LETTER

Dermatitis due to Toxicodendron plants: a common occurrence during autumn

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Toxicodendron succedaneum, commonly called the Japanese wax or rhus tree, is a well-recognised cause of severe allergic contact dermatitis following dermal contact.1-2

These plants contain an oily resin, whose active toxins (urushiols) are potent sensitisers.3 Toxicity typically occurs in the autumn when the oily resin in the plant leaves becomes enriched with the toxic principal coinciding with the leaves changing colour from green to red.4 This time of year, therefore, serves as a timely reminder on the toxicity of this tree.

Toxicodendron succedaneum is native to Eastern Asia and belongs to the family Anacardiaceae, which is one of the most common plant families to cause allergic contact dermatitis worldwide.3 Urushiols are also the incriminated agent in poison ivy (Toxicodendron radicans) poisonings.4 Toxicodendron succedaneum is a small deciduous tree or large shrub which was once popular in New Zealand gardens due to its attractive scarlet autumn foliage (Figure 1). While mostly found as ornamentals in private gardens, distribution of its seeds by birds can lead to it becoming established in public areas and urban bushland.3

Urushiols are found within the entire plant including dead plant tissue.4 Adverse effects can occur from skin contact, following ingestion or after inhalation of the smoke of burning plants. Additionally, dermal contact with contaminated items like clothing, animals and tools can also result in adverse effects.5 Damage to the plant is necessary for the release of resin, and contact with this resin is required to induce a reaction. Slight contact with uninjured plant parts may not lead to harm,4 but any contact with Toxicodendron succedaneum should be avoided. Adverse reactions appear relatively common in children playing in or around the tree, and in adults while gardening or pruning.1

Following contact, symptoms usually appear within 24 to 48 hours, but onset can range from five hours to 15 days.4 The principal effect is intensely pruritic erythematous papular lesions. A burning sensation, vesicles, bullae and marked oedematous reactions can follow.1,3 The dermatological symptoms typically resolve within three weeks, but can last for up to six weeks in susceptible individuals.4

Initial treatment should include immediate flushing of the skin with water and a mild soap. It is recommended that thorough cleaning of the hands and under the fingernails is performed to stop further self-exposure. Absorption of urushiol is rapid; complete absorption into human skin occurs in approximately 30 minutes.4 It is therefore important to promptly decontaminate the skin to minimise the level of exposure. Clothes should be completely changed,3,5 and all clothing or objects that have been in contact with plant material need to be thoroughly washed with soap/detergent to prevent subsequent exposure. Symptomatic patients presenting to emergency departments can be treated with topical corticosteroids, systemic antihistamines and, if required, oral analgesics. In severe cases oral or parenteral steroids for a seven to 10 day period, followed by tapering off for another seven to 10 days, may be required.1,3,4 Recurrence of symptoms can occur if the course of systemic steroids is too short.4 The importance of completing the course of steroids should be emphasised to the patient.
As this illness can be debilitating, a focus on prevention is required, including identification and avoidance of these plants. Special care is required if the plant needs to be pruned or removed; protective clothing is required to cover as much of the skin as possible, and should include heavy duty vinyl gloves. Careful disposal of plant material is also required. While not officially controlled in New Zealand, it is now classed as a noxious weed in a number of Australian states. Identified specimens of noxious weeds must be destroyed to stop the spread of the plant, which is also in the interests of public health.

Figure 1: Branch of Toxicodendron succedaneum showing the characteristic bright red colour of its autumn leaves.

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