

Multiple Hypopigmented Macules on Both Hands and Forearms: A Quiz

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A 29-year-old man presented to our clinic with suspicion of urticaria. He had a 3-year history of pale spots on his hands and arms possibly aggravated by physical activity. A skin examination revealed multiple hypopigmented macules measuring 2–4 mm in diameter, on the back of his hands and distally on his forearms (Fig. 1). The patient reported that the pale spots occurred independently of season, pressure and temperature but could be provoked by physical activity. Before referral to our department, routine blood tests and cryoglobulin had been performed and were all normal. He had a negative skin prick test and histamine release test for chronic urticaria. A skin biopsy had shown normal tissue.

What is your diagnosis?



Fig. 1. White macules with a diameter of 2–4 mm on the dorsum of the hands in a 29-year-old male patient.

Answers to Quiz

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Diagnosis: Bier Spots

Based on the clinical features, the patient was diagnosed with Bier spots, which are asymptomatic anemic macules caused by an exaggerated physiological vasoconstrictive response (1–4). The phenomenon is benign and is usually seen in people between 20 and 40 years of age, more commonly in men (2, 5).

In 1898, Dr. August Bier described a series of experiments on peripheral vascular physiology – including one with external occlusion of the blood flow to the forearm (6). The arm became cyanotic, and pale spots appeared. Thus the white spots that occur on arrest of blood flow to the forearm are referred to as Bier spots. In 1924, Dr. Elizabeth Pauline Wolf described 3 varieties of spots: one red and two white, with red spots and one type of white spots related to collateral arteries and one type of white spots due to cold-induced contraction of superficial vessels (7). In 1986 it was concluded by Wilkin & Martin, that there are only white spots based on vasoconstriction (1).

Bier spots have been related to conditions such as pregnancy and cryoglobulinaemia (8, 9). Awareness of this benign con-

dition is important to reassure patients and avoid confusion with e.g. urticaria, vitiligo and naevus anemicus.

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