**Case Report**

**Basilic vein aneurysm and palmar intramuscular hemangioma with peri and inter tendinous growth**

Farzaneh Shobeirian, MD, Radiologist\(\textsuperscript{a,}^{*}\), Zahra Ghomi, MD, Radiologist\(\textsuperscript{b}\), Mohammad Zare Mehrjardi, MD, Radiologist\(\textsuperscript{c}\), Nikan Zerafatjou, MD, Urologist\(\textsuperscript{d}\)

\(\textsuperscript{a}\) Department of Radiology, Razi Hospital, Guilan University of Medical Sciences, Rasht, Iran
\(\textsuperscript{b}\) Department of Radiology, Mofid Children's Hospital, School of Medicine, Shahid Beheshti University of Medical Sciences, Tehran, Iran
\(\textsuperscript{c}\) Department of Radiology, Shohada-e-Tajrish Hospital, Shahid Beheshti University of Medical Sciences, Tehran, Iran
\(\textsuperscript{d}\) Department of Urology, Shahid Rajaee Hospital, Isfahan University of Medical Sciences, Isfahan, Iran

**A R T I C L E   I N F O**

Article history:
Received 14 May 2022
Revised 25 May 2022
Accepted 28 May 2022

Keywords:
Veins
Aneurysm
Hemangioma
Palmar mass

**A B S T R A C T**

In this report, we describe a case of concomitant basilic vein aneurysm and palmar hemangioma with peri- and inter-tendinous growth around the fourth and fifth flexor digitorum superficialis and flexor digitorum profundus tendons.

It seems reasonable for physicians and radiologists to keep in mind the possibility of venous aneurysms in the presence of soft tissue hemangiomas; as they can present as palpable mass and be mistaken for other pathologies. Familiarity with clinical and imaging findings of this entity could be helpful to prevent misdiagnosis.

© 2022 The Authors. Published by Elsevier Inc. on behalf of University of Washington. This is an open access article under the CC BY license (http://creativecommons.org/licenses/by/4.0/)

**Introduction**

Venous aneurysm (VA) - defined as focal saccular or fusiform dilatation of a vein- is an uncommon clinical entity; and is classified based on etiology as primary or secondary. Secondary venous aneurysms are caused by trauma, infection, venous valve insufficiency or in association with hemodialysis fistulas. Primary venous aneurysms are attributed to a congenital defect in walls of a vein. This type of venous aneurysms are very rare; especially in superficial veins, and can be a source of diagnostic challenge [1].

Basilic vein aneurysm has been reported in very few cases [1–5] and its co-occurrence with deep hemangiomas has been reported only in one case [6]. In this report, we present a case with co-occurrence of palmar intramuscular hemangioma...
and basilic vein aneurysm in distal forearm; with emphasis on preoperative diagnostic workup and imaging findings.

Case presentation

A 35-year-old woman presented to general surgery clinic with complaint of slowly-growing mass on her distal forearm, which has grown over the previous year. She also had noticed a painless, stable-size palpable mass on the palm of her hand since over four years ago. Patient had no history of trauma or any cannulation at any time.

On physical examination, a tubular mass-like structure was visible in the medial aspect of distal forearm. There was also a palpable, soft, fluctuant and nontender mass in the hypothenar region at the site of lump palpation. The masses were not pulsatile or tender.

On grayscale and color Doppler ultrasonographic examination, an aneurysmally dilated basilic vein was noted in the medial aspect of the distal forearm; with a 22 mm diameter and slow turbulent flow (Fig. 1). There was also an echogenic mass with scattered calcified foci in the hypothenar region at the site of lump palpation. Scattered areas of minimal blood flow within the mass were seen on color Doppler study.

Magnetic resonance imaging (MRI) study revealed a well-circumscribed mass with low signal intensity on T1-weighted images and high signal intensity on fluid-sensitive sequences in the hypothenar region with peri- and inter-tendinous growth around the fourth and fifth flexor digitorum superfi-
Discussion

Superficial VA is a rare and unsurveyed entity. Very limited number of cases with basilic vein aneurysms has been reported in the literature [1–5]. Furthermore, there is only one reported case of concomitant occurrence of basilic vein aneurysm and deep upper extremity hemangioma [6]. Hence, our case is the second report of superficial venous aneurysms in association with deep hemangioma.

Among the wide range of differential diagnosis for a soft tissue mass in the upper extremity, masses of vascular origin are usually overlooked by clinicians. This may lead to inappropriate biopsies and subsequent complications. Our clinical observation emphasizes the need for through imaging evaluation before performing any aggressive procedure over a palpable upper extremity soft tissue mass. Doppler ultrasonography is an inexpensive and accessible method used for initial evaluation of any mass with suspected vascular etiology. In cases of diagnostic challenge, computed tomography (CT scans) and MRI can also be used. MRI and MR venography have been introduced as the preferred imaging modalities for evaluation of vascular tumors and lesions of the hand [6] and can reliably propose the correct diagnosis. As for our case, Doppler ultrasonography readily demonstrated the venous nature of the palpable distal forearm mass, and the possible diagnosis of hemangioma for palmar lesion led to performing MRI to better characterize the size and extension of the lesion.

Conclusion

This clinical observation highlights the fact that vascular lesions should be considered in the differential diagnosis of any asymptomatic extremity lesion, and thorough imaging evaluation is needed before any aggressive procedure. Also, the co-occurrence of venous aneurysm and vascular tumors (especially hemangiomas) should be kept in mind; so it seems reasonable to lower the threshold for utilization of Doppler
Fig. 4 – Coronal T1 weighted (A, B) and fat-suppressed T2-weighted (C, D) MR images of the hand and wrist. Soft tissue mass with low signal intensity on T1 weighted images and high signal intensity in T2 weighted images is seen around the flexor tendons (white asterisk). Internal hyposignal areas indicating phleboliths are seen in the palmar region (black asterisk in C and D). Aneurysmal dilatation of the basilic vein is noted (arrow).
ultrasound and MRI in evaluation of lesions with suspected vascular origin.

Informed consent

Written informed consent was obtained from the patient for publication of clinical data and diagnostic images.

Ethics

Informed consent has been obtained from the patient for publication of the case report and accompanying images.

REFERENCES

[1] Seo S-H, Kim M-B, Kwon K-S, Kim C-W, Oh C-K. Primary venous aneurysms of the superficial venous system. Angiology 2008;59(5):593–8.
[2] Bhartiya S, Bhattacharya S, Basu S, Srivastava A, Shukla V. Basilic vein aneurysm mimicking as arterio venous malformation. IAIM 2015;2(5):160–3.
[3] Li TY. Primary venous aneurysm of the basilic vein at the distal forearm. J Diagnost Med Sonograph 2016;32(3):164–7.
[4] Spataro C, Donati M, Basile F. To treat or not to treat basilic vein aneurysms? A clinical dilemma. Phlebology 2016;31(7):514–18.
[5] Maksimovic Z, Milic D, Havelka-Djukovic M, Tatic S. Primary aneurysms of cephalic and basilic veins–a report of two cases. Phlebology 2003;18(2):100–2.
[6] Yaylak F, Ozbek O, Toker S, Algin C, Ozveren O, Erbilen E. Multiple basilic vein aneurysms concomitant with multiple hemangiomas of the upper extremity: a case report. Int J Angiol 2007;16(03):106–8.