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CT venography of upper limb: A new way for establishing vein mapping for creating arteriovenous fistula for hemodialysis

Patients with chronic renal failure at the stage of dialysis require access to a blood through arteriovenous fistula (AVF) at the upper limb. Venous mapping is then performed in the operating results of these AVF. Veinography is considered for a long time as the technical reference. The CT veinography of upper limb constitutes a new technique reserved for this purpose. The aim of this study was to evaluate the performance CT veinography versus veinography in the establishment of venous mapping of the upper limbs before creating AVF for hemodialysis. Prospective study was conducted over a period of thirty months until December 2015 in the Department of Radiology of the Military Hospital of Tunis. The study included 57 patients with chronic renal failure at the stage of dialysis explored by upper limbs veinography and CT veinography. Both techniques were first compared for their quality. Thereafter, we compared their sensibilities and specificities in detecting various venous segments of upper limbs and in studying venous feature. The two techniques were comparable for the detection of superficial venous system of the upper limbs (p= 0.240) and for their quality (p=0.065), which was excellent in 66.6% of CT veinography. There was a statistically significant difference between the sensitivities of the two techniques in detecting distal (p<10-3) and proximal deep venous system (p=0.010), in studying reports and in highlighting certain anatomical variants (p=0.001). The CT veinography was less irradiating with a reduction in the contrast medium injected dose by 83% compared to veinography. The upper limbs CT venography is a noninvasive technique which can be easily performed and interpreted. It is a reliable and reproducible imaging technique with high sensitivity and specificity offering a complete upper limb venous mapping before creating an AVF for hemodialysis.

Biography

Kouki S completed his PhD from Medicine Faculty of Monastir, Tunisia. He is an Associate Professor of Radiology at University School of Medicine of Tunis, Tunisia. He also works in Radiology department of the Military Hospital of Tunis where he has conducted research in vascular imaging in cooperation with vascular surgeons, resuscitator about the contribution of multidetector CT in the dysfunction of hemodialysis arteriovenous fistulas. He is directing research on network venous upper limb. He has published more than 15 papers.

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