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Letter to the Editor

Do not misidentify a venous valve as a venous dissection ☆

We read with interest the case report titled “A rare case of internal jugular dissection following central venous catheterization,” in which the authors performed the right internal jugular venipuncture using the landmark technique [1]. However, the guidewire cannot be inserted into the vein; therefore, ultrasonography was done, revealing dissection of the internal jugular vein. We also performed venous dissection during internal jugular venous catheterization [2]. Following this experience, we have paid attention to venous dissection.

To date, 4 cases of internal jugular vein dissection have been reported. Of these, Marcos-Vidal et al. [3] and our case reports [2] presented images showing a foreign body, a catheter in the dissected cavity [3], or a guidewire at the top of the dissected posterior venous wall tenting [2]. Whereas in the other 2 cases, the images did not present any foreign body [1,4]. In the report by Ueshima et al. [4], the internal jugular vein was observed with a “preprocedural scan” using ultrasound before starting the puncture to confirm that there were no abnormalities. In the short-axis image of the internal jugular vein, it appears to be a venous valve. In the long-axis image of the internal jugular vein, the dissection looked starting cephalad. If the long-axis image was correct, it was conclusively considered a venous dissection. However, if the cephalic and caudal sides of the long-axis image are actually reversed, it can be considered a perfectly normal venous valve. We are very concerned that most of Ueshima's papers have been recently retracted on the grounds of fabrication [5]. In the paper by Bansal et al. [1], no preprocedural scan was performed, and ultrasound observation was initiated due to difficulty in guidewire insertion. However, the short-axis image of the internal jugular vein looks like a venous valve. The venous valve was bicuspid, and

the appearance of a detached internal lumen was thought to be the flagging venous valves due to the blood flow.

Adachi et al. [6] and Ettekal et al. [7] suggested that the venous valves of the internal jugular vein should not be mistaken for dissection. We believe that it is important to regularly check the venous valves [8] to avoid difficulties in guidewire insertion after puncture [9,10], venous valve injury during puncture [11], and subsequent deep vein thrombus formation. The internal jugular vein valve is often located behind the clavicle, and its presence is often unnoticed if the operator does not observe behind the clavicle, even when the puncture is performed under ultrasound guidance. The internal jugular vein valve of a healthy with no medical history is shown in Figure 1. The venous valve is bicuspid, and there is a significant deformation on the posterior valve leaflet. This is because the posterior valve leaflet was flagged by blood flow (Supplementary Material). As shown in this Figure 1 (and Supplementary Material), even normal venous valves may appear as venous dissection depending on the viewing position.

The latest guidelines recommend preprocedural scanning of the target vein before catheterization [12,13]. Whether it is a venous valve or a vein dissection, it is important to carefully observe them prior to the procedure to evaluate the risk and avoid mechanical complications.

Author contribution

JT: design, literature acquisition, discussion, first draft writing; HN: discussion, critical comments; YM: literature acquisition, critical comments; TY: discussion, final approval

☆ Competing Interests: J.T. is a technical adviser of Cardinal Health Japan Co. and has performed an ultrasound-guided technical training course held by the company. The other authors have no conflicts of interest to declare.

