Digital Preoperative Planning for Total Hip Replacement Using Two Dimensional X-ray Imaging

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Abstract

In total hip replacement (THR) surgery, preoperative planning provides valuable information about the anatomy and appropriate implant size. Currently, surgeons predict the size of the implant that will be needed using an analog or conventional method whereby implant templates are overlaid on the patient's X-ray. In this study, we propose to use a digital, computerized
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method of templating that we expect will be more accurate than the overlay method. For this purpose, we introduced the OrthoHIP™ software for THR preoperative planning. The OrthoHIP™ consists of four main modules; input, scaling, planning and output. This software enables the surgeon to select a digital implant from the database and then digitally overlay it on the two dimensional (2D) X-ray image. In addition, the surgeon can submit the report to a database management system.

Reference


Index Terms

Computer Science Biomedical

Key words

Total hip replacement digital software

implant

preoperative planning

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