

Signs and symptoms in plantar vein thrombosis

Sinais e sintomas de trombose da veia plantar

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To the Editor,

We wish to contribute further to the discussion initiated by França *et al.* in their paper, “Diagnosis of plantar vein thrombosis by vascular ultrasound: a case report,” by highlighting three historical clinical signs that may help raise suspicion for plantar vein thrombosis (PVT).¹ As França *et al.* emphasize, PVT is rare and often underrecognized, with non-specific symptoms such as plantar pain, edema, and difficulty walking.¹

Before the routine use of vascular ultrasound, early 20th-century clinicians described physical signs that, although not pathognomonic, could support consideration of lower extremity thrombosis when unexplained plantar pain is present.

Kurt Denecke (1903–1991) observed that after active foot flexion following prolonged bed rest, patients may develop sharp pain at the calcaneus within 24 hours. He regarded this as an early sign of thrombosis and advised assessing for pressure pain over the medial dorsum of the foot.²

Erwin Payr (1871–1946) described tenderness over the calcaneus on the medial plantar aspect and later over the posterior tibial vein. Passive dorsiflexion could induce pain, especially with simultaneous pressure on the deep calf veins. Payr hypothesized that thrombosis may begin at the *rete plantar venosum*. Within 24 hours, edema, calf induration, and resistance to passive dorsiflexion may appear.³

Robert Neumann (1902–1962) noted that thrombi often form where ligaments, tendons, or bone cross veins. He described “proximal” and “distal” plantar vein points resulting from segmentation in the plantar region, which may contribute to lateral PVT. These sites can cause vascular bundle entrapment.⁴

The rarity of PVT likely reflects historical underrecognition and modern preventive measures such as early mobilization. Nonetheless, these signs

may help raise suspicion in patients with unexplained plantar pain after bed rest or immobilization and should prompt ultrasound confirmation.

DATA AVAILABILITY STATEMENT

Data not reported or used: “Data sharing does not apply to this article, as no data were generated or analyzed.”

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RESPONSE LETTER

Dear editor,

Initially, we would like to thank you for your pertinent comments on our manuscript, “Diagnosis of plantar vein thrombosis by vascular ultrasound: a case report,” published in the *Jornal Vascular Brasileiro*. We are grateful for the historical insights shared, which further enrich our understanding of plantar vein thrombosis.

We found the references to the classical clinical signs described by Denecke, Payr, and Neumann¹ to be highly relevant. These physical findings may help raise early clinical suspicion for plantar vein thrombosis. As highlighted in your letter, the rarity of reported cases of plantar vein thrombosis may lead to underdiagnosis or misdiagnosis. In clinical scenarios involving unexplained plantar pain, edema, or difficulty walking, especially following a period of immobility or prolonged bed rest, awareness of these physical signs can assist physicians in considering plantar vein thrombosis in the differential diagnosis and in requesting a Doppler ultrasound, to assess vein compressibility.

We sincerely thank you again for your valuable contribution.

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