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OASIS

Open architecture – happy patients

The open whole-body
high-field MRI system
OASIS delivers the
highest possible patient
comfort and first class
image quality



A new beginning promises development and progress. In the case of the specialist radiology practice run jointly by Dr. Hans-Ulrich Jarck, Dr. Karl-Friedrich Schünemann, Dr. Jürgen Wiesmann and Dr. Carsten Figge, the new beginning in September 2009 involved two important decisions:

On the one hand, the radiology team moved into the interdisciplinary Specialist Medical Centre in Paderborn, on the other hand the doctors decided to use this move to acquire and now run their own MRI scanner. They consciously opted for an open system which reflects their own professional philosophy in the best possible way: The requirements of the patient should be at the centre of things.

The specialist radiology practice in Paderborn offers a comprehensive range of examinations. Over the last few years, the team around Dr. Jarck has acquired a reputation beyond the city and across national borders because of the emphasis on areas such as CT-guided pain therapy and breast diagnostics. The practice has a 16 slice CT scanner, an ultrasound scanner (both by Hitachi Medical Systems), a mammography system, a conventional X-ray machine, complemented recently by Hitachi's open high-field MRI system OASIS with vertical magnetic field. With 1.2 Tesla, the scanner offers not only the highest field strength currently available on the global market for an open MRI scanner with vertical magnetic field, but with a free field of vision of 270 degree also the most open design compared to all other manufacturers.

"We knew from the beginning that we would only select a high-field MRI scanner," says Dr. Figge, the youngest among the specialist team. "For radiologists it is also very important to perceive the patient as a human being and to under-



The ultimate patient MRI – open

stand all their fears and reservations. The closed, tube-like construction of conventional MRI scanners makes many patients feel uncomfortable, right down to feelings of claustrophobia, and this in a situation which is psychologically quite stressful in the first place. In MRI breast diagnostics in particular it is of-

ten a make-or-break situation for patients. This is why we would like to make things as comfortable as possible for patients during their examination."

The specialist practice does indeed try everything to make things as comfortable as possible. The doctors allow a lot of time for individual appointments which helps to create a more relaxed atmosphere. Radiology is a field where contact between doctor and patient is often quite limited. This is



Technical data for the OASIS™

- MRI with vertical field, 1.2 Tesla
- Asymmetric 2-column-design
- 270° all around view
- Gradient system 33 mT/m, 100 T/m/s
- Zenith™ receptor coils
- Fully motorised patient bed
- HOSS™, RADAR™, RAPID™, TIGRE™, TRAQ™, FLUTE™, VASC™ imaging functions
- PACT (Patient Active Comfort Technology)



*Dr. Jürgen Wiesmann,
Dr. Carsten Figge, Dr. Hans-Ulrich Jarck,
Dr. Karl-Friedrich Schünemann
(from left to right)*

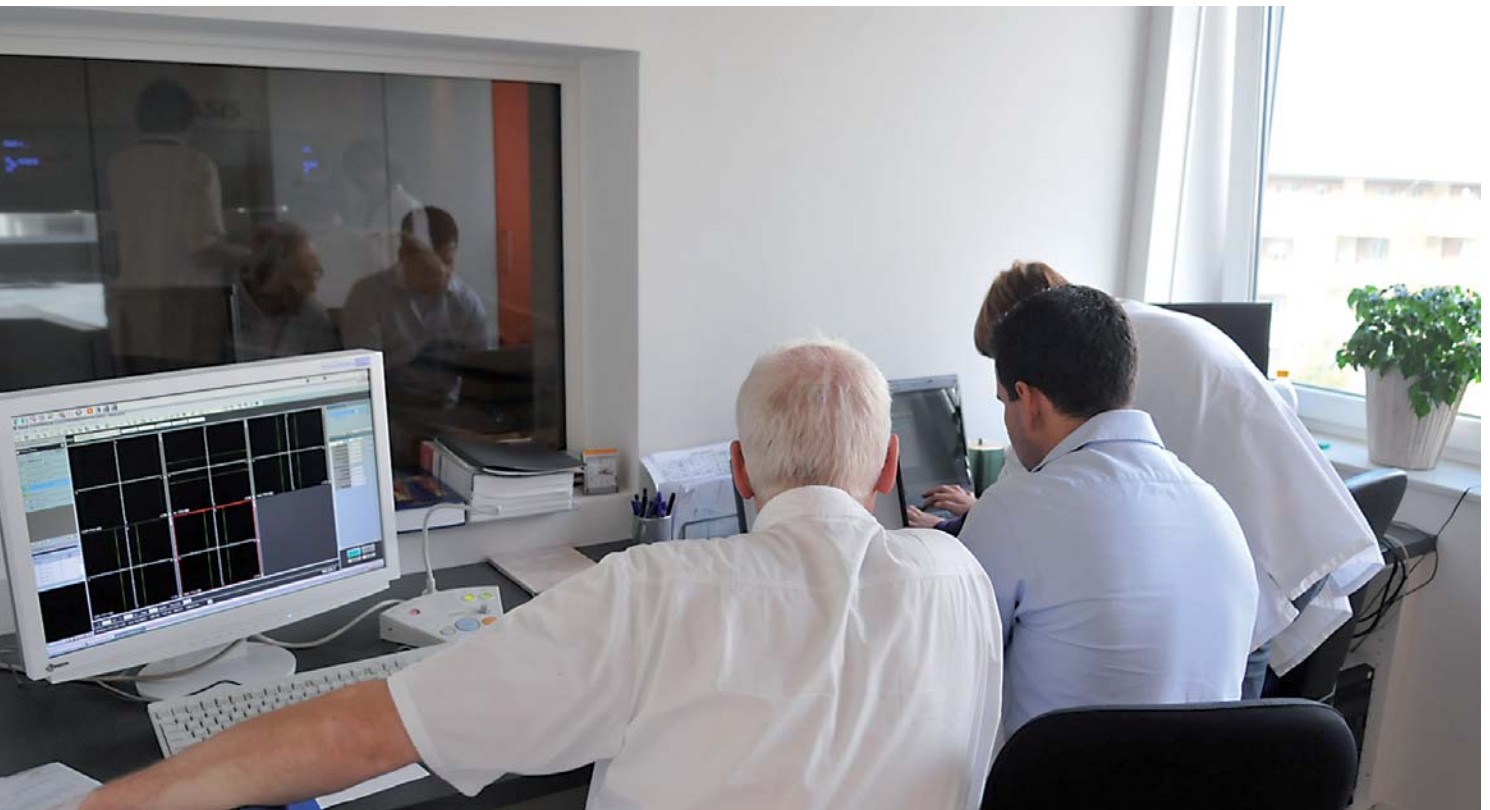
why patients would like to feel well-advised on a person-to-person as well on a professional, medical level. A personal consultation serves not only to make patients feel more positive but also has a diagnostic benefit, knows Dr. Wiesmann: "We practice a human and "talking" medicine. Our motto is that radiology is not a picture puzzle! This means that with every diagnosis there is a clinical and a technical part. We take time to find out from patients what their problems are, which helps us make our initial diagnosis. The image then delivers the deci-

