Eruptive Xanthomas Masquerading as Molluscum Contagiosum

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KEY WORDS

behavior eating, BMI, dermatology, autism

ABBREVIATION

HbA1c—hemoglobin A1C

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abstract

Eruptive xanthomas are cutaneous manifestations of hyperlipidemias in which lipids accumulate in large foam cells within the skin. They classically present as crops of 1- to 4-mm yellow-orange papules and are often associated with extreme hypertriglyceridemia. We describe a 12-year-old boy with autism who was thought to have widespread molluscum contagiosum for a year before dermatologic consultation was obtained. Recognition of eruptive xanthomas led to the discovery of massive hypertriglyceridemia (serum triglycerides 6853 mg/dL) and diabetes mellitus. Through medical intervention, including insulin and fenofibrate therapy, and dietary modification with weight loss, the xanthomas cleared during the subsequent months, and his serum triglyceride levels nearly normalized. *Pediatrics* 2014;134: e257–e260

Eruptive xanthomas are classically crops of 1- to 4-mm yellow-orange papules, commonly located on the hands, buttocks, and extensor portions of the extremities. They may koebnerize and often have an erythematous base early in the eruption. Eruptive xanthomas are most commonly associated with primary and secondary hypertriglyceridemia, with triglyceride levels often >2000 mg/dL. Evaluation for familial hyperlipoproteinemia and successful lowering of triglyceride levels are critical for resolution of eruptive xanthomas.

PRESENTATION

A 12-year-old boy with autism and a history of hypertension was referred to the dermatology clinic for evaluation of presumed molluscum contagiosum that had been present for a year. The eruption initially involved the upper extremities and had since spread to involve the trunk, buttocks, thighs, and neck. He occasionally scratched the lesions, but the eruption was otherwise asymptomatic.

Among his behavioral difficulties was an aversion to all foods except bananas, applesauce, sugar-free JELLO, yogurt, cream cheese, cookies, and occasional watermelon, but his hyperphagia led to being overweight. Almost 2 years before his cutaneous eruption developed, he had a BMI of 27.95 (>95th percentile) and markedly elevated serum triglyceride levels (3463 mg/dL; normal: 24–145 mg/dL), cholesterol (329 mg/dL; normal: <199 mg/dL) and hemoglobin A1C (HbA1c; 6.2%; normal: 4.5%–5.6%), with low high-density lipoprotein cholesterol levels (<5 mg/dL; normal: >35 mg/dL). He was prescribed fish oil capsules, but the boy's mother found them difficult to administer, and few capsules were given. The boy had no subsequent laboratory testing, and he was then lost to follow-up. The patient had recently been prescribed citalopram and then sertraline for behavioral issues, although these were initiated after his extreme hypertriglyceridemia was detected. He had also recently been prescribed clonidine for hypertension. His family history was significant for hypercholesterolemia and mild hypertriglyceridemia in the father, paternal grandfather, and paternal aunts. Affected family members have been able to control the hyperlipidemia with oral medications and diet.

The boy was obese (BMI of 26.6 kg/m^2; >95th percentile) and unable to verbally communicate. Physical examination revealed normal body fat distribution and showed hundreds of discrete pink to yellow, smooth-surfaced, firm, monomorphous papules on the buttocks, posterior thighs, back, and arms (Fig 1). Some had a central white core, and many were agminated. No xanthelasma was noted. Mildly hyperpigmented, velvety-feeling thickened skin was noted on the nape and the axillae, suggestive of acanthosis nigricans. He had no palpable hepatomegaly. Given the classic clinical appearance of xanthomas rather than molluscum, a biopsy was deferred, and testing of fasting serum lipids was performed, which revealed a triglyceride level of 6853 mg/dL, total cholesterol of 649 mg/dL, high-density lipoprotein cholesterol <5 mg/dL, and HbA1c 11.2% (normal: 4.5%–5.6%). He was also noted to have a fasting serum glucose of 313 mg/dL (normal: 60–100 mg/dL) and an insulin level of 53.5 μU/mL (normal, 2–17 μU/mL), which suggested that he had type 2 diabetes. His serum chemistry panel was remarkable for a bilirubin of 1.2 mg/dL (normal, 0.2–1.0 mg/dL), alanine aminotransferase 161 IU/L (normal, 2–30 IU/L), and aspartate aminotransferase 72 IU/L (normal: 16–52 IU/L). Serum amylase, lipase, blood urea nitrogen, creatinine, and thyroid function studies were normal.

