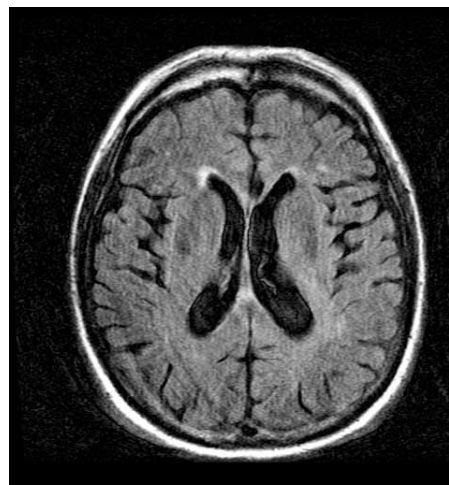


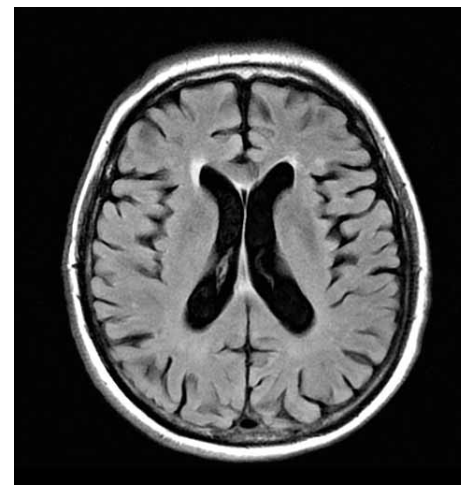
Signa HD with PROPELLER HD Provides Efficiency and Image Quality Enhancements

Harris Methodist Fort Worth (HMFW) Hospital is the flagship facility of Harris Methodist Hospitals. For more than 70 years, the hospital has provided sophisticated medical services to the Tarrant County community, delivered with compassion and commitment. Radiology is an important tool that physicians on the medical staff utilize in diagnosing and developing many treatment options for their patients.

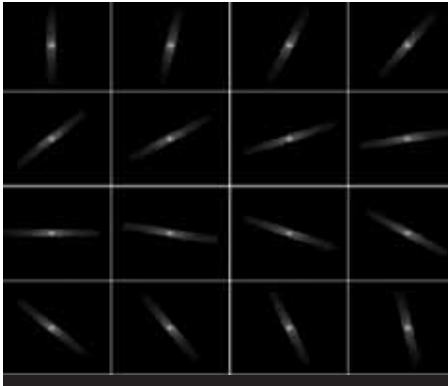
“We recently upgraded our GE Signa® 1.5T to the Signa HD system level, including PROPELLER™ HD software,” said Kevin Spears, Outpatient Imaging and MRI Services Manager at Harris Methodist Fort Worth (HMFW) Hospital in Fort Worth, Texas. “Improvements in time and image quality were immediately noticed on scans utilizing the PROPELLER HD option.”



T2 FLAIR image showing typical results when a patient moves their head during the scan.



T2 FLAIR PROPELLER HD acquired on the same patient. The images are routinely free of motion artifact and blurring, and demonstrate exquisite soft tissue contrast and high signal-to-noise ratio.



“As far as the improvements in time go, PROPELLER HD makes the biggest difference for the patients that tend to move around quite a bit during their exam,” Spears explained. “I would say we have seen a decrease of five to 10 minutes per case due to the abilities of PROPELLER HD to acquire diagnostic T2 and FLAIR images, even with patient motion. I think the biggest impact it has had at HMFH is that we have not had to cancel exams on our ICU patients like we did before using PROPELLER HD. Before PROPELLER HD, we were canceling or rescheduling 20 to 30 percent of our ICU patient’s MRIs. Since we incorporated PROPELLER HD into our protocols, we have seen that number drop to near zero.

The improvements in image quality that PROPELLER HD provides result in better quality on our T2 and FLAIR sequences while allowing us to obtain two additional exams a day that would have been cancelled or rescanned due to non-diagnostic sequences,” Spears added.

About PROPELLER HD

PROPELLER HD imaging uses a novel approach to measure spatial frequencies. After each excitation (each shot), PROPELLER HD measures spatial frequencies along a strip or blade, which goes through the central region of k-space. This is usually done by using all the echoes from a single central shot of a multishot fast spin echo (FSE) readout. For each subsequent shot, the blade is rotated until all the necessary spatial frequencies that form a complete image are measured. The data from each blade (each TR) can be used to form an image, which contains all of the low frequency information inside of that circle plus limited high frequency information.

The data from these blades can be combined in k-space to form a complete image. This resampling of the low spatial frequencies in every shot is a key element of PROPELLER HD. Since the image formed from these data should look identical, one can look for inconsistencies from shot to shot, and correct the data accordingly.

Reconstructions can be developed to correct for in-plane motion (translation and rotation), phase inconsistencies (such as those introduced with diffusion lobes) and reject uncorrelated data (such as bulk through-plane motion). ■



Kevin Spears

Kevin Spears is the Outpatient Imaging and MRI Services Manager for Harris Methodist Hospital of Fort Worth. He oversees the day-to-day operations of the Outpatient Radiology department, which includes the modalities of Computed Tomography (CT), Magnetic Resonance Imaging (MRI), Ultrasound (US) and Diagnostic Radiology. He holds certification through the American Registry of Radiologic Technologist (ARRT) as a Radiographer as well as advanced certifications in Computed Tomography and Magnetic Resonance Imaging. Kevin is also licensed as a Certified Medical Radiologic Technologist (CMRT) through the Texas Department of State Health Services.

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