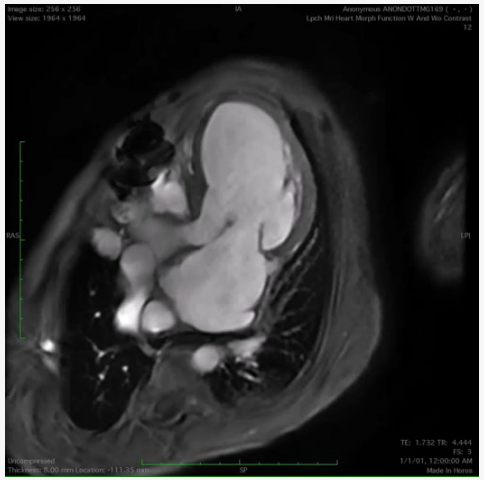
Case Study – Higher Resolution

High spatial resolution on heart valves



Challenge

For pediatric patients, small moving structures like heart valves are very difficult to image. Not only are they tiny in size, but children have high resting heart rates which means these valves are opening and closing rapidly. MRI is the gold standard to determine valve function and determine if a valve is leaking by seeing the leaking flow. But to determine the exact issue with the valve and how to fix it, children typically need another test such as ultrasound or CT.

Solution

The InkSpace Imaging coil has smaller elements specifically designed for the pediatric population.

The small element size and light weight allows the maximum number of coil elements to be placed as close to the heart as possible. This improves the spatial resolution of the scan, allowing radiologists to see smaller structures than typically possible.

Result

Resolution, 0.7mm

This video shows the very high spatial resolution that the coil enables. With this technology we can see that the leaflets don’t come together with perfect symmetry (arrow) and in fact have a small opening between them. MRI can now not only quantify the leaking valve, but also tell the surgeon exactly what needs to be fixed.

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