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Use of 4K3D Video Microscope in Male Infertility Microsurgery

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Abstract

Objective: To evaluate a 4K3D video microscope in the operating room of an outpatient surgical center during male infertility microsurgery procedures.

Design: Video presentation

Setting: University of Miami outpatient surgical center

Patient(s): All patients undergoing microsurgical procedures who signed a written, informed consent for video and audio recording.

Intervention(s): vasovasotomy, vasoepididymostomy, varicocele repair, microsurgical testicular sperm extraction

Main Outcome Measure(s): Operating room times and surgeon fatigue

Result(s): This video demonstrates the potential advantages of a 4K3D video microscope in the operating room compared to the standard optical operating microscope (SOM), as well as robotic assisted microsurgery. Operating times for all varicocele repair cases performed with the 4k3D video microscope during the 4-week trial period (6), were compared to the 6 most recent varicocelectomies done with a SOM. We observed a decrease in the median operating room times (74.5 minutes vs 96.5 minutes) for those surgeries involving the 4k3D video microscope. Mann Whitney U test was used to compare median operating times, however, because of our small sample size this was not statistically significant ($p=0.092$) (Figure 1). Additionally, between cases, the transport of microscope from room to room, draping and setup of the 4k3D video microscope required less time and was less strenuous for the OR staff. The 4k3D video microscope allows the

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Disclosure:

The authors report no conflicts of interest in this work.

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surgeon to operate in a more ergonomic position compared to the SOM and comes at a price point which is more reasonable than a surgical robot (DaVinci).

Conclusion: The 4K3D video microscope offers potential ergonomic and logistical advantages over the SOM and robotically assisted surgery. Future studies with larger sample sizes are needed to evaluate these potential advantages and objectively study the ergonomic improvements that the 4k3D video microscope offers over the SOM.

Keywords

male; infertility; microsurgery; microscope

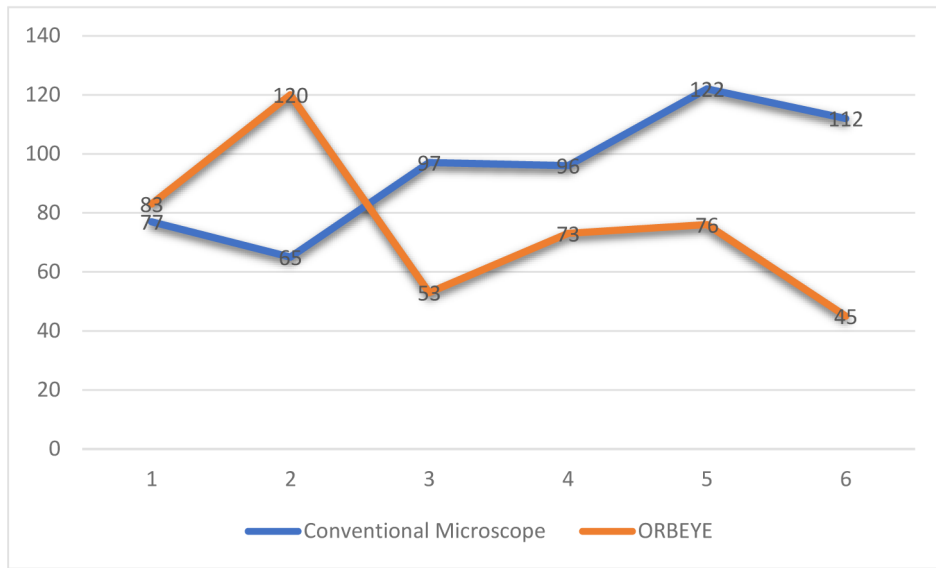


Figure 1. Operating Room Times for Unilateral Varicocele Repairs (4k3D video microscope vs. Conventional Microscope)
*Time in minutes; Mann Whitney U test was utilized to compare median operating times for 4k3D video microscope vs SOM (p=0.092).

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