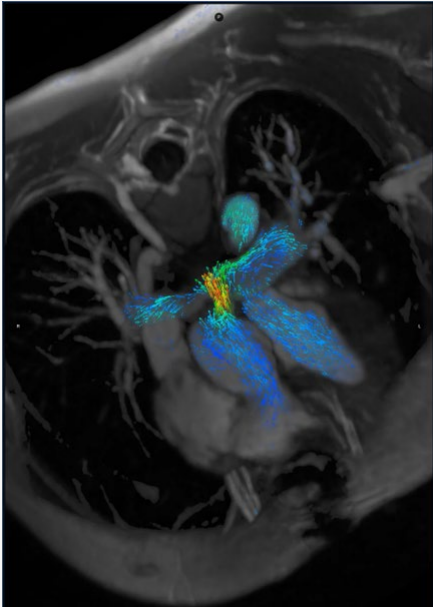


Case Study – Designed for Kids

Detailed pulmonary artery blood flow



Challenge



For pediatric patients with issues such as abnormal blood vessel routing, current MRI cardiac coils are unable to image with enough quality for diagnosis. Radiologists can try using adult neck and knee coils on the pediatric heart area, but success rate is low. MRI might be skipped entirely and invasive procedures such as catheterization is employed. This adds additional cost for the patient (\$3500), risk of complication from an invasive procedure, and hours under anesthesia for the patient

Solution



The light weight printed technology allows patients to breathe easier allowing the scan to be completed successfully since the patient is moving less. More comfortable patients also tolerate MRI for longer, allowing radiologists to acquire all the images they need for diagnosis. The flexibility of the coil allows it to contour the body for either faster or better imaging, per radiologists.

The Pediatric Body Array coil elements have been sized for children's anatomy. Furthermore, the arrangement of coil elements allows increased acceleration, also decreasing scan time

Result



For a 3 yr old patient with abnormal blood vessels, detailed flow through a surgically created narrowing of the pulmonary artery. Despite small size of child and high heart rate, no detail is lost. Typically, this child would get both an ultrasound (echocardiography) to visualize and quantify the narrowing, and then an MRI to see larger structures in the heart. This would be followed by catheterization to measure the flow. With the detail captured by this coil, all diagnostic data can be obtained by MRI.