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Serpiginous Granuloma Annulare: A Case Report

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Abstract

Granuloma annulare (GA) is a benign inflammatory skin condition of unknown etiology. Various clinical forms of GA including localized, generalized, subcutaneous, patch and perforating types, have been described. Although the etiology and pathogenesis of granuloma annulare are obscure, there is much evidence for an immunological mechanism. Precipitating factors are insect bites, sunburn, photochemotherapy, drugs, physical trauma, acute phlebitis and sepsis after surgery.[1] Some authors have proposed that it might be associated with a variety of underlying conditions such as thyroid disorders, diabetes mellitus and positive tuberculin skin test.[2] For definitive diagnosis, a biopsy should be performed. We report a case of generalized GA with serpiginous borders on the dorsal aspects of the hands and arms along with an association with diabetes.

Keywords *- Granuloma annulare, serpiginous, diabetes mellitus, dapsone.*

Introduction

Granuloma annulare (GA) is a common idiopathic disorder with an estimated incidence of 0.1-0.4% in the general population.[2] Granuloma annulare is also known by various other names like benign rheumatoid nodule, pseudorheumatoid nodule, isolated subcutaneous nodule, subcutaneous palisading granuloma and palisading granuloma nodosum.[2] It is more common in women with a male : female ratio of 2.3:1. The exact etiology of granuloma annulare is unknown and has been reported to follow trauma, malignancy, viral infections (including human immunodeficiency virus [HIV], Epstein-Barr virus and herpes zoster), insect bites and tuberculin skin tests. One retrospective study found that granuloma annulare had an incidence of 12 percent in diabetics. Another case-control study that included patients with and without diabetes reported no statistically significant correlation between granuloma annulare and diabetes. Granuloma annulare has also been reported in association with malignant neoplasms mainly lymphomas and prostrate cancer.[3] A delayed-type hypersensitivity reaction and cell-mediated immune response have been hypothesized in the pathogenesis of this disease. Clinically, the lesions typically appear as papules and plaques with annular margins mostly on the dorsal surfaces of hands, arms and feet. Various clinical forms of GA including localized, generalized, subcutaneous, patch and perforating types, have been described. Localized variant is the most common form of GA occurring mainly in the younger age group. Generalized GA is defined by the simultaneous involvement of trunk and upper or lower extremities.[2] Some authors have suggested that extensive involvement of extremities without involvement of trunk can also be classified as generalized GA whereas others define it as having 10 or more lesions.[3] Subcutaneous GA often found on lower extremities of children presenting as subcutaneous nodules.[2] Patch type GA is the rarest form manifesting as erythematous or hyperpigmented patches, without scaling over the trunk and extremities.[4] Perforating GA is defined clinically by umbilicated papules that may have central crust. Diagnosis of GA is based on clinical and histopathological examinations. Histopathologically, the classic presentation of GA is a palisading granuloma characterized by histiocytes and epithelioid cells surrounding a central zone of altered collagen with mucin deposition. Granuloma annulare has a tendency of spontaneous involution in a high proportion of cases more so in localized disease. Because of the self-limiting nature of granuloma annulare, only reassurance is necessary in most of the cases.

Case Report

A 59-year male patient presented with numerous skin colored to erythematous, asymptomatic papules over the dorsal aspects of the hands and both the arms for the last six months. The lesions progressed gradually in number and size to the present extent. There was a history of hand dermatitis for last 3 years. The patient had history of

diabetes for last 15 years and was under treatment for the same. Family history was not significant. On physical examination there were numerous (more then 10), discrete, skin-colored-to-erythematous, rubbery papules over the dorsal aspects of the hands, volar and extensor surfaces of the arms in a symmetrical distribution arranged in arcuate and annular pattern with serpiginous borders in most of the lesions (Fig 1). There was involvement of thumb, index and middle finger of left hand and middle finger of right hand along with both the palms with lesions suggestive of chronic hand eczema (Fig 2). Based on clinical features and histopathological report diagnosis of granuloma annulare was made and patient was started on topical corticosteroids. The lesions completely disappeared within 6 months of follow up.

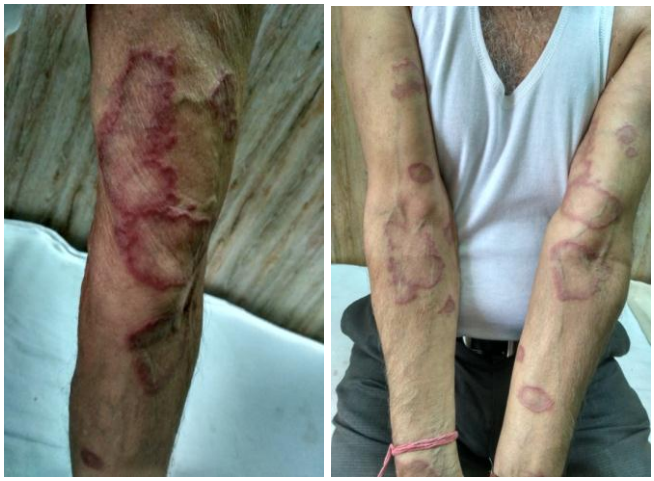

Fig 1: Annular plaques with serpiginous borders over the arms.

