

Emerging Anatomic, Diffusion, and Perfusion Techniques in Pediatric Body Imaging

Shreyas S. Vasanawala, MD/PhD. Stanford University

Pediatric abdominal MR imaging is one of the most challenging areas in the clinical practice of radiology (1-3). These challenges arise from patient motion as well as unique aspects of child physiology. Additionally, patient size varies over two orders of magnitude, with resulting difficulties in establishing protocols. Many of these issues are addressed with anesthesia, exchanging risks of ionizing radiation from computed tomography with those of general anesthetic.

This session will provide insight into the above challenges (research opportunities) and review current promising approaches to solutions. These include hardware (4) and practical design aspects of the coils for children. Recent approaches to data acquisition to address motion (5-12) and speed will be discussed, as well as methods of image reconstruction (13-18).

Finally, the potential of these methods to extend anatomic imaging to tissue characterization with diffusion and functional imaging with perfusion will be discussed (8, 14, 19-22).

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