The objective of this study was to evaluate the use of vertebral body unit (VBUs), to locate the cavoatrial junction (CAJ), for optimal CVC tip placement based on chest radiography (CXR) using the carina as a landmark” Song et al (2015).

Reference:


Abstract:

BACKGROUND: Central venous catheter (CVC) placement plays an important role in clinical practice; however, optimal positioning of the CVC tip remains a controversial issue. The objective of this study was to evaluate the use of vertebral body unit (VBUs), to locate the cavoatrial junction (CAJ), for optimal CVC tip placement based on chest radiography (CXR) using the carina as a landmark.

METHODS: 524 patients who underwent coronary computed tomographic angiography (CTA) and CXR were included. The position of the CAJ was identified using VBUs, and the efficacy of VBUs for locating the CAJ with the carina as a landmark was analysed using multiple regression analysis. A VBU was defined as the distance between two adjacent vertebral bodies, including the inter-vertebral disk space.

RESULTS: The mean (sd) distance from the carina to the superior CAJ was 54.3 (9.7) mm on CTA; the mean distance in VBUs at the level of the carina was 21.4 (1.7) mm on CTA and 22.6 (2.1) mm on CXR. The mean CAJ position was 2.5 VBUs below the carina on CTA and 2.4 VBUs below on CXR with 95% limits of agreement between -0.6 and +0.3.

CONCLUSIONS: The position of the CVC tip in relation to the carina can be described using the thoracic spine as an internal ruler, and the position of the CAJ in adults was reliably
estimated to be 2.4 VBUs below the carina.

CLINICAL TRIAL REGISTRATION: KCT0001319.

Thank you to our partners for supporting IVTEAM