

We confirmed the wire tips at all cases by ultrasonography. The distance using TEE was similar to that by fluoroscopy, but TEE was more precise” Yoshimura et al (2016).

Abstract:

STUDY OBJECTIVE: Several authors have reported rare, but severe, complications associated with the length of the intravascular guidewire during central venous catheter placement, as the wire tip can cause cardiac arrhythmia or perforation or become trapped within the vessel.

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Although one report investigated the optimal guidewire length using fluoroscopy, few reports have precisely measured guidewire position using transesophageal echocardiography (TEE). Here, we investigated the appropriate intravascular length of a guidewire for right internal jugular vein approach using TEE during cardiac surgery.

DESIGN: A prospective observational study.

SETTING: Operating room.

PATIENTS: Fifty-two patients undergoing elective cardiac surgery.

MEASUREMENTS: The intravascular guidewire distance from the insertion site to the superior vena cava-right atrium (SVC-RA) junction was measured by TEE. Demographic factors (height, weight, age, etc) were recorded.

RESULTS: The mean distance from the access site to the SVC-RA junction was 17.8 ± 1.3 cm (maximum/minimum = 20.0/15.0 cm). There was a greater correlation with height than with weight or age.

CONCLUSION: We confirmed the wire tips at all cases by ultrasonography. The distance

using TEE was similar to that by fluoroscopy, but TEE was more precise. Guidewire length was weakly correlated to height. About 15 cm as minimum length should be considered the limit for guidewire length in an adult, in consideration of height, to ensure patient safety during central catheter placement for right internal jugular vein approach.

Reference:

Yoshimura, M., Nakanishi, T., Sakamoto, S. and Toriumi, T. (2016) Confirmation of optimal guidewire length for central venous catheter placement using transesophageal echocardiography. *Journal of Clinical Anesthesia*. 35, p.58-61.

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