

Eruptive Xanthomas in a Patient with Severe Hypertriglyceridemia

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Introduction

- Eruptive xanthomas are associated with primary dyslipidemia disorders as well as secondary causes of hypertriglyceridemia.
- Acute management of severe hypertriglyceridemia involves reducing serum triglycerides to prevent acute pancreatitis, while long-term therapies focus on lifestyle modification and management of chronic medical conditions.

Case Description

- A 50 year-old obese woman with well-controlled HIV, type 2 diabetes, hypothyroidism and hyperlipidemia, presents with 3 weeks of a pruritic rash on her elbows, knees and buttocks.
- She endorsed poor adherence with her levothyroxine, metformin and glipizide, and was intermittently taking co-formulated efavirenz/emtricitabine/tenofovir for HIV.
- She had no symptoms of hypothyroidism, and had no family history of heart disease or hyperlipidemia.
- Physical exam revealed crops of firm, yellow papules on an erythematous base (diameter 3-4mm) distributed on her buttocks and the extensor surfaces of her elbows and knees bilaterally (Figures 1 and 2).
- The patient was diagnosed with eruptive xanthomas in the setting of severe hypertriglyceridemia due to profound insulin resistance, with secondary pseudohyponatremia.

Hospital Course

- The patient responded well to a combination of high dose atorvastatin, subcutaneous heparin, an insulin drip, aggressive fluid resuscitation and a period of fasting.
- Her antiretroviral therapy was thought to be contributing to her metabolic syndrome and was discontinued by Infectious Disease with plans for outpatient follow-up for alternative therapy.
- Her serum triglyceride level improved to 1454mg/dL and her total cholesterol level decreased to 517mg/dL after 6 days of treatment. She never developed signs of pancreatitis (Table 1).
- She was discharged on hospital day 7 with atorvastatin and insulin glargine, and was counseled on lifestyle changes including exercise, weight control and a low-fat diet.



Figures 1 and 2: Appearance of papules on the patient's knees and elbows

Discussion

- The serum triglyceride level reflects the concentration of very low-density lipoproteins (VLDL) and chylomicrons. Triglycerides interact with lipoprotein lipase or pancreatic lipase to produce glycerol and free fatty acids (FFA).
- Severe hypertriglyceridemia (>1000 mg/dL) is a risk factor for acute pancreatitis due to high local concentrations of FFA when triglycerides are hydrolyzed in the pancreas.
- Eruptive xanthomas are grouped yellow papules that appear on areas of pressure or trauma in association with markedly elevated triglyceride levels.
- Severe hypertriglyceridemia occurs with hyperlipidemia syndromes (Fredrickson-Levy types I, IV, and V) or secondary to obesity, type 2 diabetes mellitus, hypothyroidism, nephrotic syndrome, cholestatic liver disease, and alcoholism, or as a side effect of certain medications (thiazides, beta blockers, estrogens, retinoids, corticosteroids, antiretroviral therapy, or antipsychotics).
- Heparin and insulin stimulate lipoprotein lipase activity, resulting in accelerated chylomicron and LDL metabolism. Insulin also decreases hormone sensitive lipase activity in adipocytes, thereby lowering the circulating FFA concentration and reducing the risk of acute pancreatitis.
- Long-term management of hypertriglyceridemia involves lifestyle modifications, including a low fat diet and exercise, and treatment of underlying chronic medical conditions to reduce the risk of cardiovascular disease.

Table 1	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6
Triglycerides (mg/dL)	>4425	>4425	3628	2968	2280	1484
Total Cholesterol (mg/dL)	1052	1032	739	692	607	517
HDL (mg/dL)	49	91	55	47	43	35
LDL (mg/dL, direct)	Unable to measure	Unable to measure	Unable to measure	156	192	241

119 | 86 | 14 | 565 | 16.9
 3.9 | 19 | 0.5 | 4.8 | 158
 43.1

Serum Osm: 311 mOsm/kg Lipase: 67 U/mL
 CD4 count: 650 Hb A1c: 14.7%
 HIV Viral Load: None detected TSH: 2.95 U/mL

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