Journal of Pakistan Association of Dermatologists 2011; **21**: 71-73.

PhotoDermDiagnosis

Yellowish papules over neck and upper chest

Piyush Kumar*, Avijit Mondal*, Shashidhar T*, Raghuraj S Hegde, R. C. Gharami***

*Dermatology Department, Medical College & Hospital, Kolkata, India
**Ophthalmology Department, Regional Institute of Ophthalmology, Kolkata, India

A 17-year-old girl presented with progressive development of asymptomatic yellowish soft papules over neck for last 6 months. It first started on left side of neck. Soon similar lesions appeared on the other side of neck and on upper part of chest. She was first issue of a non-consanguineous marriage and natal and post-natal history was unremarkable. Rest of history was non-contributory and no other family member was suffering from similar disease. On examination, multiple symmetric bilateral yellowish papules were found on neck and upper chest (**Figure 1**). Other flexural area i.e. axilla, groin etc were free. Rest of the mucocutaneous examination was unremarkable. On further inquiry, she revealed that she did not have eye pain, blurring of vision, bloody stool, any bleeding episode or neurological deficits. Routine blood, urine and stool examination did not reveal any abnormality. Stool for occult blood test was negative on three consecutive days. Chest X ray

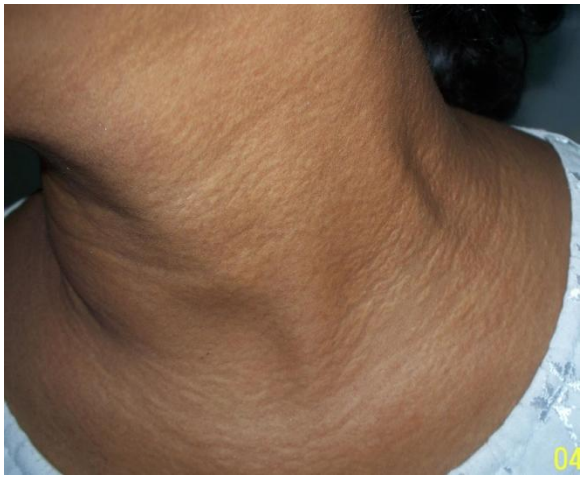

Figure 1

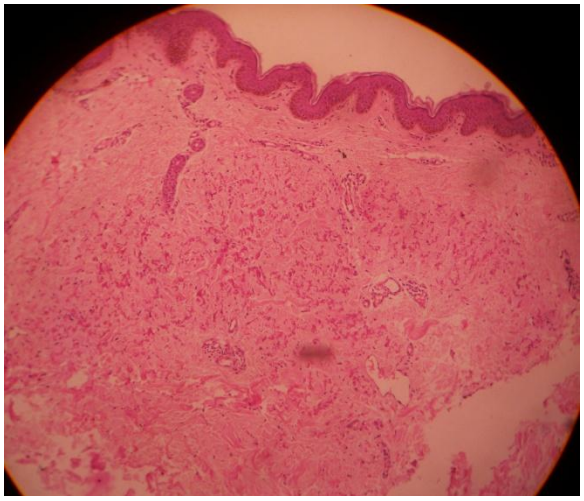

Figure 2

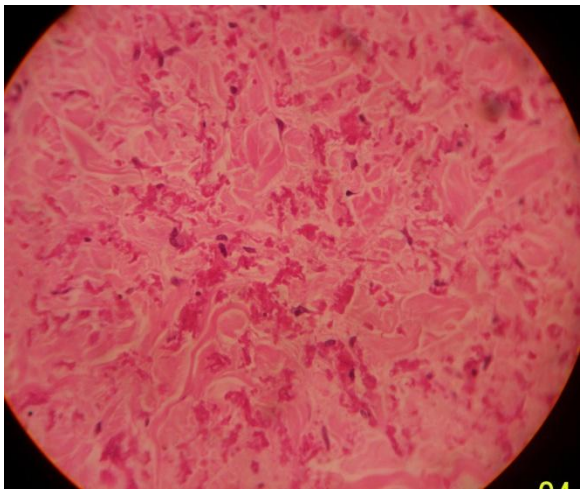

Figure 3

and 12 lead ECG was normal. Histopathology from neck lesion is showed in **Figure 2** and **Figure 3**. She was referred to departments of ophthalmology, cardiology and gastroenterology for further evaluation.

What is the diagnosis?

Diagnosis

Pseudoxanthoma elasticum

Discussion

Pseudoxanthoma elasticum (PXE) is a rare condition characterized by generalized fragmentation and progressive calcification of elastic tissue in the dermis, blood vessels and Bruch's membrane of the eye.[1] This leads to laxity of the skin, arterial insufficiency and retinal hemorrhage. The mode of inheritance is autosomal recessive and responsible gene has been identified as adenosine triphosphate-binding cassette (ABC) subfamily C member 6 (ABCC6) gene, encoding multidrug resistant protein 6 (MDR6).[1,2] Mutation in this gene causes progressive fragmentation and calcification of elastic tissue. In the fully developed skin lesions, the elastic fibers in the mid-dermis are clumped, degenerated, fragmented and swollen, and the abnormal fibers stain positively for calcium. The collagen fibers are also abnormal, being fragmented into small fibers. Similar changes occur in the connective tissue of the media and intima of the blood vessels, Bruch's membrane of the eye, and in the endocardium and pericardium.[3,4,5] Calcification of the internal elastic lamina of the arteries leads to vascular occlusion. Hypertension, angina, myocardial infarction, cerebrovascular accidents and recurrent mucosal hemorrhages may result. The changes in Bruch's membrane give rise to angioid streaks, and rupture of the retinal vessels to hemorrhages and choroiditis.

