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DMI sees jump in image quality with Achieva XR

Busy imaging practice is ready to ramp up from 1.5T to 3.0T at short notice



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PHILIPS

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John F. Feller, MD

Desert Medical Imaging (DMI, Indian Wells, California, USA) installed its Achieva XR rampable MR system just over a year ago. With more than 20 MRI patients a day, DMI's Achieva XR performs a mix of scans that includes neuro, musculoskeletal, breast and cardiovascular at 1.5T.

John F. Feller, MD, Medical Director and founder of Desert Medical Imaging, says DMI chose the Achieva XR for several reasons, including its flexibility. "We can respond quickly if a competing center puts in a 3.0T system. It's a state-of-the-art 1.5T system that we can convert to a 3.0T system in four or five workdays without major renovations. The only thing that needs to happen is the spectrometer and the coils need to be swapped out," says Dr. Feller.

He adds that DMI can also ramp up the system to 3.0T when they reach 30 or 35 patients a day and want to improve throughput. "We can go from 30-minute slots to 20-minute slots, and continue to grow the practice. It's the only product in the industry with that flexibility."

DMI researched the cost effectiveness of buying a 1.5T system and replacing it with a 3.0T later, versus buying a rampable 1.5T system. "The Achieva XR is much more cost effective if you're planning on a 3.0T system down the road," says Dr. Feller. The Achieva XR also offers high residual value, with 3.0T X-series components such as the magnet and gradients.

Breast studies benefit from high quality images

When adding to DMI's Panorama HFO scanner, the most important factor was improving image quality. "Image quality is very good on the Achieva XR," says Dr. Feller. "We wanted a system with a direct digital spectrometer and at least 16 channels, so we could accommodate the full complement of coils we have. In terms of our SNR calculations, it's our opinion that we got about a 25% improvement in image quality with the Achieva XR."

Breast studies, in particular, are benefiting from the addition of the Achieva XR. "We have a multidisciplinary breast conference every month, in which we get surgical and pathologic follow-up on all of our cases. The correlation between the surgical and pathologic findings presented at the conference has been very good," says Dr. Feller.

DMI is currently performing breast biopsies on the Panorama High Field Open (HFO), using DynaCAD for post processing and DynaLOC for intervention. Their ultimate goal is to add the new Elite Breast solution to the Achieva XR for improved workflow and image quality to take the breast MR program to the next level. Elite Breast incorporates the MammoTrak dockable patient support system, DynaCAD Enterprise, and integrated breast coils for a complete breast solution.

SmartExam adds efficiency, reproducibility to common scans

DMI uses SmartExam for knee, shoulder, spine, and brain exams. "SmartExam is a huge improvement in operational efficiency," says Dr. Feller. "In the case of a shoulder, for example, it decreases the number of steps for our techs from 42 to two. And we've found that our less experienced techs get up to speed more quickly on our most common exams."

After an analysis using Philips Utilization software, Dr. Feller discovered that the total time spent on these exams had decreased significantly. "SmartExam frees the techs to concentrate on things that need their expertise, instead of spending their valuable time clicking a mouse."

"Achieva XR brought us an immediate improvement in image quality"

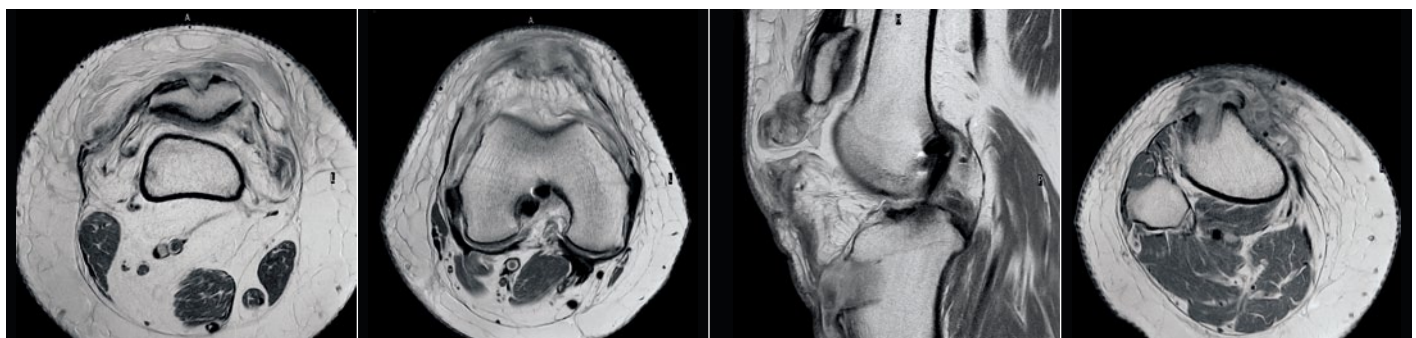
The reproducibility of the exams at DMI has improved, even for experienced technologists. “You want to compare apples to apples, not different slice orientation or slices that aren’t at the same location,” explains Dr. Feller. “With SmartExam, the follow-up exams end up being almost exactly the same in terms of positioning and alignment, so that the comparative measurements in the follow-up studies are more accurate.”

“The Achieva XR brought us an immediate improvement in image quality, which has been very consistent ever since,” Dr. Feller says. “It has been a very stable system, and we’ve had very little down time. I’m a happy customer.”



“It’s a state-of-the-art 1.5T system that we can convert to a 3.0T system in four or five workdays.”

Left index finger glomus tumor			
<p>A 36-year-old female with left index finger pain beneath index finger nail bed. There is a 0.4 x 0.7 cm well-circumscribed homogeneously enhancing soft tissue mass interposed between the nail and the distal phalanx of the left index finger highly suggestive of a glomus tumor. There is some associated mild pressure erosion involving the dorsal cortex of the distal phalanx. Achieva XR, 47 mm Microscopy coil. Patient in left lateral decubitus position with left arm flexed about head and hand extended in supine position supra cephalically. FOV was relatively small, averaging 8 x 4 cm. Voxel size averaged at 0.3 x 0.3 mm.</p>	T1-weighted	B-FFE	B-FFE
	T2-weighted	Post contrast	Post contrast



Right knee patellar tendon rupture	
<p>A 61-year-old female with right knee anterior pain 5-6 weeks post intraarticular anterior ACL reconstruction surgery utilizing a patella bone-tendon-bone graft. Apart from postoperative changes, the images demonstrate a full thickness tear of the patellar tendon proximally 2 cm distal to the level of the inferior pole of the patella. The torn ends of the patella tendon are retracted 1 cm resulting in patella alta. A moderate sized joint effusion extends through a capsular defect into the subcutaneous fat anteriorly at the level of the patellar tendon rupture.</p>	