



Service Priorities and Programmes Electronic Presentations

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Surgeon controlled filmless imaging system in operating room through touch-free “leap motion” during operation in TKOH

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Introduction

Accessing different multi-planar and cross-sectional imaging (i.e. CT and MRI) during surgery has an important role in surgery nowadays. However, traditionally, controlling a computer often require touching mouse, keyboard or touch-screen. These exposures will increase infection risk of -contamination and waste time to perform scrubbing and changing gloves. A touch-free system will be an ideal solution for surgeon to control computer during intra-operation. Leap Motion is a gesture control device which allows surgeons controlling computer without physical contact. Every operation theatre in TKOH have already equipped with wall mount computer screens, and computer running Osirix MD as a DICOM viewer. Leap motion controller and related software are installed to allow surgeon controlled assess to the films.

Objectives

To compare the time used in touch-free filmless imaging system and traditional computer system and hence the efficiency of operation. To evaluate the infectious risks associated with touch-free filmless imaging system versus traditional computer system. To assess surgeons' acceptance between touch-free filmless imaging system and traditional computer system.

Methodology

A training section and gesture checklist are provided to potential users before applying to real patients. Users had survey interviews after their training session and the first operation.

Result

Generally, a training section of 15-30mins including demonstration and return-demonstration is needed. Users are familiar with the gesture control after the training section. Generally, operating time is reduced with the use of filmless system and leap motion gesture control. Surgeons do not need to change gloves or ask for help from circulating staff to control the computer for them. The efficiency of operation is improved. The readily available multi-planar images and virtual 3D images added

precision to operative procedures, especially when handling tumours. Since the control is touch-free, the risk of contamination is very low. Most surgeons prefer the control after frequent usage. Conclusion Gesture controlled devices is useful for surgeons reviewing X-ray images in operating theatre