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Normolipemic Tendon and Tuberous Xanthomas(an uncommon occurrence)

Pathology

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ABSTRACT

INTRODUCTION:
Xanthomas are localized lipid deposits with in organs that may manifest as papules , plaques or nodules in skin. the subtype of xanthoma provides a clue to the underlying lipid abnormality. accurate diagnosis of xanthomas is important because it can lead to identification and treatment of underlying disease.

OBJECTIVE:
The objective of study is ot describe clinical and pathological finding of a man who developed tendon and tuberous xanthomas accompanied by normal plasma lipids , which is an uncommon occurrence .

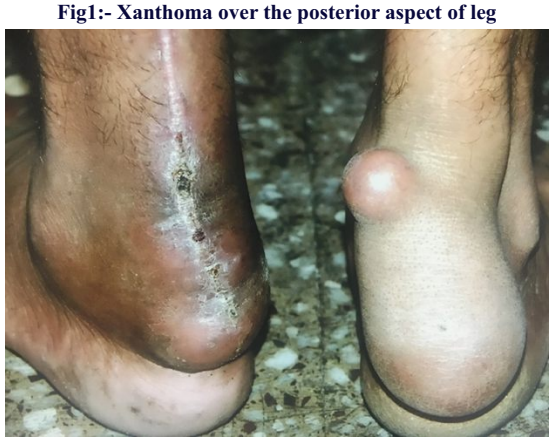
METHORDS:
We present a case of middle aged men who presented with multiple nodules over extremities and few over trunk . Routine investigations were done complete blood counts, LFT,RFT, blood sugar, lipid profile. Histological examination of nodule was done.
RESULTS--> Based on the clinical presentation and histopathological examination of nodule diagnosis of normolipemic xanthomatosis was established which is a rare occurrence.

CONCLUSION:
Multiple tendon and tuberous xanthomas in a patient with normal lipid metabolism with no associated systemic disorders is an uncommon occurrence. so we present this case to emphasise the importance of considering this disease entity in a patient with normal lipid profile.

KEYWORDS

nonlipemic, tendon xanthoma, tuberous xanthoma, xanthomatosis.

Fig1:- Xanthoma over the posterior aspect of leg



INTRODUCTION:

Xanthomas are benign plaques, papules or nodules characterized by accumulation of lipid laden macrophages that develop in skin and subcutaneous tissues (1). Tuberous Xanthomas are firm painless yellow nodules most commonly seen over extensor aspects of limbs and buttocks(2) and Tendon Xanthomas are seen most commonly over Achilles tendon and extensors of fingers. Both tendon and tuberous xanthomas are seen associated with type II(familial hypercholesterolemia or familial deficiency of apo B-100) where patients present with hypercholesterolemia and type III hyperlipidemias (familial dysbetalipoproteinemia, apoE deficiency) where patient present with hypercholesterolemia and hypertriglyceridemia (3,18). The subtype of xanthoma provides a clue to the underlying abnormality. Accurate diagnosis of xanthomas is important because it can lead to the identification and treatment of underlying disease.

The pathogenic mechanism that leads to cutaneous xanthomas are not fully understood and may differ based upon etiology and type of xanthoma. For example in xanthomas occurring in association with hyperlipidemia, it is hypothesized that when serum levels of lipoproteins are substantially elevated, extravasation of lipoprotein through dermal capillary blood vessels with subsequent engulfment by macrophages leads to the lipid-laden cells found in xanthomas(4,5).

Cause can be primary or secondary hyperlipidemias. Primary hyperlipidemia results from genetic defects in receptors, receptor ligands or enzymes involved in lipid metabolism and secondary hyperlipidemia include underlying disease states and medications and physiological states associated with hyperlipidemia include obesity, diabetes mellitus, hypothyroidism,nephrotic syndrome, cholestasis and pregnancy(6-11). Medications that may led to hyperlipidemia include estrogen, tamoxifen, prednisone,oral retinoids, cyclosporine, olanzapine and protease inhibitors(12-14).

We present a case of multiple tendon and tuberous xanthomas in a subject with no associated systemic disease which is an uncommon occurrence. The aim of this report is to emphasize the importance of considering this disease entity in a patient with normal lipid profile.

CASE REPORT:

A 39 year old male presented with a 5 year history of multiple , painless nodules over the extremities and trunk. Nodules were gradually increasing in size over time. On physical examination patient was otherwise healthy looking with normal built, slight pallor was present. Nodules were yellowish, firm, nontender ranging in size from 1 to 3.5 cm, largest one was over the ankle(fig1). On systemic examination no abnormality was detected. Xanthelasmas were absent. There was no history of trauma , no history of drug intake, no relevant family history. Investigations including complete blood counts, liver function tests, renal function tests, blood sugar, lipid profile ,thyroid profile were within normal limits. Serum protein electrophoresis showed normal pattern. Histopathological examination from one of the nodule showed lipid laden foam cells, with large cholesterol clefts along with foreign body type giant cells(fig. 2).

