

# Cutis marmorata marbling in an individual with decompression illness following repetitive SCUBA diving

Michael M Modell

Brighton and Sussex Medical School, UK

**Correspondence to**  
Michael Modell,  
m.modell1@uni.bsms.ac.uk

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## DESCRIPTION

A 49-year-old female self-contained underwater breathing apparatus (SCUBA) diver who presented to the Hyperbaric Medical Center with sudden skin discolouration, fatigue, dizziness and blurred vision 3 h following a dive. All dives, made on air, were up to 25 m deep, with no omission of decompression safety stops.

Decompression illness (DCI) is a result of nitrogen accumulation within the body's tissues, causing reduced blood flow and impaired oxygen delivery. DCI can affect multiple systems, for example, central nervous system, musculoskeletal, cardiovascular and skin.<sup>1</sup> Cutis marmorata, a cutaneous manifestation of DCI is indicative of systemic DCI pathology.<sup>2</sup> Early diagnosis and investigations are essential. The rash begins with cyanotic mottling and may quickly spread peripherally, becoming erythematous (figure 1). Marbling indicates nitrogen bubbles present within tissues and blood vessels,<sup>1</sup> and is due to vascular congestion and an inflammatory response towards the bubbles.<sup>3</sup>

The patient was diagnosed with DCI with skin, lymphatic and neurological involvement. There were neurological signs of nystagmus, decreased

upper and lower limb strength and lymphoedema. Non-specific symptoms such as fatigue, lethargy, malaise, headache, generalised aches and pains are most commonly reported.<sup>1</sup>

She underwent recompression inside a hyperbaric chamber for three consecutive days and was recommended daily hydrotherapy exercises. The rash resolved on recompression and a full neurological recovery was made with no clinical deficits detectable. A likely cause for her DCI could be repetitive and multiple day diving, leading to an accumulation of residual nitrogen within tissues.

Follow-up investigations revealed a patent foramen ovale, which may have allowed bubbles to bypass the pulmonary filtration system, contributing to her DCI.<sup>1</sup>

## Learning points

- ▶ Decompression illness is a serious complication requiring oxygen and urgent hyperbaric recompression treatment.
- ▶ Any individual with positive responses to the diving medical questionnaire should be referred to a local diving medical specialist.
- ▶ The UK Sport Diving Medical Committee, Diver's Alert Network (DAN) and the Diving Diseases Research Centre (DDRC) are good sources of medical information for diving.

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**Figure 1** Cutis marmorata marbling (left gluteal) occurring in a 49-year-old female self-SCUBA diver with decompression illness.



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