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Pseudoxanthoma Elasticum Cutis Laxa-Like with Osteoma Cutis (Ossification)

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Abstract: Pseudoxanthoma elasticum (PXE) is a rare genetic disorder characterized by elastorrhexia, a yellowish coalescing papules mainly on the neck and flexural areas, with ocular and cardiovascular manifestations. We report a very rare case of generalized cutis laxa-like pseudoxanthoma elasticum associated with osteoma cutis (ossification). A 26 year-old woman of a nonconsanguineous marriage consulted for generalized wrinkling of the body and multiple yellowish papules of the neck. She noticed her first manifestations at the age of 16 years. She has no similar diseases in her family and never had autoimmune, inflammatory, cardiac or ocular diseases as a preceding history. A skin biopsy showed ossification and fragmentation of elastic fibers in the dermis. A medical, histological and laboratory workup was initiated showing no abnormal changes and organs involvement. A pseudoxanthoma elasticum with generalized cutis laxa-like disorder, as well as an extremely rare skin ossification (Osteoma cutis) was our case very interesting discovery. No other organ involvement was discovered which suggests a careful follow-up of possible complications.
Keywords: PXE: Pseudoxanthoma Elasticum.

INTRODUCTION

Pseudoxanthoma elasticum (PXE) is an inherited systemic disease characterized by changes in the elastic tissue of the skin and progressive calcification and fragmentation of elastic fibers. The disease primarily affects the skin, the retina, and the cardiovascular system. Pseudoxanthoma elasticum is associated with mutations in the *ABCC6* gene, which encodes an ATP-binding cassette transporter protein recently localized to the mitochondria-associated membrane (MAM) [1]. The gene is expressed predominantly in the liver and kidney; however, pseudoxanthoma elasticum most commonly involves the elastic fibers of the mid and deep reticular dermis of skin, the Bruch membrane of the eye, and the blood vessels. Current research supports a common (probably exclusive) autosomal recessive inheritance of PXE. The disease has been described in persons of all races**.** The female-to-male ratio is 2:1 [3]. A peak in the number of new cases is found at an average age of 13 years, but ages can vary between infancy and the seventh decade of life. Osteoma cutis refers to the presence of bone within the skin in the absence of a preexisting or associated lesion. Four clinical types were described: isolated, widespread, multiple miliary facial and platelike osteomas. The pathogenesis of primary osteoma cutis has two proposed mechanisms: a mesenchymal cells differentiating into osteoblasts and then migrating to an abnormal location or through an osteoblastic metaplasia of mesenchymal cells already in the dermis, such as fibroblasts. We report a very rare case of PXE with generalized elastolysis with dermal ossification.

CASE REPORT

A 26 year-old woman, a sibling of non-consanguineous marriage, presented with a 10 year history of progressive folding of the skin primarily noted over the neck and gradually extended over the body (figure1). She reports laxity and sagging of the skin as she noticed the development of loose wrinkled skin of the neck at the age of 16, then progressively a generalized folding of the body with yellow papules around the both sides of the neck. Neither an autoimmune nor an inflammatory disease preceded her first manifestation. The patient had never been on a medication for a long duration, and she has no similar case among her family.

Examination revealed marked cutis laxa-like skin folding of the neck, axillae, trunk, abdomen, buttock and back (figure1), with yellow papules of 2–3 mm in size over the neck and the supraclavicular region (figure2).

A medical, histological and laboratory workup was initiated. An ophthalmologic examination, including funduscopy, an echocardiography with a

cardiac examination,an abdominal ultrasound and a chest X-rays were performed showing no abnormal changes and organs involvement.

Laboratory examination included a complete blood cell count, thyroid function tests, liver function tests, urine analysis, fecal occult blood test, protein electrophoresis, serum calcium, serum phosphate were within normal ranges.

Two skin biopsy samples of the abdomen, from an affected and normal skin, showed a mild fibrosis with an abnormal elastic fibers distribution which accumulate by places within the dermis. As well as our very rare entity of multiple foci of ossification with irregularly clumped, basophilic-stained elastic fibers in the reticular dermis and calcium deposits along the elastic fibers (figure 3,4,5). The patient received too many local anti-age treatments with no improvement.

