Familial combined hypercholesterolemia type II b presenting with tuberous xanthoma, tendinous xanthoma and pityriasis rubra pilaris-like lesions

Sir,

Hyperlipidemias are common metabolic disorders of

plasma lipoproteins that are often associated with an increased risk of atherosclerosis. Occasionally, they lead to other abnormalities, especially xanthomatous deposits and pancreatitis. Familial combined hypercholesterolemia is characterized by the finding of hypercholesterolemia and hypertriglyceridemia within the same kindred and with-kindred members having either one of these abnormalities or both. Patients of familial combined hyperlipoproteinemia type II b present with high plasma cholesterol, high plasma low density lipoprotein (LDL) cholesterol, moderately high plasma triglycerides, tendinous, tuberous and intertriginous xanthomas and xanthelasma palpebrarum. Xanthomatas are commonly caused by a disturbance of lipoprotein metabolism.[1] There is a remarkable association of each type of xanthoma with elevation of a characteristic lipoprotein class. We report two cases of familial combined hypercholesterolemia type II b presenting in very early age with tuberous xanthoma, tendinous xanthoma and pityriasis rubra pilaris-like skin eruption.

An 8-year-old, non-obese boy, resident of Bagalakot district in north Karnataka, presented to our outpatient department with history of nodular skin lesions over both knees and the right elbow for the past 4 years and horny papular skin eruptions over the neck and back for the past 2 months. The patient was apparently normal 4 years back when his parents noticed few, small, yellowish nodules over the right knee. Gradually, the nodules increased in size and new nodules appeared over that knee as well as the left knee and right elbow. The lesions were asymptomatic. Two months back, the patient noticed mildly pruritic, horny, papular eruptions over the neck and back. The child was born of a second-degree, consanguineous marriage and no family members had early myocardial infarction or stroke. His younger sister, who was 6 years old and who was our second case, had similar but smaller yellowish nodules over the right knee and a similar horny, papular eruption over the chest.

On clinical examination, the patients general physical examination findings were normal. Systemic examination was unremarkable. Cutaneous examination revealed multiple, yellowish, nontender, soft nodules, measuring 2–3 cm in diameter and plaques measuring 6–8 cm in diameter, distributed over both the knees and the right elbow. The surface was smooth. The lesions were not fixed to the underlying structures. Skin over the lesions was normal. In the background of the yellowish plaques over both the knees, there were erythematous, scaly plaques with horny keratotic papules [Figure 1]. There were extensive, follicular oriented horny papules at places, especially over the neck and back, coalescing to form plaques measuring 3–4 cm to 10–8 cm in diameter, distributed over the neck and the back. These lesions were covered with grayish, adherent, powdery scales [Figures 2 and 3]. There were multiple, nontender,

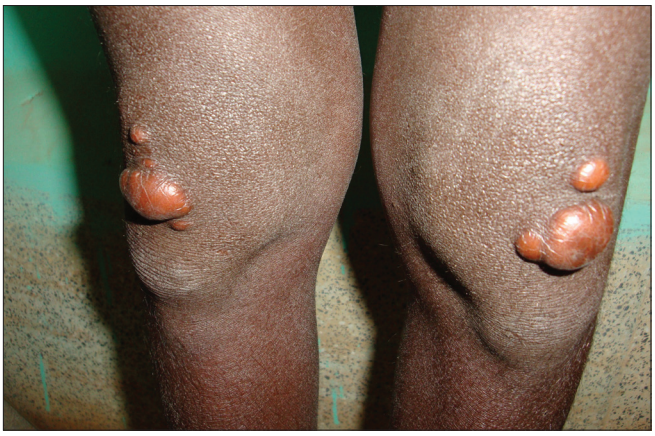

Figure 1: Tuberous xanthoma over the knee with pityriasis rubra pilaris-like plaque in the background – Case 1

