Technical Feasibility and Safety of Ultrasound Guided Supraclavicular Nerve Block with Assistance of a Wearable Head-up Display: 41506

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Disclosure

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Introduction

• Developed a novel device that is able to transfer and display images from the ultrasound machine onto a head-up display that is worn by the operator.

• Previously used the same system to transfer neuronavigation images onto head-up displays for procedures including image-guided pedicle screw placement, ventriculoperitoneal shunt placement, and supratentorial meningioma resection.
Method

• Tested the hypothesis that the head-up displays and streaming hardware and software can enhance an ultrasound-guided nerve block procedure.
Results
Discussion and Limitation

• The quality and the speed of transmission of images were adequate
• The Google Glass has a resolution of 640x360 pixels, and is a 1-inch screen in size
• Battery life is about 2-3 hours
• The additional costs of buying Google Glass, and added technical complexity
Summary

• Successfully demonstrated the usage of a head-up display system for use in real-time ultrasound guided nerve block without visual diversion from the procedural field

• Future studies should aim to test the system in other ultrasound guided procedures (thoracentesis, pericardiocentesis)

• The head-up display technology has the potential to gradually decrease, and eventually eliminate the necessity of ultrasound display in interventional and surgical procedures