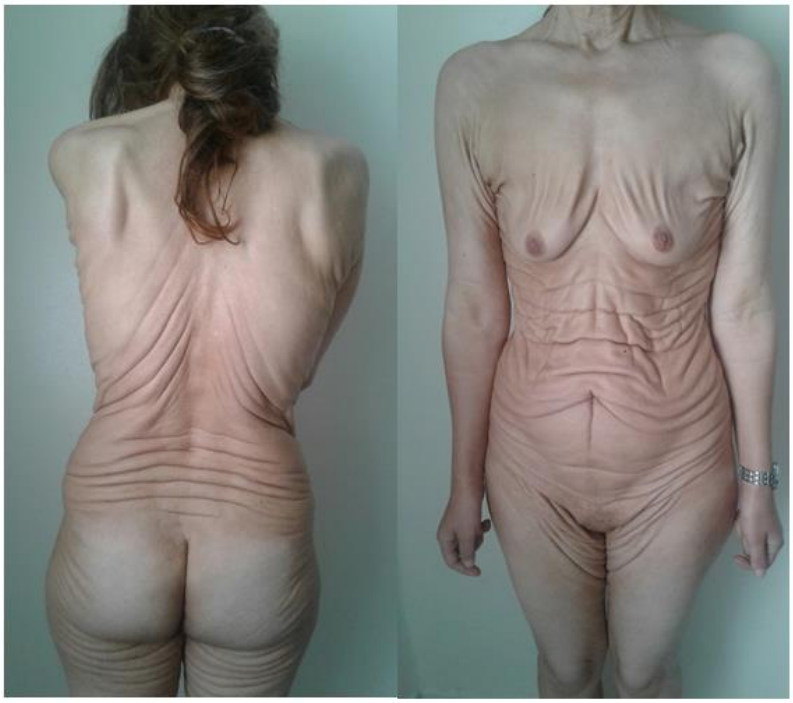


Fig-1: generalized folded skin of the body

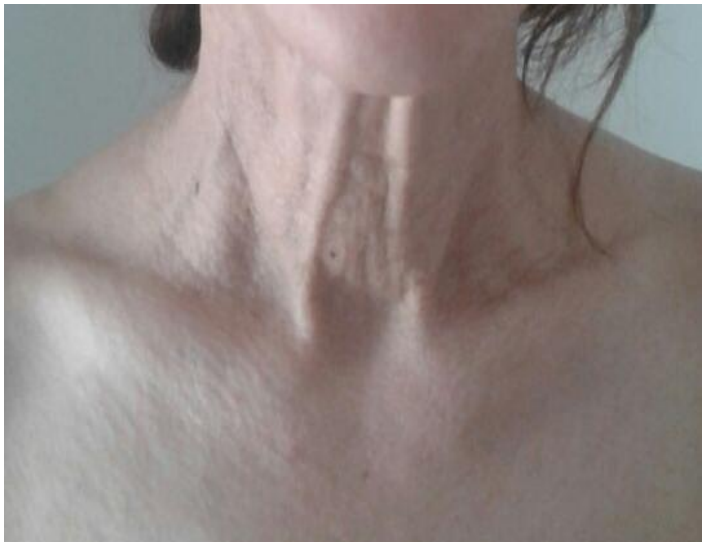
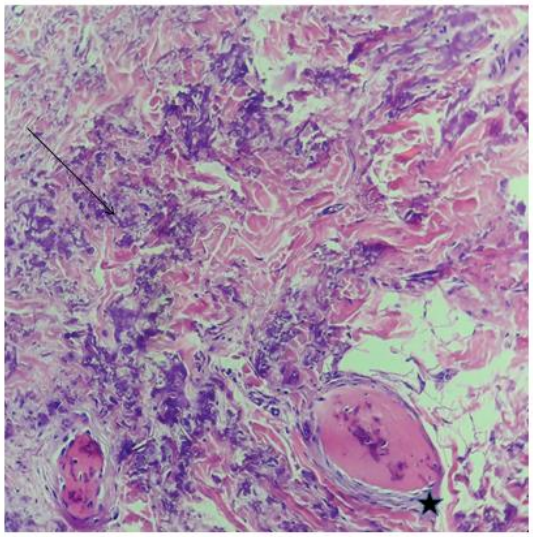


Fig-2: small papular lesions over the neck of white to yellow color Over the neck



