Localized granuloma annulare and autoimmune thyroiditis in a
Saudi patient: Report of a new case

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Summary
The association of granuloma annulare (GA) and autoimmune thyroiditis has been documented in the literature in 13 previous cases. However, the pathogenesis of GA remains obscure. Possible pathogenetic factors suggested include: humoral and delayed type hypersensitivity, vascular damage, metabolic disorder, or, primary collagen and/or elastin alteration mediated through an immunologic mechanism. We present herein the report of a 37-year-old Saudi female who presented with autoimmune thyroiditis associated with GA. The patient was managed with clobetasol propionate, intra-lesional prednisolone and neomercasol. There was complete resolution of the GA lesions and the patient has remained euthyroid after a few weeks. This presentation is a further evidence that GA and autoimmune thyroiditis may be associated.

Keywords: Granuloma annulare, Autoimmune thyroiditis.

Résumé
L’association d’un granulome annulaire (GA) et auto-immunité de la thyroidite a été documentée dans la littérature au cours des 13 cas précédents. Toutefois, la pathogénèse de GA reste obscure. Des facteurs pathogéniques possibles qu’a suggéré comprend: humoral et type d’hypersensibilité retardée, dégâts vasculaire, troubles métabolique, ou bien, collagène primaire et/ou bien changement elastin provoqué par un mécanisme immunologique. Nous présentons dans ce travail, un rapport d’une femme saoudienne qui était atteinte d’une auto-immune thyroidite associée au GA. On a soigné le patient avec propionate clobetasol, prednisolone intra-lesional et neomercasol. Il y avait un résolution complète des lesions GA et le patient était resté euthyroid après quelques semaines. A travers cette présentation on peut dire qu’il y a une association entre le GA et l’auto-immune thyroidite.

Introduction
Granuloma Annulare (GA) has been considered as cutaneous manifestation of the thyroid disease but the evidence remains limited. We described a new case of GA associated autoimmune thyroiditis. To our knowledge only 14 cases have been documented in the literature, including the case reported herein. Both generalized and localized form of GA has been described with this association.

Table 1 Cases of granuloma annulare and autoimmune thyroiditis reported in the literature

<table>
<thead>
<tr>
<th>Reference</th>
<th>No of patients</th>
<th>Sex</th>
<th>GA Type</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross and Shelley</td>
<td>10</td>
<td>F</td>
<td>GGA</td>
<td>Trunk</td>
</tr>
<tr>
<td>Willemsen et al</td>
<td>1</td>
<td>F</td>
<td>LGA</td>
<td>Arms, legs</td>
</tr>
<tr>
<td>Moran and Lamb</td>
<td>12</td>
<td>1</td>
<td>LGA</td>
<td>Elbows, hands, knees</td>
</tr>
<tr>
<td>Espinel et al</td>
<td>10</td>
<td>F</td>
<td>LGA</td>
<td>Elbows, thighs</td>
</tr>
<tr>
<td>Velze et al</td>
<td>8</td>
<td>F</td>
<td>LGA</td>
<td>Elbows, wrists</td>
</tr>
<tr>
<td>Magro et al</td>
<td>7</td>
<td>F</td>
<td>LGA</td>
<td>Ankle</td>
</tr>
<tr>
<td>Dabski and Winkelman</td>
<td>3</td>
<td>F</td>
<td>LGA</td>
<td>Trunk</td>
</tr>
<tr>
<td>Studer et al</td>
<td>5</td>
<td>NR</td>
<td>NR</td>
<td></td>
</tr>
<tr>
<td>Vazquez-Lopez</td>
<td>2</td>
<td>1</td>
<td>LGA</td>
<td>Elbow, foot</td>
</tr>
<tr>
<td>Kappler D et al</td>
<td>2</td>
<td>NR</td>
<td>NR</td>
<td></td>
</tr>
<tr>
<td>Present case</td>
<td>1</td>
<td>F</td>
<td>LGA</td>
<td>palms, foot and leg</td>
</tr>
</tbody>
</table>

GA = Granuloma annulare; GGA = Generalised granuloma annulare; LGA = Localised granuloma annulare; NR = Not reported

Case report
A 37-year-old Saudi female presented 4 years ago with protrusion of the eye balls and excessive sweating. Physical examination showed exophthalmos and thyroid gland enlargement affecting the right lobe. Thyroid function tests showed elevated T4 (86.8 pmol/L). Thyroid stimulating hormone (TSH) level was diminished (0.1 IU/ml). Ultrasound scan of the thyroid gland showed diffuse enlargement of the whole gland. Thyroid isotope scan revealed a homogeneous uptake. Anti-Nuclear Antibodies (ANA) and thyroid antibodies peroxidase (TPO) were positive. The patient was started on Carbimazole (Neumecasole) (10 mg/day) and Propranolol (Inderal) (40 mg/day).

The patient’s thyroid functions were controlled on the above medications for 2 years at which time she complained of asymptomatic skin lesions affecting the dorsum of hands, palms and knees. The lesions consisted of non-scaly, indurated papules and annulare plaques (Figure 1). The

Fig. 1a Granuloma annulare lesions over palm showing classical non-scaly annulare plaques

Correspondence

264

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Discussion

The cause of GA remains obscure. A pathogenetic role has been suggested for the following:\cite{1,2}: (a) hormonal and delayed-type hypersensitivity, (b) vascular damage, (c) metabolic disorder or (d) primary collagen and/or elastin alteration mediated through an immunologic mechanism. The association of GA with thyroid disease has been described in the literature but remains to be clarified.\cite{3} Several studies found 6% to 13% of patients with GA had associated thyroid disease but failed to find a definite correlation.\cite{4}

The association of granuloma annulare with autoimmune thyroiditis had been documented in 13 previous case reports\cite{5-15} (Table 1). The definition of generalized GA is the occurrence of more than 10 lesions on the trunk alone, or the trunk and limbs, while the definition of localized GA is the occurrence of a single lesion or 2 more lesions localized in one or more regions but absent on the trunk. Of the 13 cases documented in the literature, the GA was of the localized type in 11 cases and unspecified in two cases.\cite{5-15} In the present case, the GA was of the localized type. GA has also been reported to be associated with diabetes mellitus and morphea but this association still remains controversial.\cite{10-15} The association of GA with autoimmune thyroiditis might suggest an autoimmune mechanism.\cite{12} There is no evidence of cross-reaction between thyroid antibodies and dermal antigens.\cite{12}

A cell-mediated apoptosis has also been implicated to be a strong pathogenic factor in both diseases.\cite{19}

References


