Teaching and Training Model for Fluoro-navigation in Orthopaedic Trauma Surgery

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Technology description

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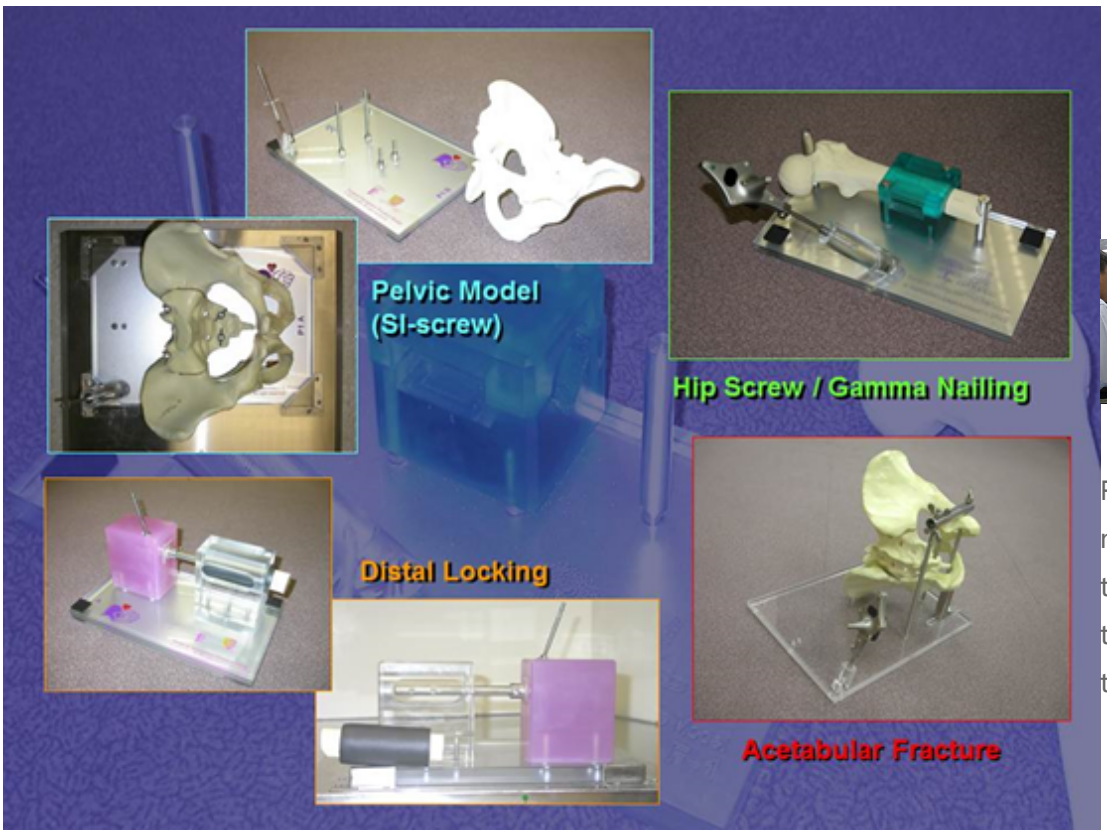

Teaching and training models for various kinds of computer aided orhopaedic trauma surgeries

Fluoro-navigation training with teaching and training model

Computer aided orthopaedic surgery (CAOS) is a recent advancement in surgical technology. Fluoro-navigation is a remarkable technique in orthopaedic trauma surgery where implant fixation surgery can be finished with high accuracy using minimally invasive surgical technique. The teaching and training model for fluoro-navigation in orthopaedic trauma surgery is an image guided interactive surgical navigation system particularly designed for fracture fixation surgeries and other related applications where intraoperative fluoroscopic control is required.

As CAOS is a brand-new technique which requires the interaction among the surgeons, the navigated instruments, the patients' anatomies and the computer system, it is essential for the surgeons to master the technology and the detailed operative procedures before applying on patients clinically. A generic system and training models have been developed based on the principles of image guided navigation surgery on the standard configuration. By incorporating the fluoroscopic images and the image guided navigation computer system, surgery simulated training and practice can be conducted in the laboratory.

Fluoroscopic images of the specific bone model fixed on a specially designed jig are pre-taken and stored in the navigation computer system. The stored images can be recalled anytime in the laboratory for practicing and training for navigation guided surgery with the bone model. There is no need to acquire the fluoroscopic images again during the training or practicing. The trainees can go through and practice the complete surgical procedures of various navigation guided orthopaedic surgery in the laboratory environment. Objective assessments on surgeons' technique can also be done before they are allowed to operate in operating theatres. This is a generic system that is compatible with any surgical navigation systems from different commercial manufacturers.

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