

Granuloma annulare with Juxta-articular nodules: A case report

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Abstract Granuloma Annulare is a benign cutaneous disease. Juxta-articular nodules are rarely seen among adults. These nodules are considered as subcutaneous form of granuloma annulare. We are reporting a case of an adult male with this rare presentation along with history of associated diabetes mellitus. The biopsy confirmed the diagnosis of granuloma annulare and the patient responded to intralesional steroids and oral isotretinoin therapy.

Key words

Granuloma annulare, necrobiotic granuloma, diabetes mellitus.

Introduction

Granuloma annulare (GA) was first reported by Colcott Fox in 1895 and then by Radcliffe Crocker in 1902. Skin and/or subcutis is involved in a process characterized by foci of alteration of collagen surrounded by histiocytes and lymphocytes. Reddish lesions on skin arranged in a ring (circle) are seen. GA represents a cutaneous reaction pattern of unknown cause with a variety of previously described potential disease associations and triggers with HLA-Bw35 association.^{1,2} Various triggers of GA have been identified including insect bite, intralesional skin tests and trauma.^{3,4}

Associated diseases of GA include diabetes mellitus, autoimmune thyroiditis, Plummer's disease (Toxic adenoma of thyroid), neoplasms, temporal arteritis, morphea, necrobiosis lipoidica and sarcoidosis.^{2,3} Any age can be affected but mostly it presents before 30 years of

age, Female to male ratio is 2:1. Its clinical variants include localized GA, generalized GA, subcutaneous GA, perforating GA, patch type GA and GA in HIV disease.^{2,3}

Typical histology shows necrobiotic granuloma when granulomatous infiltrate develops around a central area of altered collagen & elastic fibers. Histopathological variants are necrobiotic palisading granuloma, interstitial form, granuloma of sarcoid or tuberculoid type, perforating GA and subcutaneous form.^{2,4}

Case report

A 42-years-old married, man, resident of Abbotabad and a restaurant manager by profession presented with history of reddish brown lesions on hand, arm, thigh & abdomen for the last 8 months along with multiple swellings on joints of fingers of both hands for the last 6 months. There was no history of arthralgia, morning stiffness, restriction of movements or swelling of joints, No history of photosensitivity, Raynaud's phenomenon, oral ulcers, any mucosal involvement, hair or nail abnormality. He was a known diabetic (uncontrolled) for the last 2 years and a cigarette

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Figure 1 Cutaneous lesions of granuloma annulare on abdomen and hand.

smoker (7-8 cig/day) for over 20 years. There was past history of fever with arthralgia of multiple large joints (knees, shoulder, elbow and wrists) 20 years back which remitted in 2-3 months with treatment. Father was epileptic whereas mother had pulmonary TB. On examination, he was a middle-aged man of normal built, vitally stable with normal general physical examination. Systemic examination was normal. Hands examination showed 4x3cm, smooth surfaced, non-tender erythematous to brownish plaque on the ulnar border of left hand and apple jelly nodules were observed on diascopy. There were erythematous plaques on left arm and right thigh. Small papules coalescing to form an annular ring on abdomen were also seen (**Figure 1**). Multiple small, firm, non-tender, skin coloured, mobile nodules on

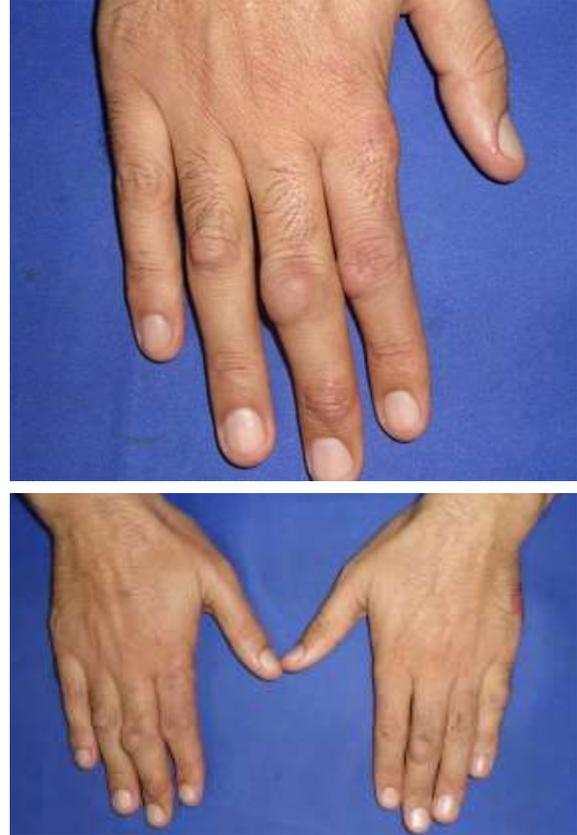


Figure 2 Multiple small firm, non-tender, skin coloured, mobile nodules on IP joints of fingers of both hands.

interphalangeal joint of fingers of both hands were observed (**Figure 2**).

