

CASE REPORT

Two Cases of Thrombosis of the Palmar Digital Vein

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Palmar digital vein thrombosis causing one or more nodules seems to be a relatively rare condition, judging by the dearth of reports in the literature. It should always be considered in a patient who presents with a painful, firm, blue nodule located at or in close proximity to one of the flexion crease of the finger. Common lesions presenting as one or more solid digital nodules are ganglions, epidermal inclusion cysts, giant cell tumors, and lipomas. Thrombosis of the palmar digital veins should, however, be part of the differential diagnosis of palmar digital nodules because it is possible to manage it conservatively. We report two cases of thrombosis of palmar digital vein in a 33-year-old woman and a 78-year-old man. (**Ann Dermatol 24(3) 351~354, 2012**)

-Keywords-

Palmar digital, Thrombosis, Vein

INTRODUCTION

In 1936, Jadassohn¹ described "thrombosis of the digital vein, manifesting as painful, firm, blue nodule of palmar aspect. The patient is usually female, from a wide spectrum, but most often between 35 and 65 years old." Common lesions presenting as one or more solid digital

nodules are ganglions, epidermal inclusion cyst, giant cell tumors, and lipomas². Thrombosis of palmar digital vein should, however, be part of the differential diagnosis of palmar digital nodules because it is possible to manage it conservatively³. Thrombosis of palmar digital vein is very rare, so we report two cases of it in a 33-year-old woman and a 78-year-old man.

CASE REPORT

A 33-year-old female visited our clinic complaining of an asymptomatic nodule on the proximal interphalangeal (PIP) joint of palmar aspect of right 4th finger. Physical examination was not otherwise remarkable except for the skin lesion. Skin examination revealed solitary slightly bluish papule on the palmar aspect of right 4th finger (Fig. 1). All laboratory examinations on complete blood count, blood coagulation test, routine chemistry and venereal disease research laboratory test were within the normal range or negative. Skin biopsy from the nodule showed a thin vascular wall and a partial thrombus in the dilated vascular space (Fig. 2A). In the high power field, thrombus

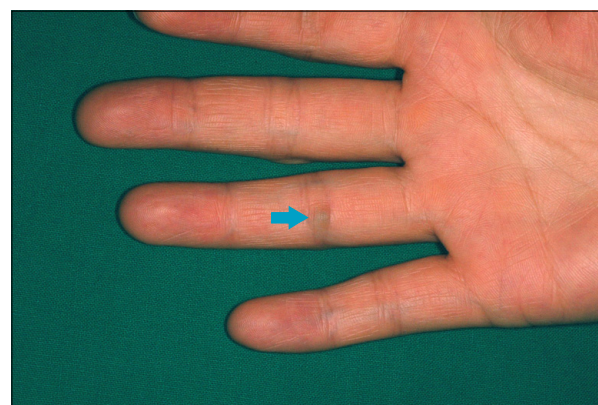


Fig. 1. Localized slightly bluish papule on the palmar area of right 4th finger.

Received February 2, 2011, Revised June 22, 2011, Accepted for publication June 28, 2011

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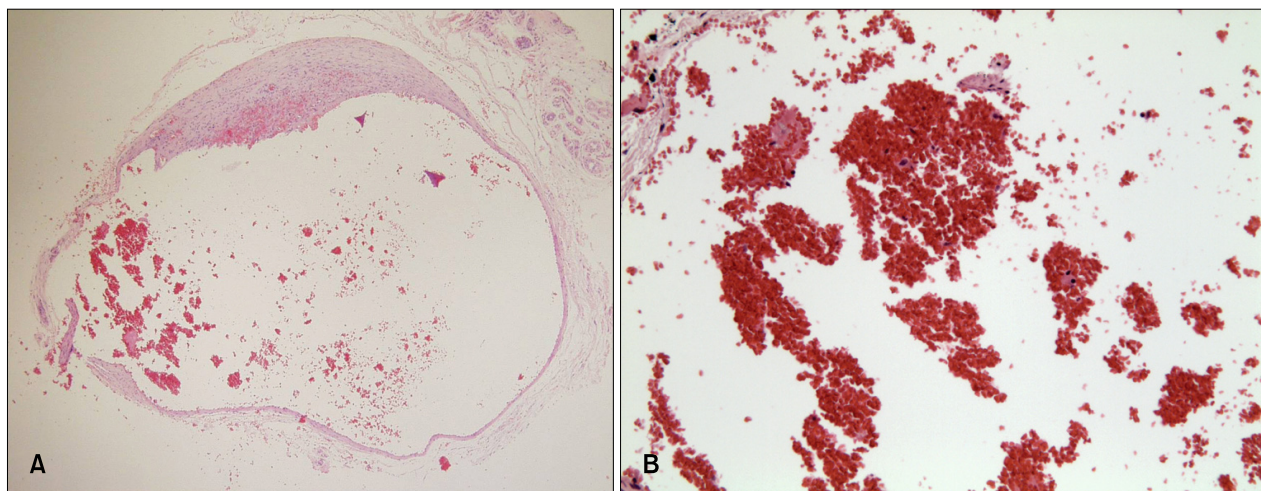