Fi-3: Star: ossification Arrow: fragmentation of elastic fibers

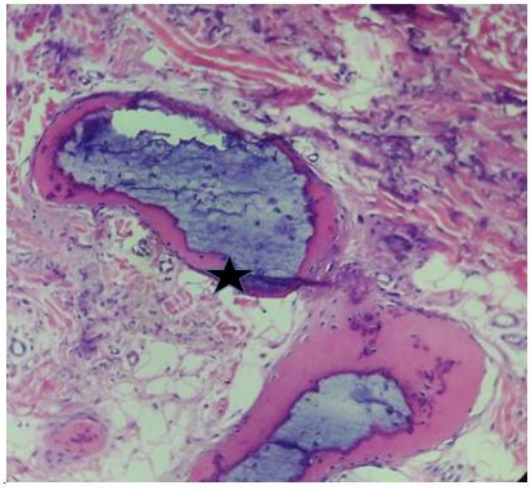


Fig-4: ossification

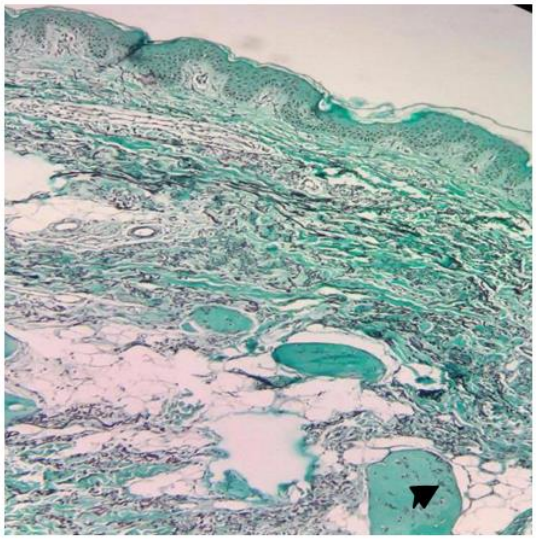


Fig-5: Orcein: elastic fibers are thickened and fragmented; note the fragmented fibers inside the ossification area (arrow)

DISCUSSION

Our case is considered special for the following reasons: Pseudoxanthoma elasticum with generalized skin folding, ossification and the absence of systemic involvement during a 10 year period.

Cutaneous changes are usually the first manifestation of pseudoxanthoma elasticum (PXE). The lesions usually develop in childhood or early adolescence; however, occasionally, they first appear in late adulthood [3, 4].

Small, yellow papules of 1-5 mm in diameter are seen over the neck, the axillae and the supraclavicular region in a linear or reticular pattern and may coalesce to form plaques. The skin takes on a plucked chicken or cobblestone appearance. Typically, these changes are first noted on the lateral part of the neck and later involve the antecubital fossae; the axillae; the popliteal spaces; the inguinal and periumbilical areas; the oral mucosa involving the lower lip, cheek, and palate; and the vaginal and rectal mucosa [5].

As the disease progresses, the skin of the neck, the axillae, and the groin may become soft, lax, and wrinkled, hanging in folds. The extent of these changes is usually limited, but generalized cutis laxa–like pseudoxanthoma elasticum, as our case, has also been reported [6]. Elastolysis is characterized by degenerative changes in the elastic fibers resulting in loose, pendulous skin. The skin is sagging, redundant, and stretchable, with reduced elastic recoil. The cutaneous findings of cutis laxa may be striking, but the elastic fiber network is even more important for pulmonary and cardiovascular function.

Other clinical presentations reported in literature include acneiform lesions, brown reticulated macules and chronic granulomatous nodules [7].Elastosis perforans serpiginosa may coexist with pseudoxanthoma elasticum [8].

Ocular manifestations of pseudoxanthoma elasticum are angioid streaks of the retina, which are slate gray to reddish brown curvilinear bands that radiate from the optic disc.The streaks, represent cracks and fissures in the calcified Bruch's membrane. This ocular change is generally bilateral and is often noted several years after the onset of cutaneous lesions. Retinal hemorrhages with loss of central vision are common after the fourth decade of life [9].

Cardiovascular manifestations, except for intermittent claudication, are usually the last complications to be recognized in PXE. Calcification of the elastica media and intima of the blood vessels leads to various physical findings. In adults, peripheral pulses are often severely diminished. Renal artery involvement is rare, but can lead to hypertension, and coronary artery disease can result in angina pectoris and subsequent myocardial infarction.Moreover, mitral valve prolapse has a higher prevalence which may not be significant unless the murmur of mitral valve insufficiency is also present [9,10].

