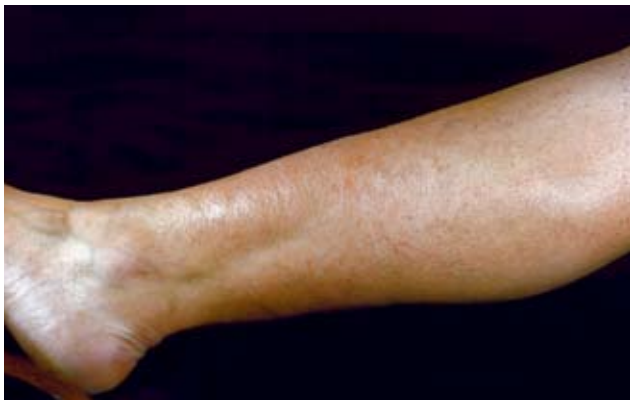
Endocrinology and the skin

Patrick J Phillips
MBBS, MA(Oxon), FRACP, MRACMA, GradDipHealth Econ(UNE), is Senior Director, Department of Endocrinology, The Queen Elizabeth Hospital, South Australia. patrick.phillips@nwahs.sa.gov.au

Warren Weightman
MBBS, FRACP, FACD, is Director of Dermatology, The Queen Elizabeth Hospital, Woodville, South Australia.

Case study

'I've got these ugly red blotches on my legs and they are getting worse?' Lisa, 32 years of age, is an accountant who always presents herself meticulously. You can understand why she doesn't like the raised red brown blotches on her shins.



The lesions are raised, indurated with follicular accentuation. They are an uneven red-brown colour that doesn't fade with pressure, nor does the tissue pit.

Lisa seems more upset and agitated than you expected. When you ask if she's under stress at work she breaks down in tears and says she feels 'agitated and on edge all the time and can't sit still for a minute'.

Question 1

What are the lesions?

Question 2

What investigations are indicated?

Question 3

What treatment options are available?

Question 4

What is the prognosis for the lesions and the underlying condition?

Answer 1

Pre-tibial myxoedema. This is part of an infiltrative dermopathy that occurs in approximately 5% of those with Graves disease. A protein and mucopolysaccharide infiltrate can occur in any part of the body but is most commonly seen on the shins. More subtle changes elsewhere may not be noticed, but it is likely that Lisa does have skin infiltration elsewhere such as in the distal digits of the fingers, the so-called thyroid acropachy which can look like finger clubbing. The infiltrative dermopathy is often associated with an infiltrative ophthalmopathy where the orbital fat and muscle is infiltrated with mucopolysaccharides, connective tissue and inflammatory cells.

Answer 2

It may not be necessary to biopsy the lesions if the clinical picture is classic. Sometimes the other signs of Graves disease (thyromegaly, hyperthyroidism, ophthalmopathy) are not present and a biopsy will exclude other causes (eg. necrobiosis lipoidica diabeticorum).

Thyroid examination and thyroid function tests would identify hyperthyroidism, which might explain Lisa's anxiety and agitation. If the thyroid is enlarged, examination will identify if the lower edge can be felt, excluding retrosternal extension.

If hyperthyroidism is found, a homogeneous increased uptake on a radionuclide scan would confirm Graves disease and the extent of the thyromegaly.

Exophthalmos may be indicated by the edge of the cornea extending beyond the superior orbital rim. Ophthalmopathy may cause diplopia especially on upward and outward gaze. If any eye disease is suspected, referral to an ophthalmologist is indicated.

It is worth remembering that 'autoimmune diseases may occur in clusters' (*Table 1*). If there is suggestion of a familial autoimmune problem, checking autoimmune antibodies in Lisa (transglutaminase, anti-endomysial antibodies associated with coeliac disease; intrinsic factor associated with pernicious anaemia; gastric parietal cell antibodies associated with gastritis; and GAD antibodies associated with diabetes) and suggesting to Lisa she

Table 1. The autoimmune cluster*

The big four	Skin related	Rare
Thyroid (Graves disease, Hashimoto disease)	Premature greying	Pituitary hypophysitis
Coeliac disease	Vitiligo	Myasthenia gravis
Pernicious anaemia	Alopecia areata	Type 1 diabetes
Atrophic gastritis	Psoriasis	Hypoadrenalism (Addison disease)
		Premature menopause
		Hypogonadism in men

*An aide memoire is to start at the top of the body (the hair) and move down toward the genitals

mention to family members that they may be at risk of one of these problems is important.

Answer 3

Although it's presumed that the underlying cause is related to the autoimmune disturbance that occurs in Graves disease, the basic cause is not known and there is no specific therapy. The major issue is usually cosmetic, although if trauma occurs to the area healing may be slow and scarring more extensive than usual. Potent topical corticosteroids under occlusion or locally injected corticosteroids are used and can be successful in reducing the size of the lesions. Cosmetic surgery may remove large unsightly lumps, however the lesions may recur in the same or a different area.

Answer 4

For the lesions – uncertain. The lesions tend to get worse and better in a manner unrelated to the thyroid disease and may occur before, during, or after the onset of Graves disease. Treatment of the hyperthyroidism neither improves nor worsens the lesions.

For the Graves disease – also uncertain. Once thyroid hormone levels are controlled, the usual practice is to continue treatment for 6–12 months and hope that in the meantime the underlying disorder will have remitted. If the problem recurs, thyroid hormone levels should be controlled and consideration given to definitive therapy usually with radioactive iodine; although surgery may be indicated for cosmetic reasons, pressure on adjacent structures, or in women wishing to become pregnant.

In the long term, most patients presenting with Graves disease and hyperthyroidism will become hypothyroid, especially those who have had definitive therapy. This is because the autoimmune process includes both stimulating antibodies causing hyperthyroidism and destructive antibodies causing long term hypothyroidism.

In the long term, Lisa may develop one of the other autoimmune endocrine problems or diseases. Her presentation with Graves disease may be just the first of an autoimmune cluster. Lisa may like to join a thyroid support organisation that offers regular newsletters, meetings and opportunities for discussion (www.thyroidfoundation.com.au).

Conflict of interest: none declared.

afp CORRESPONDENCE email: afp@racgp.org.au

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later, I was interested to discover another relevant trial which demonstrated no benefit of oral terbinafine over placebo for chronic paronychia.[5] I did not find any trials that contradicted the results of the Tosti et al[3] trial.

Putting the evidence into practice

I discussed this trial with my patient, explaining that it seemed his problem was difficult to cure, but that I could probably offer an improvement with methylprednisolone cream. I explained that antifungal treatments were not only expensive but also less effective. He was happy to try the steroid cream. I also discussed avoidance of irritants such as wetting, soaps and detergents.

A week later, his nail fold looked unchanged to me, but he described a great reduction in pain and an improvement in function. An interstate move prevented further follow up, but he left my room looking much happier than when I first met him.

Conflict of interest: none.

References

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afp CORRESPONDENCE email: afp@racgp.org.au