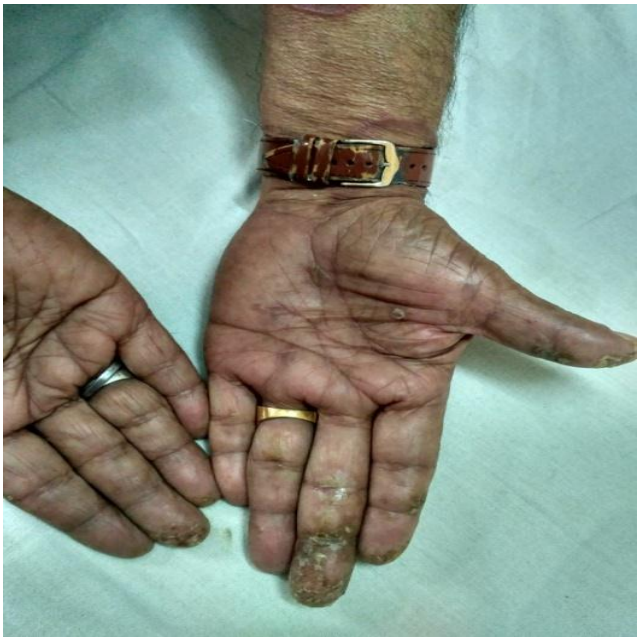

Fig 2: Involvement of the palms with both Granuloma annulare and hand eczema.

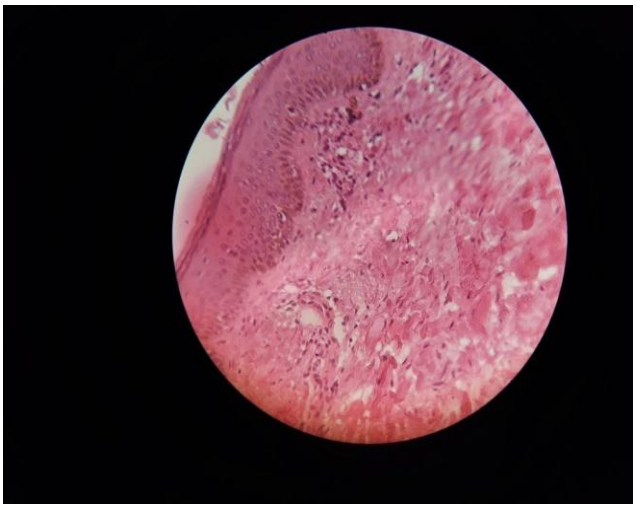

Fig 3: Histopathology from the lesions (10x)

Discussion

Granuloma annulare (GA) is a benign, relatively common, inflammatory dermatosis with numerous associations. Historically, GA has been reported to be associated with diabetes. In a study conducted by Muhlemann and Williams on 557 patients of GA, 24 (4%) patients were diagnosed with diabetes out of which eighteen had type 1 diabetes and six had type 2 diabetes; 16 of the 18 patients with type 1 diabetes had diabetes at presentation and the association was statistically confirmed.[4] Studer et al found diabetes mellitus in 12% (10/84) patients with GA and concluded that these patients were more likely to experience recurrent disease and 6/10 patients reported exacerbation of their skin with poor glycemic control.[5] However, some studies have failed to show any relationship between these two conditions. Nebesio et al failed to reveal any statistically significant correlation between GA and type 2 Diabetes in their case control study.[6] Our patient had more then ten lesions of arcuate and annular appearance with serpiginous borders in most of the lesions and were located on the hands and arms. Diagnosis of GA is often clinical, but biopsies may be performed in case of uncertainty. Diagnosis should prompt investigations for diabetes and other related conditions such as dyslipidemia. As GA is a benign and frequently self-limiting condition with 50% of cases of localized disease resolving in 2 years and 80% clearing after 9 years, the only treatment necessary may be to provide a diagnosis and an explanation of the condition. Sometimes the lesions may be pruritic or treatment may be required for cosmetic reasons. More than 50% patients experience recurrent disease. Numerous treatments have been described but high quality randomized controlled trials are lacking. Topical or intralesional corticosteroids are the most frequently used modalities of treatments for localized disease. Our patient responded to topical clobetasol ointment. Other treatment options include topical calcineurin inhibitors, cryosurgery, low-dose recombinant interferon gamma, photodynamic therapy, topical psoralen combined with ultraviolet A

(PUVA) or laser (CO2-pulsed-dye, excimer, ND: YAG). There is anecdotal evidence of lesions resolving after biopsy. A variety of systemic therapies have been described including oral corticosteroids, antibiotics, antimalarials, fumaric acid esters, isotretinoin, biologicals (anti-TNF), ciclosporin, dapsone, niacinamide, vitamin E, chlorambucil, pentoxifylline, PUVA and narrow-band ultraviolet B phototherapy. Resolution of GA was reported in a case of a Japanese female with hypertriglyceridemia with a strict lipid-lowering diet. Inspite of several treatments available, in clinical practice it is difficult to justify exposing patients to treatments for which there is little evidence for what it very likely to be a self-limiting condition.[7]

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