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Scientific Abstract

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Difference Between Doppler Ultrasonography And Computer Tomographic Angiography Of Aorta In The Measurement Of Aneurysm Diameter And The Detection Of Endoleak In Cases Of Post Endovascular Aneurysm Repair Surveillance

Kullanan Langkorn

Songklanagarind hospital, Thailand

Objective: This study evaluate the accuracy of Doppler ultrasound (DU) compared with CTA aorta in measurement aneurysm diameter and detection of endoleak.

Materials and methods: The additional DU was performed by two radiologists in 100 post EVAR patients who underwent surveillance CTA aorta in the study period. The maximal AP and transverse diameter in axial view, maximal sagittal diameter of aneurysm and endoleak detection were corrected from DU. These results were evaluate the correlation, mean different diameter of aneurysm and sensitivity, specificity, PPV, NPV of endoleak with level of agreement using CTA as the gold standard.

Results: DU showed excellent correlation of measurement aneurysm diameter compared with CTA aorta in maximal AP, transverse and sagittal diameter with $r=0.98-0.99$. But only the transverse diameter showed no significant difference between DU and CTA (P-value 0.08), which was 0.1 cm larger than actual size from CTA. There was no significant difference of the intra-observer agreement for aneurysm diameter measurement. The inter-observer agreement was excellent (ICC 0.9-0.97) The results of endoleak detection showed 69.2% sensitivity, 95% specificity, 90% PPV and 82.8% NPV with good agreement. (Kappa 0.79)

Conclusions: The DU is accurate and better cost effective modality for post EVAR surveillance cases.