Hospital portrait

Shonan Fujisawa Tokushukai Hospital was reopened after reconstruction in October 2012 as a key clinical institute in this region. A hybrid OR dedicated for the spine and scoliosis center was set up and equipped with the Artis zeego robotic imaging system, the TruSystem 7500 operating table, and the CURVE navigation system (BrainLab). It is the first installation dedicated solely for spinal surgery worldwide, and it plays a pioneering role in orthopedic surgery in Japan.

Dedicated for spinal surgery only

Dr. Sohei Ebara, vice president of the Shonan Fujisawa Tokushukai Hospital and director of the spine and scoliosis center, is a pioneer in developing safer, less invasive image-guided procedures for spine surgery.

From 2004 to 2014, Dr. Sohei Ebara performed 2,330 spine surgeries, including cervical, thoracic and lumbar spine, and scoliosis surgeries. But 2012 was a game changer: After his long experience with the use of mobile C-arms, Dr. Ebara built a hybrid operating room dedicated solely for spinal surgery. The Artis zeego robotic imaging system allows a smoother workflow during the procedure.

The effect: operation time shortened by almost half. And he was able to nearly double the number of procedures from 463 in 2011/12 to 768 in 2013/14 – an increase of 66% in only two years! But to Dr. Ebara, the most important aspect is the superior clinical outcome in the hybrid operating room compared with the procedures performed in a conventional operating room.

What effect did the introduction of Artis zeego have on your workflow?

S. EBARA: Initially, it took us eight hours or more for scoliosis surgery with endoscope. Now, since we implemented zeego, it takes only four hours. The reason: In the past, we needed to turn the body two times to scan in endoscopic scoliosis surgery (anterior approach) and three to four times to scan in open scoliosis surgery (posterior approach). But with zeego, it is possible to do 3D images from ilium to thoracic vertebra No. 6 or 7 by two turns. In the past, we could handle only one scoliosis surgery per day. But the duration of the surgery is crucial: Four or eight hours makes a big difference. And when the surgery is finished in three to four hours, we can even perform one more surgery per day!

How did you convince the management that the investment will really pay off?

S. EBARA: We emphasized the advantages of zeego. Our system was the world's first system specialized for spine – great for public relations! We realized that even if the system is used solely for the spine surgeries, it can pay off. With zeego, the stress for the surgeon is dramatically reduced. And we could also reduce the complication rate: From 5,041 screws implanted, only nine screws had to be reinserted, which means an ultralow complication rate of only 0.18%. We haven't had a lawsuit for the last ten years, and in that respect the system is supporting the hospital management. And last but not least: Our staff and patient dose level is decreasing. All these facts explained pretty well why we should invest in the technology.

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A complication rate of less than 0.2% is an amazing result. How is that possible?

S. EBARA: With the metal artifacts from the implants, usually image quality declines. But with zeego, the image is clear so that we can quickly make an accurate and smooth decision. That reduces stress to the surgeons and increases patient safety. zeego memorizes the system position so that we can immediately scan with intraoperative DynaCT. In the anterior scoliosis surgery, there is the aorta at the other side of the vertebral body. If it is low back, there are great vessels. The screw needs to be carefully penetrated through the bone cortex into the other side, but it should not touch the great vessels by pushing it too much. To fix the screw right, we can use DynaCT to precisely control it. The image is very accurate: That makes us confident.