Repeat lipid profile was done which was normal again. Patient was

treated with surgical removal of larger nodules and started with lipid lowering drugs despite of normal lipid profile. We lost the track of patient as he stopped coming for followup.

RESULT:

After studying the clinical features that is presence of xanthomas, laboratory finding i.e normal lipid profile, histopathological examination in which we find Xanthoma cells and cholesterol clefts and coorelating with the other cases, we present a case of multiple tendon and tuberous xanthomas in a subject with no associated systemic disease which is an uncommon occurrence.

DISCUSSION:

Xanthomas are tumors or infiltrates characterized by collection of foamy histiocytes. Xanthomas are cutaneous clue to the possible presence of hyperlipidemia. Based on their clinical appearance they are classified as eruptive, tuberous, tendinous , planar, xanthelasmas. Hyperlipidemia especially hypercholesterolemia may result in the deposition of cholesterol in various tissues giving rise to xanthoma formation. Tendon and tuberous xanthomas are usually found in type a familial hypercholesterolemia.(3,18). Normal lipid profile is seen in our case.

Tuberous xanthomas are localized to the extensor surface of elbow, knees, knuckles and buttocks and tendon xanthoma are localized over achlilles tendon and extensor tendon of hand(15). In our case cutaneous finding showed involvement of extensor aspect of limbs , achlilles tendon and extensor tendon of hands sparing buttocks , axillary and inguinal folds.

Histopathologically xanthomas are characterised by presence of lipid – laden macrophages in dermis with cholesterol clefts and foreign body type giant cells, which was also seen in our patient

fig2 :- Multinucleated giant cells, cholesterol clefts

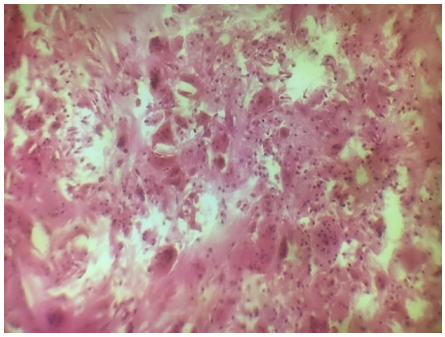
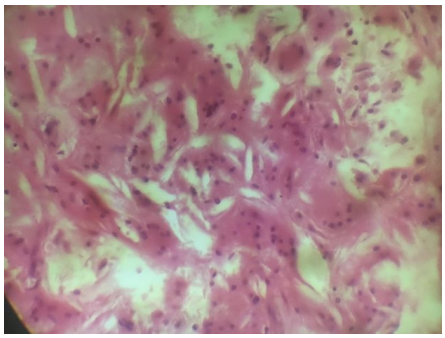


fig3:- Xanthoma cells, cholesterol clefts



Studies have shown xanthomas associated with underlying disease process such as diabetes mellitus, hypothyroidism,nephrotic syndrome, pancreatitis or drug therapy(4-11)). In our case there was no such underlying disease or no drug history. Some studies have pointed out that trauma can also elicit xanthoma in normolipemic patient. however no history of trauma was present in our case.

It has been suggested that three pathogenic processes could be responsible for normolipemic xanthomatosis(4). 1. First group includes disorders with accumulation of unusual lipids other then cholesterol eg. cholestanol in cerebrotendinous xanthomatosis. 2. In Second group planar xanthomas may be seen over the face and trunk in patients with lymphoproliferative diseases such as multiple myeloma or lymphomas. Xanthoma formation may be due to cutaneous lymphoreticular hyperplasia with secondary xanthomatisation or to paraproteins interacting with lipoprotein receptors or blocking enzymes(16). 3. The third group comprises patients in whom local abnormalities in the skin are thought to play a role. This includes xanthomas following distinct diseases such as erythroderma and epidermolysis bullosa dystrophica, generalised eruptive xanthomas , juvenile xanthogranuloma and xanthoma disseminatum.(17). Our patient did not have any neurological features suggestive of cerebrotendinous xanthomatosis. There was no underlying lymphoproliferative disease and clinicopathologically there was no suggestion of xanthoma disseminatum , juvenile xanthogranuloma or generalised eruptive xanthomas.

Other reported cases are normolipemic cutaneous xanthomatosis with IgG gammopathy, hypernephroma, an unusual cluster of leukemia. (19). Also a case of chronic myelomonocytic leukemia with cutaneous xanthomas is reported(20).

There are some studies in which normolipemic tendon and tuberous xanthomas have been reported which are not associated with any underlying systemic disease or malignancy and patients lipid profile is also normal (21-24). Our case also seems to fall in this category.

CONCLUSION:

Tendon and tuberous xanthomas in a patient with normal lipid metabolism and with no associated systemic disease or malignancy is an uncommon occurrence but still reported in some studies. So we present this case to emphasise the importance of considering this disease entity in a patient with normal lipid profile. It also high lights the importance of looking beyond plasma lipids in a patient with multiple xanthomas.

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