

Point of view of a hand surgery specialist on image quality and radiation safety

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How did you train to become a specialist hand and wrist surgeon?

"I am an orthopedic surgeon, following medical school at Leuven University, and further orthopedic training in Leuven, in Antwerp, and in Exeter, UK. I became fascinated by hand surgery and traveled to the United States for a hand surgery fellowship in the renowned Kleinert Institute in Louisville, Kentucky, USA. At that time, it was without doubt the best place in the world to specialize in hand surgery.

Now, I perform about 30 hand surgeries per week. These surgeries can last from 15 min to 2 hours and longer. Hand surgery is a very diverse specialty, from easy short procedures, to very complex microsurgery cases. It is very different from a knee surgeon, for example, who does about 3 different types of procedures. Hand surgery covers a wider variety of procedures and, this is one of the things I like in my job."

What are the challenges of using fluoroscopy during surgery?

"I use fluoroscopy for about 20% to 30% of my hand surgery procedures. Imaging is very important, as it allows us to see inside the hand and evaluate bony deformity and correction. Exposure to radiation is something that surgeons have become increasingly worried about, more so than previously. During the surgery, our hands, thyroid and eyes are very close to the X-ray tube and we are very concerned about radiation protection.

Many surgeons prefer to lower the X-ray dose and exposure to radiation, even if that gives them a somewhat lower image quality. Equipment that combines excellent image quality with low radiation exposure is what we need."

How did the OEC MiniView C-arm change your specialty?

"The OEC MiniView is much easier to use during surgery than our previous imaging systems. In the past we

selected a mini C-arm with the largest distance between the beam source and the detector to allow us to do surgery, without obstructing the working space too much. But the image quality was not as good compared to the OEC MiniView, and the mechanical properties were very poor. Every month we had something that needed to be repaired. The C-arm was drifting during procedures for example, which was very frustrating.

The OEC MiniView C-arm is compact, nurses have no difficulty bringing it into the OR, and once it is in position, it doesn't move. There is much less stress in the OR than before. OEC MiniView C-arm makes our procedures faster and at the end, we can achieve more and increase the workload. It gave us better image quality, the surgery takes less time, and it improves the quality of my surgical work. Nobody needs additional stress in the OR. And, in addition, the dose is very low with this C-Arm."

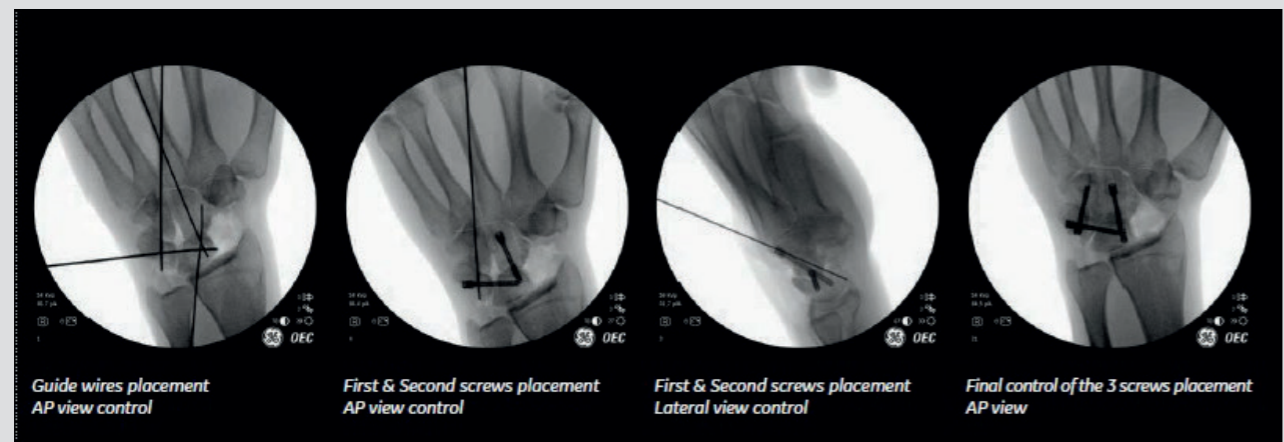


How did OEC MiniView help you perform your procedures where fluoroscopy is needed?

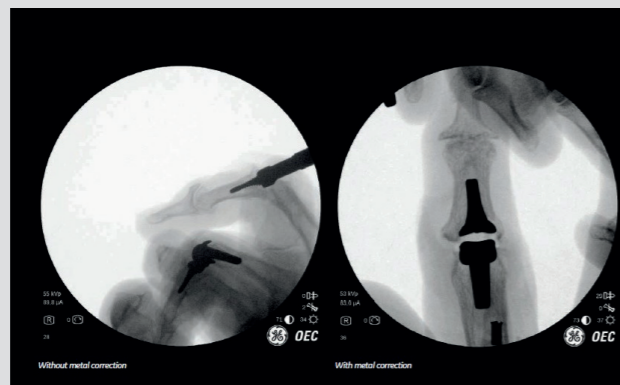
“The most complex procedure where we need maximal detail and longer radiation time are arthroplasties of the PIP (Proximal InterPhalangeal) joint, complex finger fracture fixation, carpal fractures and more particularly scaphoid fracture reduction. These are very small bones, and we need details to be sure that we realign the bone fragments correctly. Finger fracture reduction has to be very, very precise. It is important to reduce the fracture with less than 1 mm of error. That’s why image quality is very important.

When we use arthroscopy in addition to fluoroscopy, the handling of the tools gets more complicated. I use arthroscopy for arthroscopic assisted fixation of scaphoid bone fractures for example. With the help of a small intra-articular camera, we realign the bony fragments, and at the same time use fluoroscopy. It is a lot of machinery, which results in a complex working space. But the OEC MiniView is very easy to handle which facilitates the procedure. And with the button on the system to lock and unlock the arm, it is very easy to shift the C-arm in and out of the operating field. I can easily remove the C-arm, do surgical work, bring it back and lock it to control again. It is very stable and very easy to maneuver.

OEC MiniView makes us feel more secure, we feel we can trust the image more than before. If you have to rely on poorer image quality, you can think the reduction and result are satisfactory, but when formal X-rays are made after the procedure, you may discover it is not the case. This does not happen with the OEC MiniView, we feel reassured and more satisfied once the procedure is finished, it takes away stress.” □



Partial wrist arthrodesis under fluoroscopy guidance



Proximal InterPhalangeal (PIP) joint arthroplasty

The statements by GE’s customers described here are based on their own opinions and on results that were achieved in the customer’s unique setting. Since there is no “typical” hospital and many variables exist, i.e. hospital size, case mix, etc., there can be no guarantee that other customers will achieve the same results.