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Diffuse Bier spots

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Abstract

A 34-year-old man presented with a 6-month history of hypopigmented macules that were interspersed with blanching erythematous macules on the trunk, upper extremities, and lower extremities. Bier spots are small, hypopigmented macules that are usually found on the arms and legs of young adults. The intervening skin may seem erythematous but blanches with pressure so that the hypopigmented macules disappear. This is a benign vascular anomaly.

A 34-year-old man was referred to the Dermatology Clinic at Bellevue Hospital Center in August 2004, with a 6-month history of asymptomatic, white spots on his skin. He had recently been treated for tinea corporis by his primary care doctor without improvement. The spots on his arm disappeared when he raised his arms above his head. Although asymptomatic, these spots bothered the patient cosmetically, and he was insistent on attempting any potential therapy. Therefore, nifedipine 60 mg sustained release tablet daily was prescribed with careful monitoring of blood pressure for 3 weeks. The patient noted only minimal change. The nifedipine was discontinued, and loratadine 10 mg daily and cimetidine 200 mg three times daily were prescribed. Because of drowsiness, he discontinued both medications.



Figure 1

On the trunk, upper extremities, including the palms, and lower extremities were generalized, hypopigmented, 1-4 mm macules interspersed with blanching, erythematous macules. The lesions gave a reticulated, mottled appearance. The lesions were associated with dependency

of the limbs and almost disappeared completely with elevation of the limbs.

A complete blood count, comprehensive metabolic panel, coagulation panel, antinuclear antibody, erythrocyte sedimentation rate, rheumatoid factor, and anti-centromere antibody were normal or negative.

Comment

Bier spots were first described in 1898. These spots are small, irregular, hypopigmented macules that are usually found on the arms and legs of young adults. Bier spots represent a distinct pattern of vascular mottling, in which the intervening skin may seem erythematous but blanches with pressure so that the hypopigmented macules disappear. The hypopigmented macules can be elicited by placing an affected limb in the dependent position. When the limb is raised, the macules disappear. Awareness of this condition is important because the phenomenon can resemble pigment changes [1, 2].

Bier spots are a vascular anomaly thought to be caused by vasoconstriction in small vessels. Hence, there is venodilation in the erythematous areas and venoconstriction in the pale areas. Bier spots are regarded as an exaggerated physiologic, vasoconstrictive response and are induced by venous stasis-associated hypoxia or, conversely, by a failure of the venoarteriolar reflex in dermal ascending arterioles in response to venous filling [3].

A single case report described an association between Bier spots and pregnancy. In that case, the speculation was that the Bier spots were secondary to the exaggerated physiologic response of small vessels to venous hypertension in certain pregnant women. This condition resolved in the postpartum period [4]. Another single case report has described an association between Bier spots and cryoglobulinemia. This led the authors to speculate that hyperviscosity, as seen in cryoglobulinemia, could play a pathogenic role in Bier spots [5].

The largest case series reported in the literature, which includes eight patients, suggests that Bier spots may develop spontaneously with venous stasis. That report describes the appearance of the spots when mild venous stasis is created by placing an extremity in the dependent position. These spots then disappear when the extremity is elevated, and normal venous return is restored. Laser Doppler measurements showed a higher flow of blood in the spots than in the surrounding skin [1].

References

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