CORRESPONDENCE

A simple maneuver for confirmation of the guidewire during ultrasound-guided internal jugular vein cannulation

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To the Editor,

The use of ultrasound guidance for internal jugular vein cannulation increases the rate of success, reduces procedure time, and reduces the rate of complications.¹ Although the utility of ultrasound has been well established, some problems remain even when ultrasound is used, such as accidental arterial puncture or penetration of the posterior wall of the internal jugular vein.^{1,2} To minimize mechanical injury, the use of a micropuncture technique with a fine needle and guidewire has been proposed.³ It is currently unknown whether the micropuncture technique reduces complications when compared with the larger needle and guidewire method typically used for internal jugular vein cannulation. Nevertheless, in theory, a fine needle and a thin guidewire may minimize mechanical injury and bleeding. The micropuncture technique may be particularly valuable in coagulopathic patients.³ In addition, a conscious patient has little discomfort with a small needle and guidewire.³ We have used a micropuncture Seldinger kit (CV Legaforce® EX, Terumo, Tokyo, Japan) with a 21G needle, 0.015-inch guidewire, and 12G double-lumen catheter.

Another problem with ultrasound-guided internal jugular vein cannulation is that the guidewire is not always visible on the ultrasound image.⁴ Before dilation, it is essential to confirm the guidewire within the venous lumen to avoid severe mechanical injury that may result

from dilation.¹ Nevertheless, a standard relatively large guidewire is sometimes invisible on the ultrasound image,⁴ and a thin guidewire can be even more difficult to visualize. To overcome this problem, we push the neck skin softly with the index finger just caudal to where the wire penetrates the skin after removal of the needle (Fig. 1) (Video, available as Electronic Supplementary Material). This maneuver facilitates confirmation of the guidewire within the venous lumen with the ultrasound image (Fig. 2A, B); (Video, available as Electronic Supplementary Material). With the skin pushed, the wire moves posteriorly away from the vein wall, which enhances the reflected ultrasound. In addition, the angle between the ultrasound beam and the wire becomes perpendicular.

Fig. 1 Digital skin pressure The operator pushes the neck skin softly with the index finger just caudal to where the guidewire (GW) penetrates the skin

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Fig. 2 Ultrasound images during internal jugular vein cannulation A) The thin guidewire (0.015 in) cannot be seen. B) The guidewire (GW, arrow) is clearly seen within the lumen of the internal jugular vein (IJV) with the neck skin pushed. The ultrasound probe was placed at the same position before applying the maneuver. CCA= common carotid artery

We have successfully used this maneuver with both a thin guidewire and a larger one in more than 20 adult patients. In our view, this simple maneuver is valuable for confirmation of the guidewire within the venous lumen, especially when a thin guidewire is used.

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Conflicts of interest None declared.

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