

Rozdział 8. Streszczenie w języku angielskim

Summary

Ultrasonography is a relatively easily accessible, cheap and safe imaging modality, which can be used by the patient's bed. It provides fast and reliable assessment of the anatomy and cross-sectional area of cannulated vessels. Ultrasonographic examination may be performed prior to central venous catheterization in order to visualize the anatomic relationship in the area of catheterized vessels, as well as their size.

One of the most commonly chosen venous access sites are the internal jugular vein and the femoral vein. Both vessels lie fairly superficially and can be easily visualized with ultrasound.

The cross-sectional area (CSA) of internal jugular veins varies widely and differs on both sides of the neck by up to 850 %. Most commonly the internal jugular vein on the right side is greater than the left side. However, "small" veins (with CSA less than 0.4 cm^2) occur in 14.6 % of healthy subjects on either side, and in they occur 4.9 % bilaterally.

The cross-sectional area of the femoral veins decreases with the increase of the distance from the inguinal ligament and depends on gender. The CSA of the femoral vein at the level more proximal to the inguinal ligament is greater in women, while at the level more distal from the inguinal ligament is greater in men. The cross-sectional area of the femoral veins can be temporarily increased in a simple manner by changing the position of the lower limb and is the largest in "frog-leg" position (abduction + external rotation + 90° knee flexion). In 25 % of the studied population at the level of 2 cm distal to the inguinal ligament the CSA was below 0.45 cm^2 , while at the level of 2 cm distal to the inguinal crease – below 0.32 cm^2 .

Puncturing vessels which have a small diameter is related to higher complication rate, therefore ultrasound examination before catheterization could potentially allow for choosing the optimal venous access site. However, assessing the impact of using ultrasound imaging before central venous catheterization on decreasing the ratio of failures and complications require further investigation.