Fig. 2. (A) Thin vascular wall and a partial thrombus in the dilated vascular space (H&E, ×40). (B) Thrombus consisted of aggregated red blood cell in the vascular space (H&E, ×400).

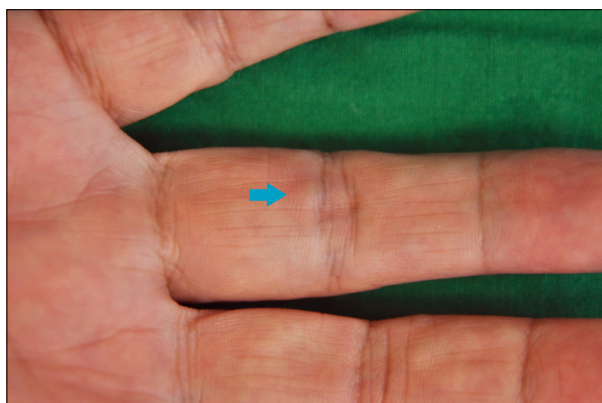


Fig. 3. Localized skin-colored papule on the palmar area of right 4th finger.

consisted of aggregated red blood cell in the vascular space was seen (Fig. 2B). Based on the clinical and histological findings, the patient was diagnosed with thrombosis of palmar digital vein. No evidence of recurrence was seen after excision.

In the second case, a 78-year-old male visited our clinic complaining of a painful nodule on the palmar aspect of right PIP joint of right 4th finger for one year. Medical history included radiation therapy for prostate cancer. Physical examination was unremarkable except for the skin lesion. Skin examination revealed a solitary ill defined skin-colored papule on the palmar area of right 4th finger (Fig. 3). All laboratory examinations are within the normal range and histologic findings from the nodule were same as our first case (Fig. 4). Based on the clinical and histological findings, the patient was diagnosed with thrombosis of palmar digital vein. He has received

conservative management such as massaging the lesion, applying hot compresses or compression bandages.

DISCUSSION

Since thrombosis of the digital vein was described by Jadassohn¹ in 1936, a total of 26 cases have been published in English literature¹⁻⁷. The patients are usually female of any age. Nodules are always located on the palmar side of the digit. The fourth digit is most often affected. The most common location of the nodule on the finger was around the PIP joint, but nodules have also been located over the middle or proximal phalanx or at the level of the distal interphalangeal joint. Hand dominance did not seem to be of importance as both hands were equally affected. Pain, tenderness, erythema and warmth are features suggestive of this diagnosis⁴. The anatomy of the palmar digital venous system includes four functionally different systems: arborized vein, venous arches, and deep and superficial axial veins. Thrombosis seems most likely to occur in the superficial axial veins⁸. Structurally palmar veins are surrounded by a sheath of fine connective tissue and fat cushions. When this supporting structure deteriorates through aging, the veins collapse more easily and thrombosis of the palmar vein occurs more frequently than that of dorsal vein. Furthermore, palmar veins are smaller in diameter than dorsal veins and contain more valves^{9,10}.

Other contributing factors, apart from changes in the vessel wall leading to venous thrombosis, are changes in the blood flow and hypercoagulability of the blood. It has been suggested that intraluminal stasis of blood flow can be caused by flexion of the fingers and possibly by