Our differential diagnoses included granuloma annulare, sarcoidosis, rheumatoid arthritis, multicentric reticulohistiocytosis, gout and xanthomatosis.

Investigations were carried out to rule out other diagnoses including CBC, LFTs, RFTs, Urinalysis, chest X-ray (**Figure 3**) and abdominal ultrasound. All were normal. CRP was 4.0, ESR: 5 mm/ 1st hour, BSL: 238 mg/dl, Uric acid: 4.5 mg/dl, Lipid profile: Triglycerides 139 mg/dl, Cholesterol 151 mg/dl, HDL 44 mg/dl, LDL 90 mg/dl, S. Electrolytes: Normal, Calcium: 9.3 mg/dl, Phosphate: 3.1 mg/dl, Hb A1c: 9.6, RA Factor: Negative. X-rays of hands revealed soft tissue swellings at interphalangeal

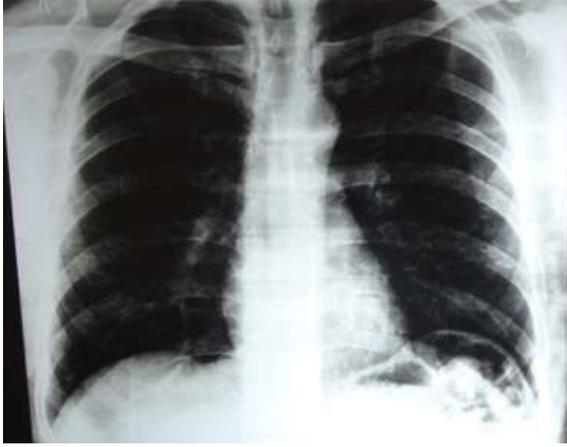


Figure 3 Normal chest X-ray.



Figure 4 X-rays hands: soft tissue swellings on proximal interphalangeal joints of both hands with no mineralization.

joints of both hands without mineralization (**Figure 4**).

Histopathology of skin lesions revealed epidermal acanthosis with normal basal layer, Histiocytic infiltrate palisading around necrobiotic focus of collagen in dermis along with lymphocytes was seen. Subcutaneous tissue was normal. Histopathology of nodule showed palisading granuloma in dermis and subcutis. Alcian blue staining showed abundant mucin deposition.

Diagnosis was made based on following criterion: History of diabetes mellitus, asymptomatic plaques & nodules on IP joints, clearance of lesions after biopsy.

Clinical features: Annular plaques, Juxta-



Figure 5 Post-treatment clearance of lesions.

articular nodules.

Investigations: Uncontrolled diabetes, Skin biopsy showing necrobiotic granuloma, negative RA Factor.

The treatment with oral Isotretinoin 1 mg/ kg/ day along with intralesional corticosteroid therapy for the juxta articular nodules was started and a complete clearance of lesions after treatment was observed (**Figure 5**). Patient was followed up for 2 years and recurrence of disease was not observed.

Discussion

Subcutaneous necrobiotic granuloma is an uncommon presentation seen mainly among children in whom nodular lesions on scalp and legs have been reported.^{3,5-8} Our patient had skin lesions as well as juxta-articular nodules. Similar case has been reported by Wang et al. in which a

woman presented with juxta-articular nodules along with cutaneous granuloma annulare.⁹

Pseudo-rheumatoid nodules like presentation has also been reported.^{10,11} Cases of subcutaneous GA have been reported previously but rarity of this condition makes it difficult for its early diagnosis if presented in isolation.¹²⁻¹⁷ Differentiation from rheumatoid nodules is difficult clinically and histologically. The nodules of GA show more mucinous content than RA.

Diabetes mellitus is quite common in our population and has many associations with other diseases. Its association with GA makes it a multidisciplinary disease so whenever a case of GA presents to a dermatologist, the patient should also be screened for diabetes. Our case also had the two diseases simultaneously.

Although familial occurrence of subcutaneous GA has been reported but it was not seen among the family members of our patient.

Treatment of GA depends on its presentation. If it is localized GA then potent topical steroids, intralesional steroids, cryosurgery, low dose recombinant INF- γ , pulsed dyed laser, and photodynamic therapy are its treatment options. In case of generalized GA, PUVA therapy, narrow band UVB, retinoids, cyclosporin, dapsone, antimalarials, niacinamide, pentoxifylline, fumaric acid esters, clofazimine are used. Spontaneous recovery can also occur. Newer therapies include topical tacrolimus, pimecrolimus, imiquimod, infliximab, efalizumab and etanercept.⁴ Our patient responded very well to retinoids and intralesional corticosteroids.

Conclusion

We are reporting this case because subcutaneous granuloma annulare with juxta-articular nodules

is a rare entity and only a few cases have been reported. Association of diabetes mellitus with granuloma annulare should be kept in mind. Diabetes mellitus is a common problem and it has multiple cutaneous associations. Public awareness programs should be arranged regarding diabetes and its cutaneous associations. Dermatologists suspecting associated diabetes with cutaneous lesions should refer patients to concerned department for early diagnosis and treatment to prevent the complications of diabetes

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