Gastrointestinal hemorrhage that is usually gastric in origin might result from the increased fragility of calcified submucosal vessels. Hemorrhaging may occur early in the disease progression, especially in the second to fourth decade, without warning. Depending on its severity, hospitalization, blood transfusion, and surgery may be necessary. Approximately 10-15% of patients with pseudoxanthoma elasticum experience a GI hemorrhage at some point in their lives. Our patient had no visceral involvement.

Arriving to our patient's very interesting discovery which was ossification and calcification: Cutaneous calcification and ossification both involve the deposition of calcium salts in cutaneous and subcutaneous tissues. Derangements of calcium metabolism can sometimes cause cutaneous calcification or ossification as a first sign of systemic disease.

The described ossifying syndromes are: Albright's hereditary osteodystrophy, multiple miliary osteomas of the face, isolated osteoma, widespread osteoma and congenital plate-like osteoma.

Dystrophic calcification, the most common form of calcinosis cutis, does not alter patients' levels of serum calcium or phosphorus, but it shares many of the same underlying conditions with secondary osteoma cutis. Some patients with PXE have abnormal calcium, phosphate, and/or vitamin D metabolism and develop metastatic calcification in the form of calcific tumors, cerebral calcification, and arterial calcifications. This association of calcification and ossification might lead to osteoma.

In summary, this is a very rare case of pseudoxanthoma elasticum cutis laxa-like with ossification. No other organ involvement was discovered which suggests a careful follow-up of possible complications.

REFERENCES

1. Martin LJ, Lau E, Singh H, Vergnes L, Tarling EJ, Mehrabian M, Mungrue I, Xiao S, Shih D, Castellani L, Ping P. ABCC6 localizes to the mitochondria-associated membrane. Circulation research. 2012 Aug 17;111(5):516-20.
2. Chassaing N, Martin L, Calvas P, Le Bert M, Hovnanian A. Pseudoxanthoma elasticum: a clinical, pathophysiological and genetic update

including 11 novel ABCC6 mutations. Journal of medical genetics. 2005 Dec 1;42(12):881-92.

3. Bercovitch L, Terry P: Pseudoxanthoma elasticum 2004. Journal of the American Academy of Dermatology 2004, 51(1 Suppl):S13-14.
4. Sherer DW, Bercovitch L, Lebwohl M. Pseudoxanthoma elasticum: significance of limited phenotypic expression in parents of affected offspring. Journal of the American Academy of Dermatology. 2001 Mar 1;44(3):534-7.
5. Spinzi G, Strocchi E, Imperiali G, Sangiovanni A, Terruzzi V, Minoli G. Pseudoxanthoma elasticum: a rare cause of gastrointestinal bleeding. American Journal of Gastroenterology. 1996 Aug 1;91(8).
6. Uenishi T, Uchiyama M, Sugiura H, Danno K. Pseudoxanthoma elasticum with generalized cutaneous laxity. Archives of dermatology. 1997 May 1;133(5):664-6.
7. Lebwohl M, Lebwohla E, Bercovitch L. Prominent mental (chin) crease: a new sign of pseudoxanthoma elasticum. Journal of the American Academy of Dermatology. 2003 Apr 1;48(4):620-2.
8. Li TH, Tseng CR, Hsiao GH, Chiu HC. An unusual cutaneous manifestation of pseudoxanthoma elasticum mimicking reticulate pigmentary disorders. British Journal of Dermatology. 1996 Jun;134(6):1157-8.
9. Lebwohl MG, Distefano D, Prioleau PG, Uram M, Yannuzzi LA, Fleischmajer R. Pseudoxanthoma elasticum and mitral-valve prolapse. New England Journal of Medicine. 1982 Jul 22;307(4):228-31.
10. Prunier F, Terrien G, Le Corre Y, Apana AL, Bière L, Kauffenstein G, Furber A, Bergen AA, Gorgels TG, Le Saux O, Leftheriotis G. Pseudoxanthoma elasticum: cardiac findings in patients and Abcc6-deficient mouse model. PLoS One. 2013 Jul 23;8(7):e68700.