It is seen in all races and is more common in females (female: male 2:1). The average age of onset is 13 years.[6] Skin lesions are characteristic and are often the presenting feature. Yellowish papules appear in flexural skin, giving a 'plucked chicken' or 'cobblestone' appearance. Papules may form a reticulated pattern but often coalesce to form plaques that are similar to 'Moroccan leather'. The sites of predilection are the sides of the neck, below the clavicles, the axilla, abdomen, groin, perineum and thighs. In time, skin may become soft, lax, wrinkled and hang in folds, particularly in the neck, axilla, and groin.[4,5,6] Prominent horizontal and oblique mental creases before 30 yrs of age are highly specific.[7] Skin defects usually remain unchanged throughout life. Occasionally, there may be spontaneous perforating lesions, with transepidermal elimination of the fragmented elastic fibers. Arterial involvement may not be clinically manifested until adult life, but intermittent claudication and angina have occurred in early childhood. Mitral valve prolapse and aortic regurgitation have a higher prevalence in PXE than the general population.[8] Characteristic ocular defect is angioid streaks of retina, reddish-brown curvilinear bands that radiate from the optic disk.[9] Angioid streaks result from calcification of the elastic fibers in Bruch's membrane of the retina. Other associated ocular findings include small, raised, pearly white *drusen*, or punched-out atrophic areas in focal areas of dehiscence of Bruch's membrane. There may also be speckled yellowish mottling at the posterior pole, called 'leopard spotting' and may antedate the angioid streaks. Gastrointestinal hemorrhage is the most significant vascular complication of PXE. Hematuria may also occur. Biochemical abnormalities include increased phosphate levels, mild hypercalcemia and abnormalities of vitamin D metabolism seen in some of the patients.[10] Pregnancy is not contraindicated, but there is an increased risk miscarriage in the 1st trimester.

There is no specific treatment. Prevention and prompt management of complications is the goal

of treatment. Patients should be educated to avoid any activity that might cause sudden increase in blood pressure or contact injury to the eyes. Laser photocoagulation may be helpful in preventing further retinal hemorrhage. Glaucoma is a known complication and regular ophthalmic check up will be necessary. Cardiovascular risks should be minimized with control of blood pressure and serum lipids, and avoidance of smoking. The cosmetic appearance of the skin lesions may be improved by plastic surgery.[4,6]

Our case presented with characteristic skin lesions. Histopathology of the skin lesion was consistent with the diagnosis. Ocular findings were bilateral angioid streaks and retinal pigmentary changes, though patient was asymptomatic. Echocardiography showed left ventricular ejection fraction as 56% (normal value=more than 60%) and mild aortic regurgitation, but patient was asymptomatic. Gastroenterology and neurology evaluation did not reveal any abnormality. Counseling was done and patient was advised to come for regular follow up with relevant departments.

References

1. Ringpfeil F, Pulkkinen L, Uitto J. Molecular genetics of pseudoxanthoma elasticum. *Exp Dermatol* 2001; **10**: 221-8.
2. Le Saux O, Urban Z, Tschuch C *et al.* Mutations in a gene encoding an ABC transporter cause pseudoxanthoma elasticum. *Nat Genet* 2000; **25**: 223-7
3. Altman LK, Shenhav R, Schaudinischky L. Pseudoxanthoma elasticum. An underdiagnosed genetically heterogeneous disorder with protean manifestations. *Arch Intern Med* 1974; **134**: 1048-54.
4. Eddy DD, Farber EM. Pseudoxanthoma elasticum. Internal manifestations: case-reports and literature review. *Arch Dermatol* 1962; **86**: 729-40.
5. Goodman RM, Smith EW, Paton D *et al.* Pseudoxanthoma elasticum: a clinical and histopathological study. *Medicine* 1963; **42**: 297-334.
6. http://emedicine.medscape.com/article/1074713-overview accessed on 17.6.10
7. Lebwohl M, Lebwohl E, Bercovitch L. Prominent mental (chin) crease: a new sign of pseudoxanthoma elasticum. *J Am Acad Dermatol* 2003; **48**: 620-2.
8. Lebwohl MJ, Distefano D, Prioleau PG. Pseudoxanthoma elasticum and mitral-valve prolapse. *N Engl J Med* 1982; **307**: 228-31.
9. Connor PJ, Juergeens JL, Perry HO *et al.* Pseudoxanthoma elasticum and angioid streaks. A review of 106 cases. *Am J Med* 1961; **30**: 537-43.
10. Pasquali-Ronchetti I, Volpin D, Baccarani CM *et al*. Pseudoxanthoma elasticum. Biochemical and ultrastructural studies. *Dermatologica* 1981; **163**: 307-25.