



Proximal ischemia is a frequent cause of exercise-induced pain in patients with a normal ankle to brachial index at rest

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Titre Proximal ischemia is a frequent cause of exercise-induced pain in patients with a normal ankle to brachial index at rest

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Résumé en
anglais

BACKGROUND: Excluding a vascular origin of exercise-related pain is often difficult in clinical practice. Recent papers have underlined the frequent association of concurrent lumbar spine degenerative disease and peripheral arterial disease. Furthermore, even when suspected, isolated exercise-induced proximal ischemia is difficult to diagnose. Measurement of transcutaneous oxygen pressure (tcpO₂) is an interesting and accurate method to differentiate proximal (buttock) from distal (calf) regional blood flow impairment (RBFi) during exercise. **OBJECTIVES:** We searched for isolated proximal-without-distal RBFi as a possible cause of claudication, in patients with borderline (ABI-b: 0.91 - 0.99) or normal (ABI-n: 1.00 to 1.40) ankle to brachial index at rest. **STUDY DESIGN:** Retrospective cohort design study. We analyzed patients referred to our laboratory with symptom limiting claudication and an ankle brachial index within normal limits. **SETTING:** University-based exercise-investigation center. **METHODS:** Over a 12-year period, we identified 463 patients referred to our laboratory that had their lowest resting ABI between 0.90 and 1.40. The tcpO₂ on chest, buttocks, and calves were recorded during treadmill walking tests (3.2 km/h, 10% slope) in 220 ABI-b and 243 ABI-n unique consecutive patients complaining of limiting claudication (each patient's ABI was the lowest of the 2 legs). Limiting claudication was defined as the reported inability to walk 1 kilometer without stopping. A DROP index (limb tcpO₂-changes minus chest tcpO₂-changes from rest) below -15 mmHg was used to indicate a positive result (i.e. exercise-induced RBFi). **RESULTS:** Treadmill exercise showed evidence for proximal or distal RBFi, of at least one side, in 128 out of 220 patients (58.2%) and in 86 out of 243 (35.4%) patients with ABI-b and ABI-n, respectively. Isolated proximal-without-distal RBFi was found in 32 out of the 128 (25.0 %) positive tests in ABI-b and 32 out of the 86 (37.2%) positive tests in ABI-n patients. **LIMITATIONS:** Study limitations include the absence of systematic follow-up of diagnosed patients and absence of systematic search for cardio-respiratory co-morbid conditions. **CONCLUSION:** Isolated proximal-without distal RBFi is found in approximately one out of 7 patients complaining of symptom limiting claudication with a borderline or normal resting ABI. Exercise-tcpO₂ may help to discriminate patients with arterial claudication that could benefit from invasive vascular investigations and procedures.

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