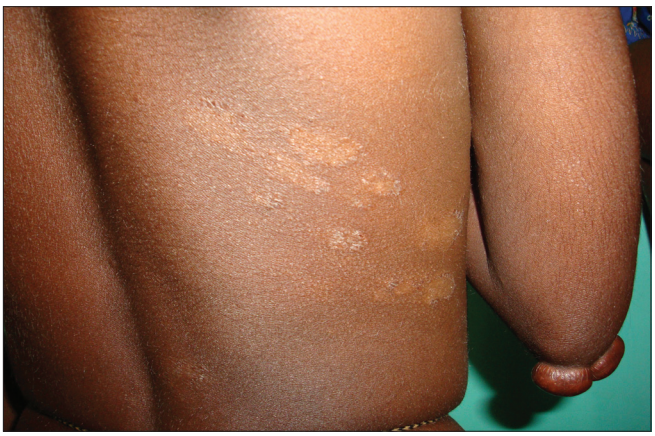

Figure 2: Pityriasis rubra pilaris-like plaques over the back – Case 1

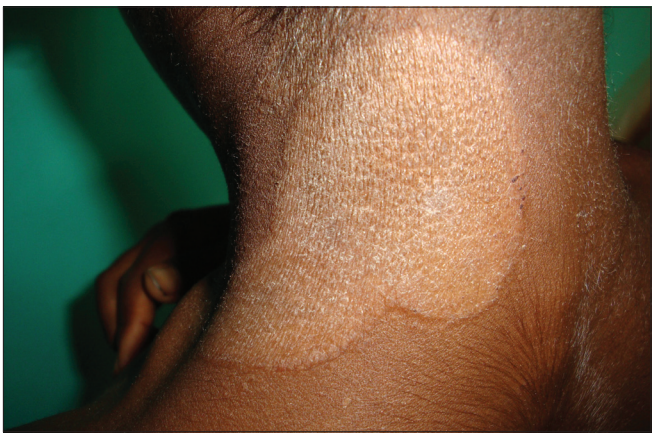

Figure 3: Pityriasis rubra pilaris-like plaque over the neck – Case 1

Table 1: Details of the laboratory parameters among the family members

Relation to Case 1	Age (Years)	sex	Blood sugar (mg/dl)	Lipid profile (mg/dl)				Cardiovasuclar work-up	PCOD work-up	Thyroid function test
				LDL	Triglycerides	Total cholesterol	HDL			
Self	8	M	Normal	633	245	734	52	RHD with mild MR	Not applicable	Normal
Sister	6	F	Normal	636.8	156	712	44	Normal	Normal	Normal
Mother	36	F	Normal	322.6	194	385	24	Normal	Normal	Normal
Father	43	M	Normal	172	200	238	26	Normal	Not applicable	Normal
Sister	4	F	Normal	162.6	62	193	18	Normal	Normal	Normal
Sister	2	F	Normal	618.2	404	748	49	Normal	Normal	Normal

firm, smooth swellings along the Achilis tendons on both sides and along the flexor tendons of both hands, more prominent over the lateral borders of both the index fingers. The scalp, palms and soles, genitals and mucosal surfaces were normal. Slit lamp examination and fundus examination of both eyes were normal.

Routine investigations including blood counts, blood sugar, chest X-ray, thyroid profile, liver and renal function tests were within normal limits. Antinuclear antibody profile was normal. The detailed work-up is as per Table 1. Ultrasound of the abdomen was normal. A biopsy of the nodule over the right knee was performed. Histopathological examination revealed sheets of foamy macrophages with scanty inflammatory cells in the dermis, suggesting xanthoma. Biopsy taken from the horny, keratotic papules and plaques revealed hyperkeratosis, acanthosis, keratotic follicular plugging and mild perivascular lymphocytic infiltrate. Fine needle aspiration cytology (FNAC) was carried out from the swelling over the left Achilles tendon, which revealed vacuolated histiocytes.

None of the family members were obese. The work-up of the family members is shown in Table 1. None of the other family members except the patient's younger sister had skin lesions. None of the family members had arcus senilis or any systemic abnormalities.

Our second case, a 6-year-old, nonobese girl, sister of the first case, presented with tuberous xanthoma, pityriasis rubra pilaris-like skin eruption. Her work-up is shown in Table 1. With these findings, we considered the diagnosis of familial combined hypercholesterolemia type II b with tuberous xanthoma. Both the patients were advised regarding dietary modification and were put on atorvastatin 5 mg OD. The pityriasis rubra pilaris-like skin lesions were treated with salicylic acid ointment and moisturizing cream.

Tuberous xanthoma, present as yellowish or reddish nodules, was mainly located on the extensor surface of the extremities and buttocks. When they occur in children and adolescents, a more severe form of hyperlipidemia should be suspected. Early diagnosis and treatment may help in preventing the development of early coronary artery disease and pancreatitis. There are many case reports of familial hypercholesterolemia presenting with xanthomata.[2-4] Our case is different from these reported cases. Both our patients were nonobese, presented with xanthomata in very early life and fit into type II b hypercholesterolemia. Although almost all the family members had high blood levels of cholesterol and triglyceride, there was no history of coronary artery disease or premature deaths in the family. Both our patients, in addition to xanthomata, had peculiar, pityriasis rubra pilaris-like eruption, which is not reported in the literature, and this association is unlikely to be coincidental.

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