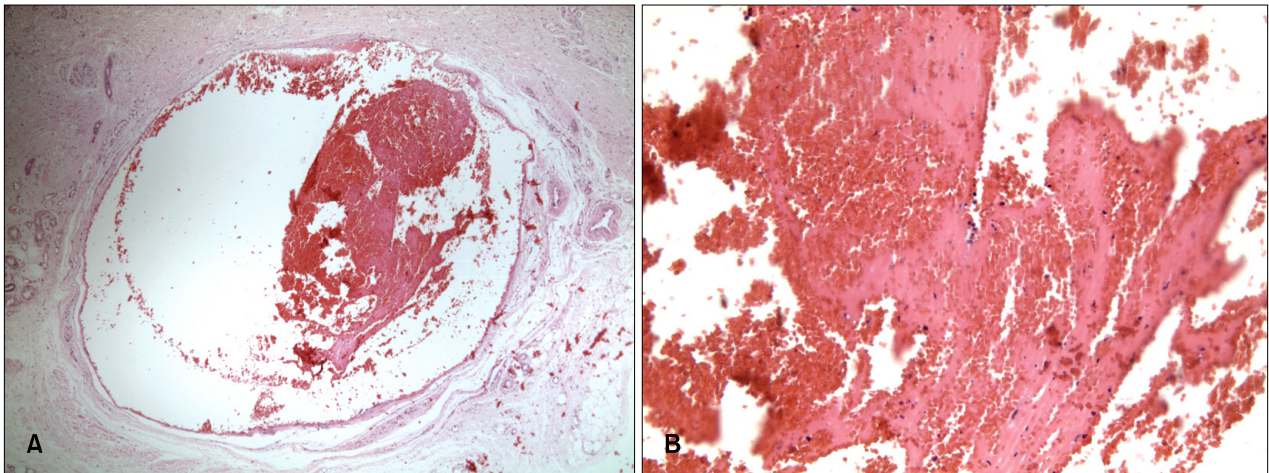


Fig. 4. (A) Thin vascular wall and a partial thrombus in the dilated vascular space (H&E, $\times 40$). (B) Thrombus consisted of aggregated red blood cell in the vascular space (H&E, $\times 400$).

wearing rings^{11,12}. The exact role of hypercoagulability in digital venous thrombosis has not been investigated but Lechner et al.⁵ described a patient with deep vein thrombosis of both legs and recurrent lung emboli preceded by digital palmar vein thrombotic nodules. The inference of this is that when factors related to coagulation show hypercoagulability, thrombosis of the digital vein could occur. In both cases, there is no local trauma history or any signs of hypercoagulability noticed. Possibly trivial, unrecognized trauma causes thrombosis of the palmar digital vein. A typical Korean housewife has many chores to do and that leads to vulnerability to mild unnoticed traumas. In PIP joint area, the skin is very thin and pliable and superficial veins are readily visible crossing the PIP joint creases. These veins are more vulnerable to trivial, unrecognized trauma⁴. So her many chores could be a reason for the thrombosis of the palmar digital vein.

In our second case, there was no remarkable lab finding either. His poor venous flow due to his old age is suspected to have caused the thrombosis. Other vascular or intravascular conditions that could present as a blue mass on a digit include varicosities with or without thrombosis, hemangiomas, and spontaneous hematomas, also known as Achenbach syndrome. It has been suggested that to distinguish between a thrombus and a hemangioma or varix of a digital vein, a tourniquet test may be of benefit. Applying a small tourniquet at the base of the involved finger will result in engorgement of the non-thrombosed varix or hemangioma². But the palmar digital thrombotic nodules are less pronounced after prolonged raising of the arm. This method works efficiently even in out-patient clinic to differentiate from other diseases. Histopathological examination of digital vein thrombosis

shows dilated vascular spaces, with thin-walled channels characterized by partial thrombosis and organization. In contrast to a partially thrombosed hemangioma, which may have a similar appearance, new vessels do form within the original vessel wall at the level of the thrombotic core². Thrombus of the vein will either obliterate completely or recanalize. Conservative management of massaging the lesion, applying hot compresses or compression bandages, and taking aspirin can relieve the symptoms. If the diagnosis is not suspected clinically, if the symptoms persist, or if the nodule progressively enlarges, the nodule should be excised to confirm the diagnosis^{3,4}.

In our first case, initial uncertainty led us to perform the excision for the differential diagnosis. There was no sign of recurrence after excision for next three years. With the second case, the size of remnant didn't grow for two months follow-up after biopsy. This is a rare case and differential diagnosis with other nodular diseases appearing on the palmar aspect of finger is required since conservative treatment is possible. Our cases have no distinct characteristics from previously reported cases. The significance of this report lies in that dermatologists will be aware of this rare disease and thus treat it appropriately. Herein, we documented a rare case of thrombosis of palmar digital vein as remainder of the importance of suspicion and differential diagnosis when a hard, blue colored, and painful nodule appears on palmar aspect of finger, especially proximal part of flexion crease.

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