sive information which either confirms the diagnosis or eliminates it. We only come through the right conclusion through a combination of both factors".

"We do not work at capacity," adds his colleague, neuroradiology specialist Dr. Schünemann. "Patients expect that we make time for them, and this is what we do. The positive feedback which we then receive in turn helps to increase patient numbers, so that we are not dependent on dizzying

numbers of examinations. Moreover, we also look after ourselves. The increase in workload in recent years has been so high that each one of us only works at the practice for four days a week. This leaves us with a certain degree of space to ensure that we stay fit, both physically and mentally, and that we have time to develop new ideas." The second recipe for success at the specialist radiology practice in Paderborn is a comfortable ambience. Each patient is given an extra cushion and woolly blankets which they can take into the MRI scanner. Moreover, patients can bring their own dressing gowns so that their privacy is maintained before and after the examination.





High image quality that inspires

The OASIS scanner itself is accepted better than the radiologists ever hoped for, reports Dr. Figge: "We even receive calls from people asking us if we offer an open MRI system. In the age of the internet, people are much more informed about medical technology than used to be the case. We have not yet had a patient who refused to be examined with the OASIS scanner. However, with a closed, tunnel-type scanner there are always people who refuse the examination or where an examination has to be aborted after it has begun."

Because of free access to the OASIS it is also particularly suitable for the examination of difficult patient groups such as obese patients, older people, those with limited mobility or children. "Only yesterday we examined a 4-year-old girl in our open MRI scanner. There was no need for a short anaesthetic or even light sedation. The child was just happy that the mother was able to sit next to her all the time and stroked her hand," says Figge.

From the examining doctors point of view the open design has big advantages over conventional, closed designs. On the one hand, the patient can be positioned in a way that the part of the body to be examined is always in the middle of the magnet. This ensures constant image quality and the examination time is shorter, whereas interventional examinations such as biopsies are actually made possible in the first place. Moreover, due to the open high-field MRI imaging is also becoming of interest for other indications: dynamic examinations of the extremities and joints as well as contrast-enhanced abdominal examinations etc. The field of view with this system comprises 45 cm. The generous display is particularly helpful for images of the spine. The length of an MRI examination can be shortened because of this.

On the other hand, the 1.2 Tesla high-field technology is comparable to the power of the 1.7 Tesla of a conventional machine. Dr. Jarck explains how this is possible: "With conventional, closed scanners the magnetic field is aligned along the direction of the tunnel. The coils are parallel. In the OASIS on the other hand the magnetic field runs from top to bottom and the coils are vertical. This is why the signal-noise ratio is

higher. From a purely mathematical point we therefore achieve a field strength of 1.7 – a figure which in reality doesn't actually exist. With regards to image quality, this means that the OASIS is comparable to a 1.5 Tesla tube type system." But it is not only the field strength which is decisive for the high image quality of the OASIS. The enhanced shim functionality with HOSS (High Order Shim System) and the Phased Array Coil Technology, which produce better signal-to-noise ratios also play an important part. The system can also compensate for motion artifacts for instance in abdominal examinations with free breathing or in neurological examinations.

Dr. Jarck, Dr. Schünemann, Dr. Wiesmann and Dr. Figge have not regretted their decision to move into an interdisciplinary specialist medical centre to co-operate with other experienced specialists, and neither have they regretted the acquisition of their new open, high-end MRI scanner: "We have equipment which works on the same level as a high end 1.5 Tesla conventional system but which offers much more comfort for our patients. This is a very good package," they all agree.