Journal of Pakistan Association of Dermatologists. 2024;**34(3)**:752-755.

Case Report

Acquired elastotic hemangioma of the face: An effective treatment by oral propranolol

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Abstract Acquired elastotic hemangioma, is defined as a well-defined erythematous plaque affecting the sun-exposed parts with distinct pathological features. This article emphasized a case with a facial presentation of the disease and provided a challenging treatment with oral propranolol. Herein, a young woman presented with a single red patch localized in her chin for one year. It was characterized by an asymptomatic unpleasant-looking lesion. The 2 mm punch specimen revealed a band-like flat proliferation of vessels in the papillary dermis with a grenz zone and established the diagnosis of acquired elastotic hemangioma. Oral propranolol 40 mg twice daily was initiated and showed a marked response after 6 weeks. In conclusion, acquired elastotic hemangioma involving the face is rarely reported in the literature. It carries a tremendous cosmetic concern in young women; it's successfully treated by oral propranolol.

Key words
Acquired elastotic hemangioma; Hemangioma; Oral propranolol; Facial red patch.

Introduction

Acquired elastotic hemangioma (AEH) describes the clinical and pathological features of a new entity of skin hemangioma.[1] It is a well-defined erythematous plaque that affects the sun-exposed parts of adult women and mostly affects the forearm, arm, back, neck, and head.[2,3] The classical pathological finding is a band-like growth of capillaries confined to the superficial dermis and organized parallel to the epidermis intermingled by solar elastosis.[4,5]

To date, there have not been designated, satisfying treatment options for AEH. There are only reported cases treated with surgical correction, and one patient was successfully managed with laser.[6,7]

The effectiveness of oral propranolol in the treatment of infantile hemangioma and burn hemangioma prompted the selection of this drug as a safe and non-invasive treatment for presenting cases.[8,9] This article highlighted a distinctive presentation of facial AEH and provided active treatment with oral propranolol as a challenging management strategy.

Case report

A 19-year-old woman presented to the dermatology outpatient clinic with a single erythematous patch localized in her chin, for duration of one year and there were no other recognized similar lesions. It is characterized by asymptomatic well-defined borders and slow-growing unpleasant-looking lesions. The patient was otherwise healthy and denied any preceding burn, bleeding, trauma, insect bite, or radiotherapy at the site. Clinical examination showed an annular well demarcated shiny red patch of 4x5cm in diameter. Not tender and

Manuscript
Received on: July 21, 2023
Accepted on: December 18, 2023
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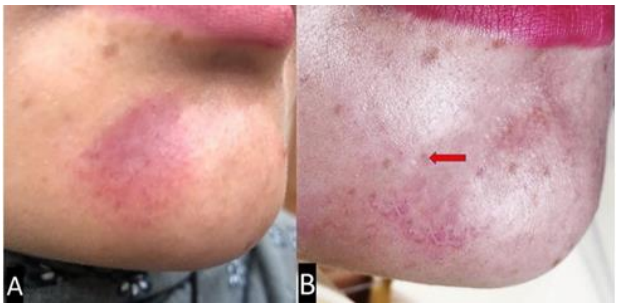

Figure 1 Acquired elastotic hemangioma: affects the chin of the young woman. View (A) shows a single annular well-demarcated red patch with pinpoint telangiectasia. Marked improvement of the disease after 6 weeks of treatment with oral propranolol 40 mg twice daily. The arrow pointed to the scar of biopsy (B).

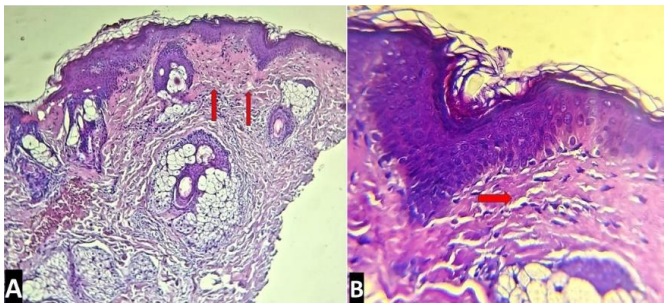

Figure 2 A low magnification view (A) of a 2-punch biopsy from the face shows a band-like flat proliferation of vessels in the papillary dermis with a grenz zone (arrows) as well as a flat epidermis. Higher magnification (B) highlights slit-like vascular spaces (arrow); (Hematoxylin and eosin: a, x 100; b, x 400).

without scales. It was of vascular origin with multiple pinpoint telangiectasia and faded beneath the diascopy test (**Figure 1A**). There was no drug history and body weight was 58 kilograms. The disease should be differentiated from trauma, fixed drug eruption, hemangioma, Bowen disease, and actinic keratosis or superficial basal cell carcinoma.

