Urticarial vasculitis in a young woman with Graves hyperthyroidism

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A 29-year-old woman presented to the emergency department with dyspnea and palpitations, as well as a pruritic and painful rash that had developed over the previous 5 days. Her temperature was 38.6°C, heart rate was 174 beats/min and respiratory rate was 24 breaths/min. We observed a diffusely enlarged thyroid gland as the patient swallowed and annular, erythematous–violaceous plaques on her face, trunk and extremities (Figure 1). Laboratory investigations showed a free tetraiodothyronine level of 2.37 (normal 0.70–1.48) ng/dL, a thyroid-stimulating hormone level of less than 0.008 (normal 0.35–4.94) μIU/mL, an antithyroid peroxidase antibody level of 67.8 (normal < 5.6) IU/mL, a thyroid-stimulating hormone receptor antibody level of 7.5 (normal < 1.75) IU/L and a complement C3 level of 75.6 (normal 90–180) mg/dL. Skin biopsy from a lesion on the patient's abdomen showed perivascular infiltrates with numerous neutrophils, nuclear dust, scattered eosinophils and erythrocyte extravasations, consistent with leukocytoclastic vasculitis (Appendix 1, available at www.cmaj.ca/lookup/doi/10.1503/cmaj.211926/tab-related-content).

We diagnosed hypocomplementemic urticarial vasculitis associated with Graves hyperthyroidism. We excluded other conditions associated with urticarial vasculitis, including viral hepatitis, autoimmune connective diseases, cryoglobulinemia and hematologic malignant diseases.[1,2] Our patient's skin lesions resolved after 2 weeks of treatment with methylprednisolone (40 mg/d), propylthiouracil (200 mg/d) and propranolol (30 mg/d). She had no recurrence of urticarial vasculitis in the 3 months after treatment; her thyroid hormone levels remained normal using a tapered dose of propylthiouracil (50 mg/d).

Urticarial vasculitis presents with urticarial lesions and histopathologic features of cutaneous leukocytoclastic vasculitis. The lesions are more purpuric, are longer lasting (> 24 h) and have a tendency to burn, compared with other causes of acute urticaria such as infection or allergy to food.[3] The association of urticaria with thyroid autoimmunity is widely recognized.[1–3] In a retrospective study, 42% of patients with urticarial vasculitis had abnormal antithyroid antibodies, a 15-fold higher odds than patients with chronic spontaneous urticaria.[3] Clinicians should consider important mimics in their differential, such as antithyroid medications, which are known to induce vasculitis associated with antineutrophil cytoplasmic antibodies.[4]

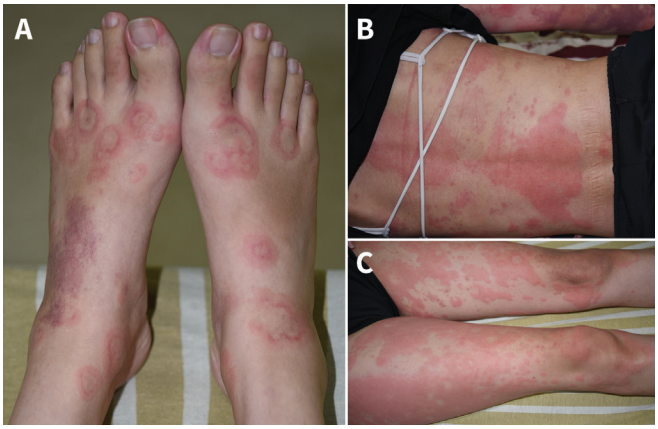

Figure 1: Urticarial vasculitis in a 29-year-old woman with Graves hyperthyroidism. (A) Multiple annular, erythematous–violaceous, urticarial plaques with petechiae dorsally on both feet. (B) Erythematous, wheal-like plaques with confluence on the patient's back and purpura on her arms. (C) Widespread erythematous, urticarial plaques with purpuric change on both lower extremities.

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