International Journal of Science and Research (IJSR)
ISSN: 2319-7064
SJIF (2022): 7.942

Case Report: An Unusual Case of Eruptive Xanthoma Mimicking Tophaceous Gout

Nithin K M[1], Neeraj R Shetty[2]

Department of Orthopaedics, Kurla babha hospital, Mumbai, Maharashtra, India
Corresponding Author E-mail: *mnithin365[at]gmail.com*

Abstract: ***Eruptive xanthomas are cutaneous lesions which are rare but their presence indicates severe metabolic disease. Hence such patients should be thoroughly investigated to prevent misdiagnosis of underlying diseases. They can mimic tophaceous gout. We present a 53 yr old male with eruptive cutaneous lesion in the left elbow since 3 months and chest pain since 2 days. We suggested getting his ECG done and sent his routine blood investigations along with lipid profile. His lipid profile revealed raised cholesterol levels along with ECG changes. He had to undergo angioplasty for the same. On receiving treatment for high lipids his skin lesion also decreased in size.***

Keywords: Eruptive xanthoma, tophaceous gout, chest pain, hyperlipidemia

1. Introduction

Xanthomas are cutaneous lesions developing as a result of local storage of lipids. Xanthomas can be classified according to the clinical presentation of the individual lesion or by the mode of appearance. Eruptive xanthomas are uncommon and represent an important clinical sign for serious metabolic disorders. Low-density lipoprotein particles are preferably stored in foam cells and giant cells. A particular subtype is neutrophilic eruptive xanthomas, mostly but not exclusively seen in cases of immunosuppression or immunodeficiency.

Clinically, the lesions appear as rapidly evolving papules with a red-to-yellowish hue and are about 1-5 mm in diameter. They generally form across the extensor surfaces of the arms and legs, as well as across the buttocks, and may involve palmoplantar skin along the creases. The lesions can be tender, often they remain asymptomatic, but early lesions may be pruritic. Eruptive xanthomas may be associated with diabetes mellitus, hypercholesterolemia, hypertriglyceridemia, lipemia retinalis, or hepatosteatosis. The recognition of underlying metabolic disorders is necessary to prevent conceivable fatal medical conditions such as coronary artery disease or pancreatitis.

2. Case Report

A 53 yr old male presented to kurla babha hospital OPD with chief complaints of skin lesion in the left elbow since 3 months and chest pain since 2 days. He had history of hypertension. There was no history of trauma and significant family history. He had no history of alcohol or tobacco intake. On clinical examination we noted a subcutaneous swelling in the left elbow which was yellowish in colour, nontender with no local rise in temperature. We sent his blood investigations which included serum lipids and uric acid. Uric acid was tested to rule out tophaceous gout. We also got his ecg done since he had chest pain. Blood investigations revealed a twofold rise in serum lipids, Total cholesterol was 313, LDL cholesterol was 243. Uric acid was 5.4 which is normal. ECG showed signs of ischaemic heart disease with acute MI. He underwent angioplasty for the same. He was started on medications to lower his serum lipids. After 1 month the skin lesion reduced in size.

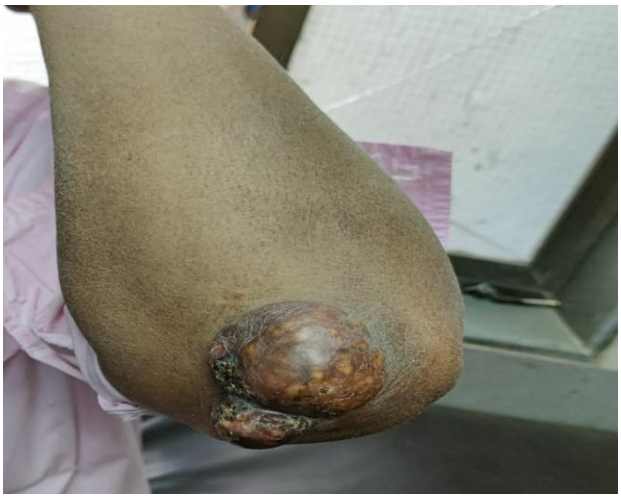

Figure: Clinical image of skin lesion

3. Discussion

Eruptive xanthomas may be the result of a variety of metabolic disorders, medical drugs (glucocorticoids, retinoids, estrogens), secondary insulin resistance, and alcohol abuse. The most common causes represent chylomicronemia and hypertriglyceridemia either due to lipoprotein lipase deficiency (Type I hyperlipoproteinemia) or familial hyperlipoproteinemia (Type V hyperlipoproteinemia). In diabetic patients unresponsive to insulin, an acquired lipoprotein lipase deficiency may develop. Rare syndromes associated with eruptive xanthomas are the Berardinelli-Seip syndrome, the von Gierke syndrome (glycogen storage disease type I), or the primary lipoprotein-lipase deficiency.