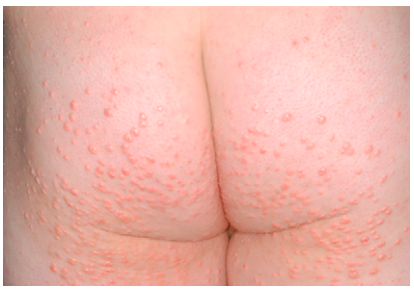

FIGURE 1
Eruptive xanthomas. Discrete pink to yellow, smooth-surfaced, firm, monomorphous papules on the buttocks at presentation to our clinic.

The patient was admitted to the hospital for acute management of hyperglycemia and was treated with insulin, metformin 500 mg twice daily, and daily enalapril 20 mg, clonidine 0.2 mg, sertraline 100 mg, and fenofibrate 54 mg. Dietary modification was also instituted at this time. Within 1 month of this regimen, his triglycerides had decreased to 396 mg/dL, and serum aspartate aminotransferase and alanine aminotransferase had normalized. During the next several months, his xanthomas flattened and became less opalescent. By 5 months after initiation of therapy, his xanthomas had virtually disappeared, his BMI (25.8 kg/m^2) and triglycerides (253 mg/dL) had improved, and his blood pressure (115/51 mm Hg) and HbA1c (5.1%) had normalized.

DISCUSSION

The patient was referred with a presumed diagnosis of molluscum contagiosum by his primary medical provider. Eruptive xanthomas and molluscum contagiosum papules (example in Fig 2) have distinctive clinical features that allow differentiation (Table 1); dermatologic consultation can aid in the diagnosis. Molluscum is a self-limited infection, which is cleared by immunologic response after ~6 to 24 months.[1] Squash preparation, in which the contents of the molluscum central dell are extruded and stained with Giemsa stain, and biopsy will show characteristic microscopic round inclusion bodies (Henderson-Patterson bodies; Fig 3A). In contrast, eruptive xanthomas on histology show lipid filled macrophages (Fig 3B).

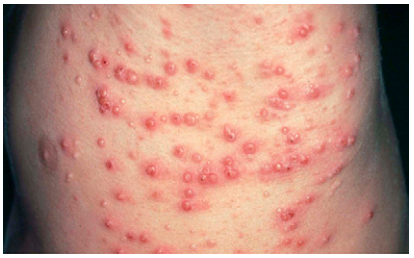

FIGURE 2
Lesions in a severe case of molluscum contagiosum demonstrating the typical firm, dome-shaped papules with central umbilication.

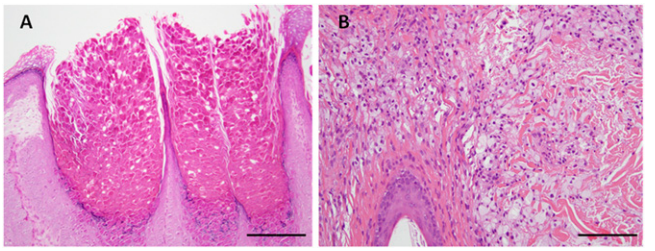

FIGURE 3
Histopathologic appearance of molluscum and xanthoma (representative skin biopsy specimens). A, Characteristic microscopic round inclusion bodies or Henderson-Patterson bodies of molluscum contagiosum. Bar = 200 μm. B, Eruptive xanthoma, showing foamy macrophages in the dermis. Bar = 100 μm.

