



A modified intracavitary electrocardiographic technique can be safely used for detecting the location of the tip of central venous catheters in atrial fibrillation patients: the highest activity of the f waves is an accurate indicator of the location of the tip at the cavo-atrial junction” Calabrese et al (2018).

Abstract:

INTRODUCTION: The intracavitary electrocardiographic method is recommended for assessing the location of the tip of central venous catheter when there is an identifiable P wave. Previous reports suggested that intracavitary electrocardiographic method might also be applied to patients with atrial fibrillation, considering the so-called f waves as a surrogate of the P wave.

METHODS: We studied 18 atrial fibrillation patients requiring simultaneously a central venous catheter and a trans-esophageal echocardiography. An intracavitary electrocardiographic trace was recorded with the catheter tip in three different positions defined by trans-esophageal echocardiography imaging: in the superior vena cava, 2 cm above the cavo-atrial junction; at the cavo-atrial junction; and in the right atrium, 2 cm below the cavo-atrial junction. Three different criteria of measurement of the f wave pattern in the TQ tract were used: the mean height of f waves (method A); the height of the highest f wave (method B); the difference between the highest positive peak and the lowest negative peak (method C).

RESULTS: There were no complications. With the tip placed at the cavo-atrial junction, the mean value of the f waves was significantly higher than in the other two positions. All three methods were effective in discriminating the tip position at the cavo-atrial junction, though method B proved to be the most accurate.

CONCLUSION: A modified intracavitary electrocardiographic technique can be safely used for detecting the location of the tip of central venous catheters in atrial fibrillation patients: the highest activity of the f waves is an accurate indicator of the location of the tip at the cavo-atrial junction.

You may also be interested in...

ECG method for confirming central venous catheter tip placement

Intracavitary ECG guidance for peripherally inserted central catheter placement

ECG PICC tip location accuracy and safety reviewed

Reference:

Calabrese, M., Montini, L., Arlotta, G., La Greca, A., Biasucci, D.G., Bevilacqua, F., Antonucci, E., Scapigliati, A., Cavaliere, F. and Pittiruti, M. (2018) A modified intracavitary electrocardiographic method for detecting the location of the tip of central venous catheters in atrial fibrillation patients. *The Journal of Vascular Access*. December 31st. .

doi: 10.1177/1129729818819422.

