

Palmar Digital Vein Thrombosis in a Patient with Carpal Tunnel Syndrome: A Coincidence or an Association?

Dear Editor,

Spontaneous thrombosis of the palmar digital veins is a rare entity. Since its first description by Jadassohn in 1936, only 37 cases have been reported in the literature.^[1,2] It presents as spontaneous painful nodules on the palmar aspect of the digits, found at or near the level of the proximal interphalangeal joints, but can also be located over the middle or distal interphalangeal joints.^[2] The exact etiopathogenesis of palmar digital vein thrombosis is unclear. According to "Virchow's triad," endothelial injury, hypercoagulability, and stasis are the mechanisms predisposing to the formation of venous thrombosis. Multiple factors have been speculated including the anatomy of these veins, formation of varices, intraluminal stasis of blood flow caused by flexion of the fingers and possibly by wearing rings, and endothelial injury owing to the superficial location of the digital veins getting traumatized while doing manual work.^[1] The role of hypercoagulability in digital venous thrombosis is not known. Though there are a few reports of its association with conditions having hypercoagulability such as antiphospholipid antibodies, concomitant deep vein thrombosis, oral contraceptive pills, and coronavirus disease 2019 (COVID-19) infection, the majority of cases have occurred spontaneously with no underlying coagulation disorder.^[2] In addition, previous reports point to female predisposition with 85% of reports in females.^[1,2] This is a report of recurrent palmar digital vein thrombosis in a patient with carpal tunnel syndrome, along with a discussion on its possible association.

A 45-year-old woman presented to the dermatology outpatient department with a complaint of recurrent episodes of painful bluish swellings on the palmar aspect of fingers for the last 2 years. These were spontaneous in onset without a history of any significant trauma. The acute pain was relieved in some hours, but the swelling took 7–10 days to subside leaving behind hyperpigmentation. The current episode involved the middle finger of the left hand for the last three days. There was no personal or family history of venous thrombotic events. There was no history of oral contraceptive intake, recurrent miscarriages, or intravenous drug abuse. Of note was that the patient wore rings on multiple fingers of both hands daily, worked in a clinical laboratory, and did household chores at home. In addition to this, the patient also complained of recurrent episodes of numbness and paresthesia involving the index, middle, ring fingers, and thumbs of both hands. This complaint was also present for the last 2–3 years.

On examination, a tender bluish longitudinal cord-like nodule 0.5×0.2 cm was present on the palmar aspect of

the proximal interphalangeal joint of the middle finger of the left hand. The cord-like structure was firm and slipped sideways under the fingers when palpated across its length [Figure 1]. A skin biopsy of the lesion revealed the presence of a small thrombus attached to one end of an ectatic dermal vein [Figure 2]. Based on this, a diagnosis of digital palmar vein thrombosis was made. The blood workup for hypercoagulable states was unremarkable. With a clinical possibility of carpal tunnel syndrome, Phalen's and Durkan's tests were performed and were positive. Further, nerve conduction studies confirmed bilateral median nerve neuropathy, right more than left.

This report presents an association of palmar digital vein thrombosis with carpal tunnel syndrome. The authors feel this association may not be coincidental and it is likely that the entrapment median neuropathy may be playing a role as a contributing factor for thrombosis by causing venous stasis. It has been studied that more than 50% of patients with carpal tunnel syndrome have autonomic dysfunction.^[3] Autonomic dysfunction is known to cause vascular tone alteration by impairing sympathetic vasoconstriction, which results in venous stasis.^[4] This role of autonomic dysfunction leading to venous stasis and thrombosis was also highlighted in a patient of chronic inflammatory demyelinating polyneuropathy with only autonomic involvement, who developed deep vein thrombosis



Figure 1: A bluish longitudinal cord-like nodule of size 0.5×0.2 cm, present on the palmar aspect of the proximal interphalangeal joint of the middle finger of the left hand

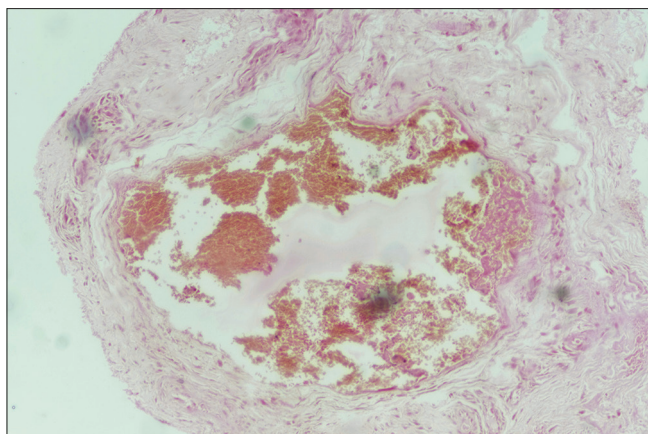


Figure 2: The presence of a small thrombus attached to one end of an ectatic dermal vein (H and E, 10X)

and pulmonary embolism.^[5] Other points that favor the association are the commonly reported risk factors such as vigorous repetitive manual work and female predisposition in both palmar digital vein thrombosis and carpal tunnel syndrome.

In conclusion, this is the report of an association of a rare entity, palmar digital vein thrombosis with carpal tunnel syndrome. Further studies are warranted to validate a possible causative role.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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