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Radial artery cannulation using the Insyte-A holding the device in cigarette-style

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To the editor: Radial artery cannulation during anesthesia and intensive care is one of the essential methods used for real-time monitoring of blood pressure and analyzing arterial blood [1]. However, arteries are not visible from the skin surface, and carrying out correct and exact puncture is still difficult in the clinical setting. Moreover, the appropriate insertion of a soft catheter requires greater technical skill than making a puncture [1]. One of the most important points for inserting an outer soft cannula is the establishment of an absolute and fixed three-dimensional relationship between the inner needle that penetrates the anterior wall of the artery and the cavity of the small vessel during the procedure. A common cause of failure in the insertion procedure is a loss of the association between artery and the top of needle after the success of puncture is confirmed by the regurgitation of blood through the inner needle.

Recently, a guidewire-assisted radial artery cannulation technique was introduced, and this method is becoming popular [2]. The Insyte-A (BD Medical Japan, Tokyo, Japan) is a newly developed instrument for arterial catheter insertion [3]. The guidewire is integrated in a freely moving plunger and is easily introduced into the lumen of the vessel. Although the device has room for further development [4], it has led to an improved success rate for cannulation.

Usually, a physician would puncture an artery using the nondominant hand for holding the subject while searching for pulsation, and using the dominant hand for grasping the needle in a pen-holding style and penetrating the skin. When the top of the needle reaches the artery, regurgitation of blood is observed, and the physician keeps the dominant hand still and attempts to insert the guidewire with nondominant hand which is holding the subject until immediately before the insertion. This traditional technique is not stable and may disturb the establishment of the relationship between the inner needle and the lumen of the artery.

Therefore, we are now applying the "cigarette-holding method" for artery cannulation, using the Insyte-A. The device is held with the index and middle fingers, just like holding cigarette (Fig. 1). The thumb is prepared for advancing the guidewire freely. When puncture is achieved, the guidewire is introduced into the vessel lumen promptly, without any other

Fig. 1. The picture shows the cigarette-holding style for the Insyte-A (BD Medical Japan), and the puncture procedure. The thumb of the operator's dominant hand is completely free at this moment

Fig. 2. After the successful insertion of the guidewire, the outer cannula is placed into the radial artery, using the nondominant hand

movement, except for the unoccupied thumb of the dominant hand. Then the nondominant hand is released, and with this hand, the outer cannula is inserted into the artery (Fig. 2).

This method has another advantage for cannulation, because the cigarette-style holding of the needle decreases the angle between the needle and the artery. Decreasing the angle is also suggested to be an important advantage for successful catheter insertion using the Insyte-A.

We are not planning a randomized or double-blinded study, because the number of our intensive care unit physicians is limited, and it is difficult to be blinded for the use of devices. However, we believe the "cigarette-holding method", using the Insyte-A, could be a very easy and highly successful technique for radial artery cannulation.

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