LDL is one of the major carriers of cholesterol. Circulating

LDL particles in the blood stream realise the cholesterol transport to those cells that are requiring lipids. These cells express higher levels of the LDL-receptor (LDLR) that mediates uptake of LDL particles by receptor-mediated endocytosis. For plane xanthomas, development of foam cells is associated with the uptake of LDL particles that are modified due to increased residence time in plasma by over-expressed macrophage scavenger receptor (SR). Sortilin, a transmembrane receptor expressed by macrophages that binds LDL and support intracellular LDL uptake, is another driver for their transformation into foam cell. In eruptive xanthomas, foam cells may develop due to inflammatory stress. Thereby, LDL receptor negative feedback regulation induced by intracellular cholesterol becomes disrupted.

Diagnosis of underlying metabolic disorders and their correction by treatment is an appropriate method to improve eruptive xanthomas. In this study we realise how important it is to correctly diagnose eruptive xanthoma and how to differentiate it from tophaceous gout. We also realise there are multiple metabolic syndromes which can present as xanthomas. Early diagnosis and treatment will prevent mortality and morbidity.

References

[1] Uwe wollina, andre koch, gesina hansel: eruptive xanthoma case report: 2018 nov, 2152-2154 oamjms.
[2] Zak A, Zeman M, Slaby A, Vecka M. Xanthomas: clinical and pathophysiological relations. *Biomed Pap Med Fac Univ Palacky Olomouc Czech Repub.*2014; 158 (2): 181–8. https: //doi. org/10.5507/bp.2014.016 PMid: 24781043.
[3] Smith KJ, Yeager J, Skelton HG. Histologically distinctive papular neutrophilic xanthomas in HIV-1+patients. *Am J Surg Pathol.*1997; 21 (5): 545–9. https: //doi. org/10.1097/00000478-199705000-00006 PMid: 9158678.
[4] Zabeen B, Khaled Z, Nahar J, Baki A, Amin F, Akhter S, Begum T, Azad K, Nahar N. Hypertriglyceridemia associated with eruptive xanthomas and lipemia retinalis in newly diagnosed diabetes mellitus. *Mymensingh Med J.*2013; 22 (3): 591–5. PMid: 23982556.
[5] Brazzelli V, Rivetti N, Carugno A, Barruscotti S, Croci GA, Perani G, Borroni G. Eruptive xanthomas after extensive tattooing: a case report and literature review. *G Ital Dermatol Venereol.*2015; 150 (6): 770–1. PMid: 25014584.
[6] Gao H, Chen J. Eruptive xanthomas presenting in tattoos. *CMAJ.*2015; 187 (5): 356. https: //doi. org/10.1503/cmaj.140383 PMid: 25623644 PMCid: PMC4361110.
[7] Saraceno R, Dattola A, Pietroleonardo L, Pitocco R, Fida M, Chimenti S. Eruptive xanthomas and pancreatitis: clinical, dermatoscopy, confocal and pathological correlation. *G Ital Dermatol Venereol.*2017; 152 (4): 394–6. PMid: 28621119.
[8] Seremet S, Gurel MS. Miscellaneous skin disease and the metabolic syndrome. *Clin Dermatol.*2018; 36 (1): 94–100. https: //doi. org/10.1016/j. clindermatol.2017.09.016 PMid: 29241760.
[9] Machado PV, Daxbacher EL, Obadia DL, Cunha EF, Alves Mde F, Mann D. Do you know this syndrome?Berardinelli-Seip syndrome. *An Bras Dermatol.*2013; 88 (6): 1011–3. https: //doi. org/10.1590/abd1806-4841.20132178 PMid: 24474121 PMCid: PMC3900363.
[10] Zakon SJ, Oyamada A, Rosenthal IH. Eruptive xanthoma and hyperlipemia in glycogen storage disease (von Gierke's disease) *AMA Arch Derm Syphilol.*1953; 67 (2): 146–51. https: //doi. org/10.1001/archderm.1953.01540020024005 PMid: 13029898.
[11] Gagné C, Brun LD, Julien P, Moorjani S, Lupien PJ. Primary lipoprotein-lipase-activity deficiency: clinical investigation of a French Canadian population. *CMAJ.*1989; 140 (4): 405–11. PMid: 2914262 PMCid: PMC1268664.
[12] Giry C, Giroux LM, Roy M, Davignon J, Minnich A. Characterization of inherited scavenger receptor overexpression and abnormal macrophage phenotype in a normolipidemic subject with planar xanthomas. *J Lipid Res.*1996; 37 (7): 1422–35. PMid: 8827515.
[13] Patel KM, Strong A, Tohyama J, Jin X, Morales CR, Billheimer J, Millar J, Kruth H, Rader DJ. Macrophage sortilin promotes LDL uptake, foam cell formation, and atherosclerosis. *Circ Res.*2015; 116 (5): 789–96. https: //doi. org/10.1161/CIRCRESAHA.116.305811 PMid: 25593281 PMCid: PMC4602371.
[14] Ye Q, Lei H, Fan Z, Zheng W, Zheng S. Difference in LDL receptor feedback regulation in macrophages and vascular smooth muscle cells: foam cell transformation under inflammatory stress. *Inflammation.*2014; 37 (2): 555–65. https: //doi. org/10.1007/s10753-013-9769-x PMid: 24297394.