

How the Schloss Werneck Hospital Uses mediCAD®



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mediCAD®
The Orthopedic Solution



An Interview with Prof. Dr. Christian Hendrich

The Schloss Werneck Orthopedic Hospital plans endoprosthesis with mediCAD® 2D

From Skeptic to power user

Until 2019 the hospital's orthopedic surgeons planned their operations with a system they developed in-house, which entailed using templates to draw their prosthetic planning on X-ray copying film. But to improve their workflows and plan directly in the hospital's image data management system (PACS), they needed software. „From our perspective the key selection criterion was to be able to go on using our established technique in the digital world“, says Medical Director Prof. Dr. Christian Hendrich.

After thoroughly researching the market and trying out several different planning systems, they ultimately opted for mediCAD® 2D. „The system's modularity is extraordinarily comprehensive, which means we barely need to change our prosthetics planning process at all, and that was the deciding factor“, says Prof. Hendrich. In other words, the surgeons wanted to be able to use a reference line as close as possible to the hip rotation center, options for reproducible leg length measurements and a practice-oriented measuring process - for all implant systems at the hospital. „mediCAD® 2D covers all of that, which is why we opted for this particular surgical planning system. And finally, we didn't need to adapt the program to suit our requirements because it already did“, says Hendrich. The Schloss Werneck Orthopedic Hospital now uses the 2D Hip, Knee and Osteotomy modules.



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The Schloss Werneck Orthopedic Hospital is one of Germany's leading specialist orthopedic clinics. Based in Schweinfurt, Lower Franconia, the hospital has 100 beds and performs over 4,700 operations per year, around two-thirds of which are endoprosthetic procedures. It is Europe's leading hospital for MAKOpasty® robot-assisted surgery and has four robot systems.



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PACS integration boosts efficiency

Following a consultation, patients typically come to the hospital to have up to date X-rays taken in preparation for the surgery. „As we are an endoprosthesis center, we have to meet defined quality criteria and initially create the surgical plan upon inpatient admission. This means we can order the corresponding implants or implant sizes at an early stage“, says Prof. Hendrich as he explains the preoperative process. Another advantage is that since all the X-ray images and planning data are available in digital format, the plan can be called up on any PC in the hospital network - and most importantly, in the operating theater.

But how exactly does the planning work? Surgeons retrieve the patient's details from the ORBIS hospital information system, providing access to all the information required for their work. They open the planning image in mediCAD® 2D and start planning the operation with the help of the integrated modules. The whole planning process for a hip endoprosthesis takes an experienced orthopedic surgeon just three minutes, which is roughly the same as it would take with templates and films. The surgeon saves the completed plan in a daily list so as to be able to retrieve it, and also as a document in the PACS. Prof. Hendrich sums up the benefits of tight integration. „Integrating mediCAD® at the heart of our imaging data management system is crucial to our workflow. We can call up a patient plan straight from the operation plan - anytime, anywhere - and display the plan on a monitor“, The digital planning and the associated option to save it to the PACS saves the surgeons from having to search for the next X-ray image.

When it comes to the quality of the surgery itself, a special 46-inch monitor in the operating theater is a key factor. „The panel is so bright that I can enlarge my prosthesis planning enough to compare the operation site with the planning at a glance. It's so easy. And the color presentation makes it easier for us to discern“, says Hendrich. Along with the large monitor, the surgical panel has another 27-inch working monitor for patient data and other information. „My biggest reservations about the digital planning system were the display. The X-ray film gives you a picture at scale whereas a small monitor does not.“



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High modularity is a winner

Before it was introduced, Prof. Hendrich's expectations of digital surgical planning were far from high. „I was convinced it wouldn't work the way we needed it to.“ But a year or so later and the medical director is a mediCAD® convert: „In fact, it fully met all of our requirements. We didn't have to change our work-flows or our tried and tested measuring procedures, and we can take measurements that are accurate to the last millimeter. And surgeons can carry out their planning from any workstation, which is very helpful. Everything works much better than I expected.“

He sees mediCAD® 2D's modular design as the key benefit, because it supports each surgeon's custom planning. For example, it uses a variety of reference lines such as Kohler's line or the inferior ischial rim. In addition, the implant database is so accurately maintained that you can plan for virtually any system. „Our standard prosthesis system is the Trident cup with the Accolade II stem, which is especially flexible in terms of the leg length setting as it has head length gradations of 2.5 mm. mediCAD® allows us to build in the variability of the prosthesis system right from the planning stage“, enthuses Prof. Hendrich.

With around 600,000 digital planning templates to choose from, it is also easy and straightforward for the orthopedic surgeons to plan revisions. This is particularly helpful when planning difficult hip replacement operations. „We can cut the femoral outlines to balance out large abduction and adduction contractures. With manual planning, that used to limit us from time to time“, says Hendrich, citing this as just one of the advantages of surgical planning with mediCAD®.



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Faster planning, happy orthopedic surgeons

The orthopedic specialists at Schloss Werneck experience none of the delays that surgeons at other hospitals often complain about. Although they feel that image retrieval could be a little bit faster, the system meets their needs across a very wide range of working practices. „Our surgeons can fully tailor their mediCAD® to their own needs and usual ways of working, which obviously boosts acceptance“, says Prof. Hendrich.

He also says that the planning software has been very well-received by doctors. „All our colleagues use mediCAD® 2D without exception. Some of our assistants have become real product specialists who know how to get the very best from the software in terms of fine-tuning“, he affirms.

Before the digital planning system was rolled out, he was fundamentally skeptical. Today he champions the new method, not only because of the possibilities offered by the software but not least thanks to mediCAD® employees, for whom Hendrich has high praise. „They love their program and are experts in every detail. That was something we noticed both in the training sessions and on the occasions when we needed support. Nothing was too much trouble. Everyone went to great lengths to help me through my skepticism as a user“, starting with the system implementation. Everyone who took part left the tutorial able to start planning independently and got up to speed very quickly. And when problems do arise, mediCAD's telephone support staff are on hand to provide users with advice and assistance. „Initially I myself needed some coaching from them“, says Hendrich. „We spent some time on the phone adjusting my user interface, which among other things speeded up my work“.



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