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Siemens

Together with Synthes, the global market leader for bone implants, Siemens Healthcare has developed the software PreOPlan that will allow surgeons to virtually plan routine bone fracture surgeries (trauma surgery) as well as corrections of leg deformities (osteotomy). Using PreOPlan, the surgeon simulates the planned procedure on an x-ray image of the patient. With the aid of an integrated implant database, he can determine which bone implants are, for example, most suited for the correction of a fracture. Subsequently, the software generates a report that helps the operating staff prepare the surgery with the selected implants. Moreover, the surgeon can use this report to prove his preparations for the procedure and to comprehensively explain the operation to the patient.

Normally, surgeons plan routine surgeries for bone fractures of the extremities "in their heads" while looking at an x-ray image of the fracture, or they hand-draw the planned procedure on the image. This brings several disadvantages: The surgeon can only estimate which implant is best suited to fix the point of fracture. Furthermore, he is not able to accurately document how he has prepared himself for the procedure. Many hospitals, however, demand such verification. In order to allow surgeons to plan their procedures safer and verifiable, Siemens Healthcare and Synthes jointly developed a software that allows simple and quick preparation of routine surgeries on a computer workstation.

The software PreOPlan allows the surgeon to precisely analyse a bone fracture using a digital x-ray image of the patient: The surgeon can segment the fracture on the screen, measure it and then reassemble the fracture point in the anatomically correct position. All suitable implants for the respective anatomical region are suggested automatically by a database with bone implants from Synthes. The surgeon can call up information about the implants (length, inclination, size, or material) directly on the x-ray image. Once the surgeon has decided for an implant, PreOPlan automatically presents a selection of implants that are required additionally, such as screws for fixing. The surgeon then can make his selection. Overall, the planning of a routine surgery with PreOPlan only takes a few minutes.

Subsequently, the planning documents are summarised in a final report. This contains the planning images that the surgeon can use for orientation during surgery, as well as a material list for the operating staff who have to prepare the procedure. The planning images make it easier for the attending physician to explain the intended surgery to his patient. Moreover, the planning documents facilitate obtaining second opinion from a colleague.

For more information, please visit: www.siemens.com/healthcare

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