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8

Raynaud's phenomenon

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A B S T R A C T

Raynaud's phenomenon (RP) is a major cause of pain and disability in patients with autoimmune connective tissue diseases (CTDs), particularly systemic sclerosis (SSc). The clinician must perform a comprehensive clinical assessment in patients with RP to differentiate between primary (idiopathic) and secondary RP, in particular (for rheumatologists), secondary to an autoimmune CTD, as both the prognosis and treatment may differ significantly. Key investigations are nailfold capillaroscopy and testing for autoantibodies (in particular, those associated with SSc). Patients with RP and either abnormal nailfold capillaroscopy or an SSc-specific antibody (and especially with both) have a high risk of transitioning to an autoimmune CTD. Both nailfold capillaroscopy and autoantibody specificity may help the clinician in predicting organ-based complications. The management of CTD-associated RP requires a multifaceted approach to treatment, including patient education and conservative ('non-drug') measures. Patients with CTD-associated RP often require pharmacological treatment, which in the first instance is usually a calcium channel blocker, although other agents can be used. There is an increasing tendency to use phosphodiesterase type 5 inhibitors early in the treatment of CTD-associated RP. Oral therapies are commonly associated with side effects (often due to systemic vasodilation) that may result in failure of dose escalation and/or permanent discontinuation. Intravenous prostanoid therapy and surgery (e.g., botulinum toxin injection and digital sympathectomy) can be considered in severe RP. Patients with CTD-associated RP can develop a number of

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ischaemic digital complications (primarily ulcers and critical ischaemia), which may be associated with significant tissue loss. Future research is required to increase the understanding of the pathogenesis and natural history of RP (to drive therapeutic advances), and to explore/develop drug therapies, including those that target the mechanisms mediating cold-induced vasoconstriction, and locally acting therapies free of systemic side effects.

Introduction

Raynaud's phenomenon (RP) is common in patients with autoimmune connective tissue diseases (CTDs) having a significant impact on patients' perceived quality of life [1,2]. RP manifests as an episodic colour change of the extremities, triggered by cold exposure and/or emotional stress. RP is often one of the earliest clinical manifestations observed in patients with CTDs; thus, it presents an early opportunity to identify patients likely to develop a CTD, in particular, systemic sclerosis (SSc). The aim of this review is to provide an update on the assessment of patients with RP, the natural history of CTD-associated RP and advances in therapies (including structured protocols) for RP and for the most severe ischaemic complication critical digital ischaemia (treatment of SSc-related digital ulceration is discussed in Chapter 1).

Assessment of the patient with RP

RP (Fig. 1) is common. The prevalence estimates vary, most likely reflecting differences in definition of RP between studies as well as geographic variations. One UK study suggested that the prevalence could be as high as 19% [3], although most studies have suggested lower prevalences of 3–5% in the general population [4].

The vast majority of patients presenting with RP will have primary (idiopathic) RP (PRP), which is 'benign', in that it is entirely reversible and does not progress to irreversible tissue injury. However, the clinician must bear in mind that RP has a differential diagnosis (Table 1). Although this includes a large

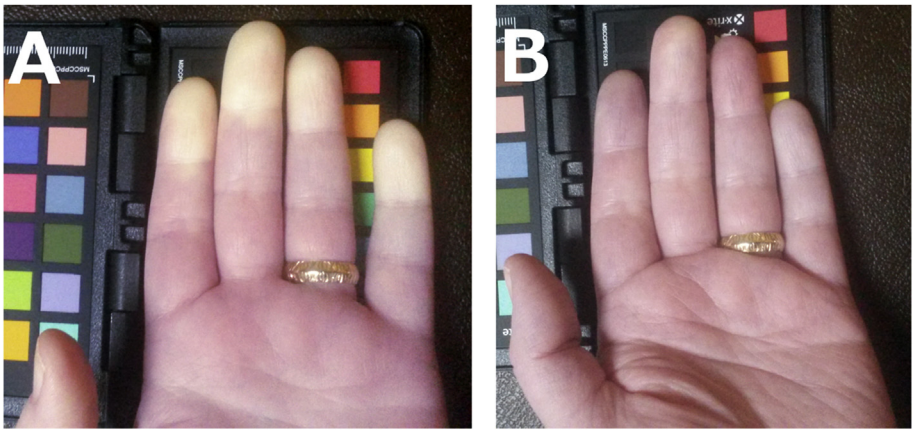

Fig. 1. Photographs of an RP attack taken by a patient with SSc using a smartphone camera. A: Whiteness (pallor of all four fingertips) is observed. B: The fingers return to their normal colour. The time between the two photographs was approximately two and a half minutes. Photographs provided courtesy of Dr Graham Dinsdale, the University of Manchester.