levels are lowered. Causes for such elevation are genetic deficiency of lipoprotein lipase, familial deficiency of apoprotein C-II, familial inhibitor of lipoprotein lipase, and endogenous familial hypertriglyceridemia [2,3,5,8].

Skin biopsy is recommended to confirm the diagnosis. Xanthoma shows dermal foamy cells with various degrees of inflammatory infiltrate. A blood sample for fasting lipid profiles (cholesterol and triglyceride levels) should be obtained. If hyperlipidemia exists, the plasma lipoprotein pattern should be further determined. To rule out secondary hyperlipidemia and paraproteinemia, blood chemistry analysis for diabetes mellitus, liver, kidney, and thyroid function should be made, and serum immunoelectrophoresis should be performed [1.

Treatment is important not because of problems posed by xanthomas but because of associated atherosclerosis, hepatosplenomegaly, abdominal pain, and pancreatitis [18].

If a secondary condition is responsible for the hyperlipoproteinemia, the condition should be treated (e.g., insulin for diabetes or thyroid hormone replacement for hypothyroidism). Still, if no secondary condition is found, then diet and antihyperlipidemic drugs (drug lowering the serum lipid) such as HMG-CoA reductase inhibitors, bile acid-binding resins, nicotinic acid [12], fibric acid derivatives, and antioxidants such as vitamin E are the mainstays of therapy [2,4]. Correction of the underlying lipid disorder leads to the eventual resolution of xanthoma in many patients. Dietary measures are important components of successful lipid-lowering therapy. Decreasing total caloric intake and achievement of ideal body weight alone can make a significant impact on lipid levels in some patients. Dietary fat restriction to less than 30% of the total caloric intake should be attempted.

Monounsaturated fats, such as olive oil, should comprise the majority of the fat intake. Alcohol intake avoidance is essential, especially in patients with hypertriglyceridemia [7,15].

Conclusion

Early diagnosis and treatment of the Xanthoma is important not because of problems posed by xanthomas but because of associated atherosclerosis, hepatosplenomegaly, abdominal pain, and pancreatitis.

Conflict of Interest

The author declares no conflict of interest related to this case report.

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Ethical Approval

This case report was conducted in accordance with institutional ethical standards and the principles of the Declaration of Helsinki. Written informed consent was obtained from the patient for publication of this case and accompanying images.

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