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Plaza Medical expands neurological X-ray

BY ELIZABETH BASSETT
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This summer, Plaza Medical Center of Fort Worth will be able to read your mind.

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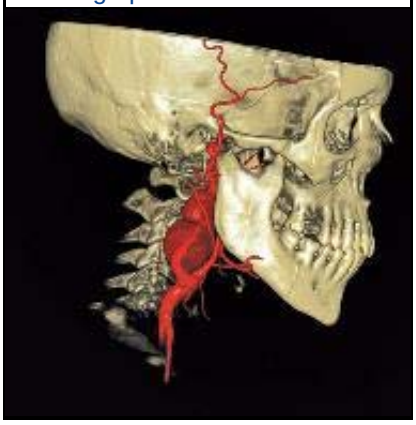

Or at the very least, read your brain more clearly.

In April, the center will begin some remodeling and construction within its radiology department to bring in a biplane imaging system, made by the Dutch company Philips N.V., for interventional neurology procedures. There are about 30 of the systems, which were introduced in early 2008, in the U.S., and it has a baseline price tag of about $2 million, but it will allow specialized radiologists to better visualize the brain and its vascular system to treat conditions such as aneurysms, which can be life-threatening.

“The thing with two planes is you can do more complicated things,” said Dr. Ronald Gerstle, a neurointerventional radiologist.

The system, called the Philips Allura Xper FD 20/20 biplane neuro X-ray system, lets physicians do real-time imaging of the brain in three dimensions and is expected to be up and running at Plaza in July. Becky Lamberth, Plaza’s director of radiology, said the guidance system on the machine and its ability to do highly precise CT scans will cut down on the number of times a patient has to be moved between imaging machines (as well as freeing up some time slots at normal CT scanners).

Images from the biplane machine are shown on its large, high-definition screen. The quality of images is extremely high, said Stan Ferguson, lead special procedures technologist in Plaza’s radiology department, and the machine can also rotate images, allowing the health care workers to see behind and around an aneurysm, for example.

“I tell them this is for imaging only and I better not catch them watching football on that 56-inch screen,” Lamberth jokes.

The two large, flat detectors on the system — each of which produces an image of the brain, which are then combined to give a 3-D image and the machine its "biplane" designation — create several images per second and is safer for the patient and radiology workers, Gerstle said.

"You can also set it so you're not radiating the bejeezus out of yourself," he said.

Interventional radiologists like Gerstle are physicians who use advanced imaging to help them perform less-invasive procedures to treat conditions than surgeons. In the brain, an aneurysm, a balloon-like bulge or dilation on a blood vessel, represents a danger to a patient because if it ruptures it can lead to bleeding in the brain and contribute to strokes. If an aneurysm is identified, a neurointerventional radiologist can use microcatheters to mend the abnormality. A neurosurgeon, on the other hand, may treat an aneurysm by surgically going into the brain and mending it.

Imaging of the brain is tricky — millimeters can be a huge distance, and obviously mistakes can have life-changing effects. Previous imaging with just one plane of view couldn't do justice to the complexity of the organ, Gerstle said.

"When you have one plane, you're taking something that's three-dimensional and putting it into two dimensions," he said.

The biplane system takes the three-dimensional brain and produces three-dimensional models on the screen. Having this advanced imaging will let neurosurgeons and neurointerventional radiologists better gather information about a brain problem and decide the best way to treat it, Gerstle said. If an interventional approach is deemed better, then the machine will also aid that procedure.

Interventional radiologists who specialize in cardiology may have an easier time getting such high-tech (and high-priced) equipment because a hospital stands a better chance of recouping its investment through patients with a better prognosis, Gerstle said. But for patients with aneurysms or the small population who have vascular abnormalities in their brain, there are few places to turn. Plaza's decision to purchase the biplane imaging machine will give those patients a place to go and will hopefully get patients a better treatment, leading to fewer costs for ineffective procedures and a better quality of life for patients who need careful treatment.
