

The value of ultrasound usage is undisputable since all studies assessing the difference between it and landmark based methods showed preferable outcome. Reduction of time and number of attempts is sufficient argument to make ultrasound guidance standard practice” Hoffman et al (2016).

Abstract:

Central venous catheterization is a commonly used and important intervention. Despite its regular use it is still associated with a high incidence of complications especially infection and catheter tip embolization. Addition of ultrasound guidance to the technique has shown great improvement to the time and number of attempts for successful catheterization. The preference of vein depends greatly on the situation; subclavian vein is the preferred method overall but internal jugular vein is preferred in patients undergoing cardiac or thoracic surgery.

This is especially true for pediatric patients in whom femoral vein catheterization is still preferred despite it carrying a higher risk than other locales. Addition of ultrasound guidance greatly reduces the incidence of arterial puncture and subsequent hematoma formation regardless of location. This is because it allows for visualization of anatomical variation prior to intervention and continual visualization of the needle during the placement. It is noteworthy however, that addition of ultrasound does not prevent complications such as catheter tip embolization as this may occur even with perfect placement. The value of ultrasound usage is undisputable since all studies assessing the difference between it and landmark based methods showed preferable outcome. Reduction of time and number of attempts is sufficient argument to make ultrasound guidance standard practice.

Reference:

Hoffman, T., du Plessis, M., Prekupec, M.P., Gielecki, J., Zurada, A., Tubbs, R.S. and Loukas, M. (2016) Ultrasound-guided central venous catheterization: A review of the relevant anatomy, technique, complications and anatomical variations. *Clinical Anatomy*. August 13th. .



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