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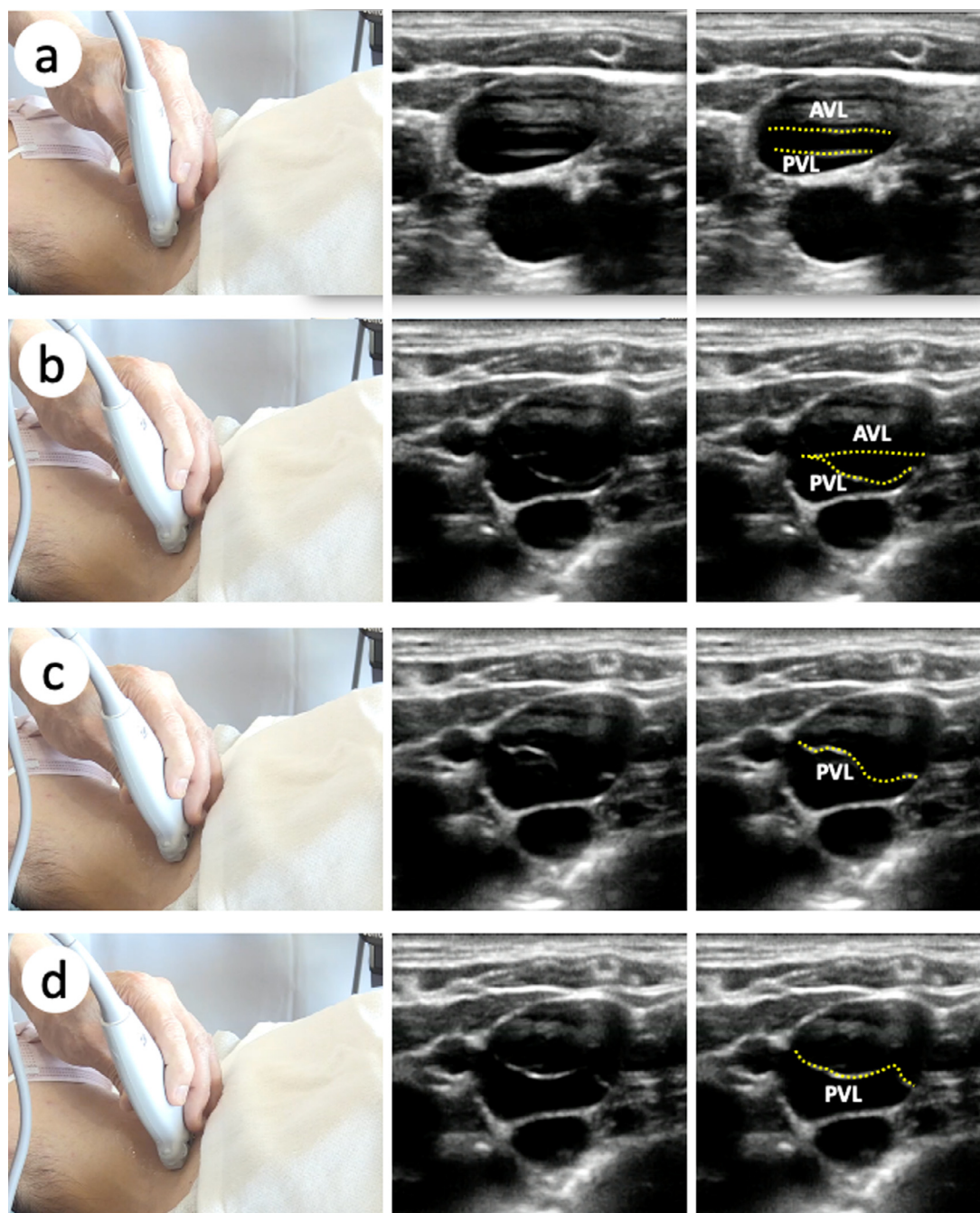


Fig. 1 – Ultrasound image of a normal internal jugular vein valve. The figures on the left show the locations of the ultrasound probes. The center figures are the ultrasound images. The figures on the right show the edges of the venous valves with yellow dashed lines. (a) Short-axis ultrasound view of the internal jugular vein at the midpoint of Sedillot's triangle. (b) Short-axis view at slightly caudal to the midpoint. (c) Short-axis view of the cephalic side of the clavicle. The anterior valve leaflets are indistinct. (d) Short-axis view immediately behind the clavicle. The anterior valve leaflets are indistinct. AVL, anterior valve leaflet; PVL, posterior valve leaflet.

Ethics approval

We confirm that the observations/examinations are carried out in accordance with the ethical standards of our institution.

Availability of data

Not applicable.

Patient consent

Written informed consent for publication of the case in Figure 1 was obtained from the women.

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Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:[10.1016/j.radcr.2023.01.005](https://doi.org/10.1016/j.radcr.2023.01.005).

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