

# Efficacy of Head-Mounted High-Definition Video as a Learning Tool

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## Introduction

Learning procedures and surgical techniques has traditionally started with reading a textbook followed by live instruction and finally hand-on experience. Today, with the advent of inexpensive high-definition video, learning can also happen by watching instructive procedural videos. Currently, most videos are recorded by microscopes and endoscopes which limit the video to the crux of the procedure and exclude preparation, opening, approaches, and closing techniques.

In our study, we use a head-mounted high-definition video camera to record complete procedure/surgery and splice this macro-video with video from microscopes and endoscopes providing a complete video. Our study examines whether subjects perceive any benefit of reviewing this complete video prior to performing a new task.

## Methods

We recorded 5 complete surgical videos with a head-mounted HD camera and edited a complete procedure/surgery video from beginning to end. The subjects were shown 2 videos for procedures they had never performed before.

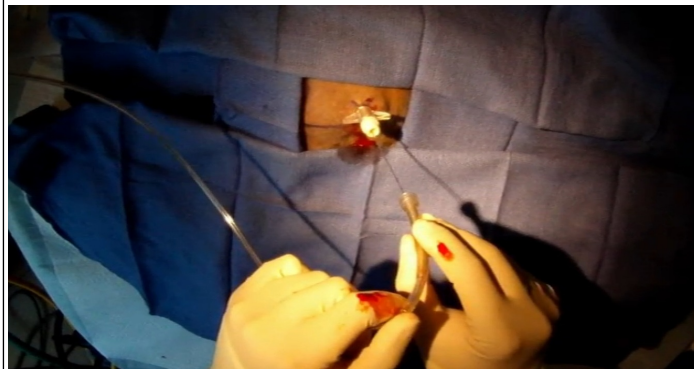
30 physicians

- 20 male
- 10 females

Each subject was then surveyed about:

- Educational value
- Anatomical orientation
- Confidence levels after watching the videos

### ICP Monitor Insertion



### VNS Battery Change



### MIS TLIF



## Results

When compared to textbook descriptions with illustration versus narrated video:

- 26/30 (87%) participants preferred reviewing video instead of using textbooks
- 28/30 (93%) felt that a well-done video was more effective in conveying anatomical details over textbook figures
- 30/30 (100%) subjects felt that a video library of procedures/surgeries related to their fields would be a valuable resource

There was no statistical difference between males in females for all the study questions.

## Conclusions

Our results suggest that well-edited procedure/surgical videos are a desired tool by both surgical and non-surgical physicians and can supplement traditional methods of learning by providing visualization of techniques that cannot be provided by textbooks alone.

## Learning Objectives

By the conclusion of this session, participants should be able to understand the efficacy of using procedural videos as a learning tool.