

Computer-assisted Navigation: Milestone in Development of Total Knee Replacement

There are about 800 total knee replacements (TKRs) done in Hong Kong every year. The Division of Joint Replacement Surgery, Department of Orthopaedics and Traumatology, Faculty of Medicine, the University of Hong Kong (HKU) has since 2003 started to perform TKRs under computer-assisted navigation. The whole operation is done under computer guidance, aiming to improve the accuracy and consistency in each operation. Until February 2005, the Division has performed over 30 TKRs with the use of computer-assisted navigation.

Experience has shown that, as compared to traditional surgeries, TKRs under computer-assisted navigation can improve the radiological alignment of the implanted prosthesis. It is estimated that this will lead to a reduction in the need of a revision knee replacement surgery after 15 to 20 years.

The aim of TKRs is to re-construct the diseased knee joint and turn it into a pain free, stable and mobile joint. Nowadays, over 90% of the patients receiving TKRs are aged above 65, thus with an aging population, it is expected to see a further increase in the number of patients requiring TKRs, and a much wider application of computer-assisted navigation technology in future.