Fusion Imaging of Contrast-enhanced Ultrasound With CT or MRI for Kidney Lesions.

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To evaluate the feasibility of ultrasound (US) computed tomography (CT) or magnetic resonance imaging (MRI) fusion imaging (FI) for localization and assessment of kidney lesions.

Twenty-eight patients with kidney lesions previously detected on CT or MRI were included in this retrospective study. All 28 patients with kidney lesions, which were indefinable (42.9 %) or hard to localize (57.1 %) on gray-scale US alone, underwent FI of US with CT/MRI datasets. In 23 (82 %) patients with indeterminate kidney lesions, FI including contrast-enhanced US was conducted.

FI was successfully performed in 25 out of 28 (89.3 %) patients. FI with contrast-enhanced US was able to clarify the previously detected kidney lesions in 21 out of 23 patients (91.3 %).

FI is a feasible technique for localizing kidney lesions that are hard to define by grayscale US alone and the additional application of contrast-enhanced US is useful in clarifying indeterminate CT or MRI findings.

Ultrasoundography for the Diagnosis of Carpal Tunnel Syndrome in Diabetic Patients: Missing the Mark?

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Diabetes mellitus (DM) and carpal tunnel syndrome (CTS) are common pathologies. The diagnosis of CTS can be facilitated by the use of an ultrasound-based wrist-to-forearm ratio (WFR) of the nerve diameter. However, the applicability of WFR in DM-patients is not yet clear.

233 wrists of 153 patients were examined. Cross-sectional areas (CSA) of the median nerve were obtained using a linear array probe. The WFR was calculated.

Diabetics with CTS had significantly lower WFR values than non-diabetics with CTS (p = 0.002). There was no difference between the WFR of diabetics with and without CTS (p = 0.06). The diagnostic accuracy between diabetics with and without CTS was low for measurements of WFR (ROC AUC = 0.630, 95 % CI 0.541 – 0.715, p = 0.011).

Our findings suggest that the WFR has a low diagnostic accuracy in diabetic patients with CTS and should be used with caution in those patients.

The diagnostic accuracy of WFR is low in patients with DM. WFR should not be used in patients with DM. The sonographic evaluation of the median nerve in patients with DM should focus on morphological changes.

Compliance assessment and flip-angle measurement of the median nerve: sonographic tools for carpal tunnel syndrome assessment?

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To assess the diagnostic performance of median nerve (MN) flip-angle measurements, deformation during wrist flexion (transit deformation coefficient (TDC)), during compression [compression defor-
Fascicular mobility, TDC and CDC show substantial diagnostic power and may offer insights into the underlying pathophysiology of CTS.