The histopathological examination of the 2 mm punch specimen revealed a horizontal band-like vascular proliferation in the papillary dermis with a grenz zone. They did not show nuclear atypia. Flat epidermal rete ridges and few deeper dilated capillaries. There were fibers of elastosis and collagen bundles combined and intermixed with the capillary's proliferation, without inflammatory infiltrate (**Figure 2**). These microscopic findings established the diagnosis of acquired elastotic hemangioma. The patient's consent was obtained regarding the publication of the clinical data and photographs.

Treatment with oral propranolol 40 mg twice daily was initiated. Special care is indicated regarding heart rate and blood pressure. There was an obvious improvement that started a few weeks after therapy and it showed a marked response after 6 weeks of propranolol treatment (**Figure 1B**); at that point, the drug was stopped. Subsequently, six weeks of follow-up showed no recurrence.

Discussion

Acquired elastotic hemangioma is a newly defined entity described in 2002.[1] It is a rare, benign, asymptomatic red patch or plaque, that often occurs on photo-damaged skin.[1] The particular prevalence of AEH is not yet known. The disease needs only reassurance but a surgical excision and laser destruction were performed for many cases due to its disfiguring clinical appearance.[2]

This case study presented a young woman with an erythematous, slow-growing, annular well demarcated shiny patch involved in the face. As a result, of their embarrassment and depression (due to the unpleasant appearance of the lesion), the patient requested medical assistance for cosmetic correction. The patient refused surgical removal and laser treatment.

The assessment of clinical findings in preceding reports agreed with the recognition of the same presentation pattern as well as the involvement of sun-exposed skin. However, the disease typically affects mainly elderly women with an apparent preference for the forearms.[5] To a

lesser extent, the disease may also originate in the neck, shoulder, lower lip, and nose.[6] AEH of the cheek was reported in an elderly female and presented as an asymptomatic nodular lesion.[2]

The pathological features in the current case revealed a normal epidermis with flat rete ridges and a horizontal band-like vascular proliferation in the papillary dermis intermingled with fibers of elastosis and collagen bundles but without nuclear atypia. There was no inflammatory cell infiltration or extravasation of erythrocytes. Many previous studies have approved similar histological characteristics of the AEH.[3-5]

In addition to the characteristic histopathological findings of the AEH, the patient denied any local trauma or radiation, and no drug ingestion. These would exclude ecchymosis as well as fixed drug eruptions. In most reported cases, there was no history of previous trauma.[4] The histopathologic differences from classic hemangioma include lobules of capillary proliferation distributed in the dermis and hypodermic fat as well as the childhood onset of disease in almost all presenting cases.[1]

The differential diagnosis of AEH concerning the clinical presentation includes Bowen disease, actinic keratosis or superficial basal cell carcinoma. However, they should be considered in elderly patients presented with scaly plaque or nodules. While the current report showed a young individual who had a red non-scaly patch with vascular changes without cellular atypia.[5]

To date, the etiology and pathogenesis of AEH are unknown.[6] Photodamage as an inciting cause might play a role as supported by pathological solar elastosis. In almost all published cases, AEH behaves normally and is considered a benign condition.[10] The presenting case of AEH showed a major cosmetic concern and a challenge in treatment, particularly seen in patients with facial involvement. She was scared of invasive procedures; in these circumstances, a safe and noninvasive agent like oral propranolol was selected as a therapeutic strategy for the first time with marked improvement of the AEH. The outcome was encouraging; it increased patient satisfaction and improved her quality of life.

A previous immunohistochemical study identified the expression of β2-adrenergic receptors in endothelial cells of the vessels of hemangioma. This created the potential effects of propranolol through vasoconstriction, reduction in the appearance of pro-angiogenic factors, decreased vascular endothelial growth factor levels, and initiation of endothelial cell apoptosis.[8] Prior findings revealed significantly improved infantile hemangioma, burn hemangioma, pyogenic granuloma, and permanent facial erythema of rosacea using comparable therapy with propranolol.[8,9,11,12]

Conclusion

AEH of the face is seldom seen in daily clinical work. Its clinical and histopathological features are almost constant. Facial involvement brings a great cosmetic worry. Oral propranolol is a safe and noninvasive agent that shows marked improvement in AEH. Hence systemic propranolol is strongly recommended in further comparative studies in this field.

Declaration of patient consent The author certify that they have obtained all appropriate patient consent.

Financial support and sponsorship None.

Conflict of interest The author declared no conflict of interest.

Author's contribution

TAK: Identification, diagnosis & management of the case, manuscript writing, critical review, has given final approval of the version to be published.

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