contrast-enhanced color Doppler imaging (CDI) and MRI were able to detect crossing vessels in the same numbers of patients (both accuracy 100%), whereas CT missed four posterior crossing veins.

This paper is of utmost importance because it compares the three imaging modalities in the same patients. However, one of the questions not answered is whether we really need contrast. In recent years, due to technical improvements in ultrasound equipment, the sensitivity of Doppler techniques without the use of contrast has increased. In 2003, Mearini et al [4] described the use of Doppler imaging for the detection of crossing vessels, and they found a 90.4% accuracy. It would have been interesting if the use of noncontrast Doppler imaging had been included in this study.

The major impact of this paper is that the authors now recommend CDI as the first-line imaging modality. However, the results as presented are based on investigations in one center only. Furthermore, only one (very) experienced investigator did all the CDI investigations. Therefore, in our opinion, it is not obvious that other centers with other (less experienced) investigators will achieve the same results. We believe that additional multicenter research with multiple investigators is mandatory to confirm the conclusions of the present paper.

References


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Editorial Comment on: Comparison of Contrast-Enhanced Color Doppler Imaging (CDI), Computerized Tomography (CT), and Magnetic Resonance Imaging (MRI) for the Detection of Crossing Vessels in Patients with Ureteropelvic Junction Obstruction (UPJO)

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In the study of Mitterberger et al [1] for the first time in the literature contrast-enhanced color Doppler imaging (CDI), computed tomography (CT), and magnetic resonance imaging (MRI) are compared for the detection of crossing vessels as an extrinsic cause in patients with ureteropelvic junction obstruction (UPJO). The emphasis of this manuscript clearly lies on the comparison of the different imaging modalities. The authors concluded that both contrast-enhanced CDI and MRI have 100% accuracy in the detection of crossing vessels in contrast to CT, which reaches 93% accuracy. Therefore, Mitterberger et al recommend contrast-enhanced CDI as first-line imaging modality in patients with UPJO.

Although in our opinion this manuscript focuses more on the imaging aspects of UPJO than on clinical relevance of the surgical treatment, we would like stress two interesting aspects.

First, noteworthy is the fact that Mitterberger et al report on a prevalence of crossing vessels as high as 92%, whereas former studies yielded a prevalence between 29% and 87%. This information and the fact that the vessels are located predominantly anteriorly is of clinical relevance because it actually influences the surgical approach in terms of intraoperative alertness but without having an impact on decision-making for surgery. Second, ultrasound as classical equipment for most urologists and especially its further development to contrast-enhanced CDI, which may generate detailed and precise images with quality comparable to those generated by MRI, makes contrast-enhanced CDI an attractive, valuable, low-budget tool in urology. Furthermore, the urology community should focus on this recently upcoming imaging modality not only to diagnose crossing vessels, kidney lesions, and prostate cancer but also
to provide a tumor target therapy with antitumor agent-labeled microbubbles in the future [2,3].

References


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