Eruptive xanthomas are a cutaneous sign of excessive serum levels of triglyceride-rich, very low-density lipoproteins and chylomicrons. Although rare in children, eruptive xanthomas occur as a manifestation of primary genetic or secondary hyperlipidemias, a variety of systemic disorders, and as a complication of drug administration (Table 2). Recognition of eruptive xanthomas in patients with extreme hypertriglyceridemia is critical because of potentially life-threatening complications such as acute pancreatitis.

Uncontrolled diabetes mellitus (both type I and type II) and metabolic syndrome have been associated with eruptive xanthomas[2–4] as a result of insulin resistance and impaired clearance of triglycerides by lipoprotein lipase.[5] In adults, heavy alcohol intake and medications that increase endogenous triglycerides have been associated with eruptive xanthomas, most commonly estrogens, isotretinoin, glucocorticoids, olanzapine, and antiretroviral agents.[6,7] The selective serotonin reuptake inhibitor medications sertraline and citalopram may increase triglyceride levels, and eruptive xanthomas have been described in patients taking sertraline.[8–10] Although our patient's hypertriglyceridemia was evident before starting either sertraline or citalopram, we speculate that these medications may have exacerbated the hypertriglyceridemia.

Laboratory evaluation for lipid levels should be obtained after a 12-hour or overnight fast. To elucidate the underlying cause of the hyperlipoproteinemia, our patient underwent further testing, but analysis was complicated by his significant clinical and laboratory improvement from previous intervention by the time of this diagnostic testing. His original presentation showed extreme elevation of triglycerides and elevation in chylomicron levels, which could have reflected an underlying unidentified genetic predisposition, in addition to newly developed metabolic syndrome and his SSRI medication use. Although the family has been offered gene testing, they have not expressed interest in further elucidating an underlying genetic cause.

Treatment of eruptive xanthomas is focused on lowering triglycerides with medications such as fibrates, omega-3-fatty acids, and nicotinic acid. Nutritional support with dietary modification and optimizing treatment of diabetes mellitus, as appropriate, usually leads to resolution of xanthomas within several weeks to months.[11] Because chylomicrons are formed in the small intestine after absorption of fat, reduction or near total elimination of dietary fat should be advised.

TABLE 1 Clinical and Histologic Characteristics of Eruptive Xanthoma Versus Molluscum Contagiosum

	Eruptive Xanthoma	Molluscum Contagiosum
Cause	Hypertriglyceridemia	Poxvirus
Morphology	Firm, dome-shaped lipid-filled papules; Monomorphous	Firm, dome-shaped papules Not monomorphous
Usual size	1–4 mm	1–8 mm
Central core or umbilication	Occasional	Often
Confluence of papules	Occasional	Occasional
Color	Skin-colored to yellow-orange	Skin-colored to pink
Koebnerization	Yes	Yes
Inflammation	None	Often, including surrounding dermatitis
Histopathology	Lipidized dermal macrophages	Epidermal intracellular invasion with Henderson-Patterson bodies

TABLE 2 Causes of Eruptive Xanthomas Described in Children

Primary hyperlipidemias[11–14]
Type I hyperlipoproteinemia
Type Ia: lipoprotein lipase deficiency
Type Ib: apolipoprotein C-II deficiency
Type Ic: GPIHBP1 deficiency
Type 1d: Apolipoprotein A-5 mutations
Type 1e: lipase maturation factor 1 deficiency
Type II hyperlipoproteinemia (eruptive xanthomas rare)
Hypercholesterolemia, homozygous familial
Sitosterolemia
Type III hyperlipoproteinemia
Apolipoprotein E2 variants (or mutations)
Type V hyperlipoproteinemia
Secondary to poorly controlled diabetes mellitus and drugs such as estrogens, isotretinoin, HIV-1 protease inhibitors for HIV infection
Sirolimus for organ transplantation.
Other genetic or acquired lipodystrophies
Other secondary hyperlipidemias
Alagille syndrome[15]
Biliary cirrhosis, primary[16]
Hypothyroidism[17]
Nephrotic syndrome[18]

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