

## **During central venous catheterization through the right internal jugular vein, inserting guywires to depths of 15 or 17.5 cm before tissue dilation reduced the incidence of arrhythmic episodes compared to a depth of 20 cm” Lee et al (2017).**

### Abstract:

Objective: Guidewire-induced arrhythmias that occur during central venous catheterization can progress to malignant arrhythmias in rare cases. This study compared the incidence of arrhythmia during central venous catheterization using three different depths of guidewire insertion into the right internal jugular vein.

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Methods: Sixty-nine patients undergoing elective surgery requiring central venous catheterization through the right internal jugular vein were enrolled in this double-blind, prospective, randomized, and controlled study. Patients were randomly allocated to receive guidewire insertions to 15 cm, 17.5 cm, or 20 cm before tissue dilation. Arrhythmic episodes were then monitored during dilation of the soft tissue.

Results: A total of 29 patients (42%) experienced arrhythmic episodes during tissue dilation. The guidewire-induced arrhythmia rates of the 15 cm group, 17.5 cm group, and 20 cm group were 0.26 (95% confidence interval = 0.10, 0.48), 0.35 (95% CI = 0.16, 0.57), and 0.65 (95% CI = 0.43, 0.84), respectively. The incidence of arrhythmic episodes was higher in the 20 cm group than in the 15 cm (odds ratio = 5.31; 95% CI = 1.50, 18.84) and 17.5 cm (OR = 3.52; 95% CI = 1.05, 11.83) groups. There was no significant difference in arrhythmia rates between the 15 cm group and 17.5 cm group ( $p = 0.542$ ).

Conclusions: During central venous catheterization through the right internal jugular vein, inserting guywires to depths of 15 or 17.5 cm before tissue dilation reduced the incidence of arrhythmic episodes compared to a depth of 20 cm.

### Reference:

Lee, J-M., Lee, J., Hwang, J-J., Chang, J-E., Kim, H., Oh, S., Oh, E-A. and Min, S-W. (2017)



Randomized comparison of three guidewire insertion depths on incidence of arrhythmia during central venous catheterization. The American Journal of Emergency Medicine. January 14th. .

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