

Introduction

Visualization of a patient’s voluntary and involuntary movements during deep brain stimulation (DBS) lead implantation is important and often requires the assistance of many operative team members given the surgical positioning and draping. To allow the surgeon to remain at the surgical site while also visualizing the patient’s face and unilateral extremity movements, we report the intraoperative use of real-time video monitoring as an adjunct to traditional DBS operating room practices.

Methods

This new technique was utilized during DBS lead implantations in 5 patients with movement disorders. Surgeries were accomplished within a stereotactic frame utilizing direct and indirect targeting methods. To visually monitor the body and pertinent patient extremities by the surgeon throughout the surgery, two tablet computers were attached to the handle of an unused ceiling surgical light and an IV pole using universal mounting systems. For visualization of the face, a smart phone with a camera was positioned on a head drape bar or an IV pole using a universal mount. The tablet computers and smart phone were connected to video software via secure wireless hospital server

Results

The surgeon was able to monitor patient movements in real-time during test stimulations. This reported method has been utilized during lead implantations conducted under both monitored anesthesia care and general anesthesia. Limitations include periodic Wifi delay or loss of Wifi signal.

Conclusions

Our data suggests the method described is a useful tool in assisting the surgeon in monitoring patient movements during DBS surgery, particularly during test stimulations, and is also a useful tool in facilitating intraoperative communications.

Learning Objectives

By the conclusion of this session, participants should be able to: 1) Describe the importance of monitoring the patient's face and unilateral extremity movements during surgery 2) Identify novel technologies that can be effectively used in the operating room to monitor the patients

References