Neurocirugía
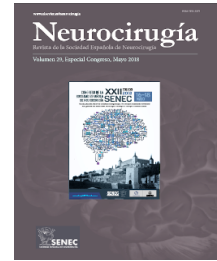
C0257 - SIMULACIÓN VIRTUAL EN FIJACIÓN TRANSPEDICULAR LUMBAR

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Resumen

Objectives: The system presented in this paper consists on a virtual simulation of a lumbar transpedicular fixation surgical operation. The user will be inside an operating room, in front of the patient, which in this case is a complete 3D model that includes musculature, complete skeleton, ligaments, veins, arteries... The objective of this study is to know the potential of Virtual Reality as a useful technology for training.

Methods: 2.1 Hardware and tools. We used a regular computer, with a great computing power, and different models of smartphones and glasses of Virtual Reality. 2.2 Medical Procedure. All the steps of a fluoroscopic guided lumbar transpedicular fixation are described.

Results: On the one hand, it has been achieved that anyone is able to understand the operation of the system and use it perfectly after only a few minutes of execution. This is what in software engineering is known as usability. On the other hand, the tool is capable of transmitting to the user what are the steps that must be taken in a lumbar transpedicular fixation procedure, which of course is the main objective. This has been achieved in three different ways: 1) Visualization by 3D animations of the tasks that must be carried out. 2) Videos of a real surgery for each step of the procedure. 3) Interactive simulation in which the user must test what he has learned by performing each step himself.

Conclusions: This system is a first step towards developing more complex and detailed simulations of surgeries. It is concluded that the system is of great help to know the tools used in a surgery, as well as the most important steps of the procedure. It is also worth noting that medical professionals or students can perform the simulation as many times as they wish.