

## Ultrasound made easy

Surgeons at the Hallerwiese Consulting Clinic in Nuremberg rely on the Z.ONE from ZONARE

Located in the middle of Nuremberg, the Hallerwiese Consulting Clinic can already look back on a more than 100 year tradition. Under the sponsorship of the Deaconry Neuendettelsau, this clinic works very closely with the Cnopf'schen Pediatric Clinic, which is based in the same building, but also the Neuendettelsau Clinic located in the town that shares the same name. This allows for all of the human resources and technical equipment to be used as effectively as possible by these three hospitals.

The Hallerwiese Consulting Clinic has always been a clinic for general practitioners who also look after patients in the hospital. However, the clinic successfully started converting some of the general practitioner departments into main departments more than ten years ago, starting with the department of gynecology and obstetrics. The surgical ward followed in 2008 and was officially opened on October 1, 2008, as a main department for general and visceral surgery under the direction of the chief physician Prof. Dr. Klaus Günther that consisted of two assistant medical directors and two assistant doctors. Comprehensive 24-hour medical care can now be guaranteed, even on weekends. In addition, an anesthesiological intensive care unit with up to six artificial respiration units and an intermediate care area ensure an even higher level of safety, particularly with major operations. The department specializes in minimally invasive surgery. Together with the modern fast track concept, this allows for a more gentle treatment and thus speedy recoveries for its patients.

"Due to the fact that we were a completely new department, we were in need of everything that ranged from the smallest of tweezers for use in operations to large-scale instruments," Prof. Günther explains and adds, "We were also in need of an ultrasound system. In my opinion, ultrasound systems are particularly useful for surgeons because they allow us to form an initial opinion relatively quickly and confirm more basic findings. This often saves us from having to do an additional CT, which means we no longer need to expose our patients to unnecessary radiation. Besides, ultrasound often allows us to operate immediately on many of the things we see."

### It's experience that counts

While he was looking to find the right system, Prof. Günther relied mainly on the expert advice he received from his former colleagues in Fürth. "The pediatric clinic in Fürth owns a Z.ONE ultrasound system from ZONARE in Erlangen. At the end of the day, the staff members here essentially reached the same conclusion. They agreed that while the Z.ONE was a bit higher priced than other systems its size, it delivered images that only significantly more expensive systems were able to produce," Prof. Günther notes. In addition to this positive recommendation, he was also able to convince himself of the

Z.ONE's high image quality, but also how easy the system is to operate and its hybrid design. "Ideally, I wanted to have both a large monitor that provides excellent images so I could explain certain things to patients and a small device that I could carry with me to patients. And with this system, I had both.<sup>1</sup>" And when it came to transducers, Prof. Günther decided in favor of an abdominal (C6-2) and a linear (L8-3) transducer that would offer him a good mix between use with small soft parts or the thyroid gland and the ability to assess the depths of the abdomen more accurately.

The ward has around 20 beds that keep the five-member team quite busy. They cover the entire range of visceral surgery, except for the esophagus, the liver and the pancreas, whereby the main focus is on colorectal and coloproctological surgery. "Our unit is still relatively new, however our first year has really been quite successful. We are set up in such a way that we perform operations on three days of the week and only have consultation hours on two days. This really works out well, because it also allows us to use our ultrasound system to investigate certain ailments that need to be assessed in advance of an operation."



Prof. Dr. med. Klaus Günther, chief physician at the department for general and visceral surgery at the Hallerwiese Consulting Clinic

<sup>1</sup> Configuration in use: Scan Engine with the SmartCart workstation

### Excellent images at the touch of a button

The Z.ONE can be used to assess all types of hernias, but also blood flow, extremely well. "Even if a patient who has already been diagnosed with respect to the thyroid is sent to us, we're the ones who will be performing the operation, therefore it is very important for us to take a closer look at it ourselves to determine whether or not there are additional nodules and see whether the gallbladder is inflamed, if we will be doing a cholecystectomy. The Z.ONE is also of great benefit to us in diagnosing Crohn's disease. Even a surgeon who doesn't have all that much ultrasound experience can use this system together with the appropriate transducer and come up with relevant findings. I am often amazed with how much I see," Prof. Günther explains. This high image quality is achieved due to the fact that, unlike conventional systems, the Z.ONE doesn't collect the echo information line for line, but rather larger volumes of data contained inside a relatively small number of larger "zones" extremely quickly without relying on a beamformer. These zones each contain the amount of data that many lines would contain in a conventional system. In addition, this information is processed at the exact speed of the processor, in other words in about one-tenth the time that other systems require.

Prof. Günther views the extremely short period of time (approx. 20 sec.) it takes to boot the system to be yet another positive aspect of the Z.ONE. If the large workstation needs to be moved from one room to the next, it has to be separated from the power supply.<sup>2</sup> "However, this doesn't pose a problem either because the Z.ONE is ready to be used again within only a few seconds," Prof. Günther notes, visibly pleased.

Nevertheless, in his opinion, the main advantage for surgeons is the fact that using the Z.ONE is "foolproof", as he puts it, and yet the system still delivers outstanding images. "It is almost impossible to make incorrect adjustments because the system always adjusts itself extremely well. And an excellent image can be achieved at the touch of a button by activating the *Optimize* function. We certainly aren't using all of the capabilities that the Z.ONE has to offer to the fullest. What really counts for us is having easy access to great images that we get without having to put in too much effort. In preparing for an operation, it is extremely helpful for the surgeon to be able to obtain his own overview in advance. After all, surgery isn't commissioned work and the surgeon is not only legally accountable for his operations, but, even more importantly, owes it to the patient to do what is right for him," Prof. Günther concludes. "This is simply an excellent tool for surgeons and the clinic also benefits from the fact that we are often able to avoid using more complex and thus more expensive imaging modalities."



**Left thyroid lobe with a round nodule.**  
Perivascularisation of the nodule with the sensitive colour doppler.



**Left thyroid lobe with a round nodule.**  
Excellent contrast resolution with ZST Zone Sonography Technology.  
Set focus through the image with CTS (Continuous Transmit Synthesis).

<sup>2</sup> A battery pack that offers approx. 3 hours of operating time is available for the workstation as an option.