Efficacy of Using Surgical Loupes versus Microscope Magnification to Train Orthopedic Residents in Microsurgery

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20 Ortho Residents Pre-assessment

Split into groups of 10

Trained with microscope

Assessment

Trained with loupes

Educational Objectives
Microsurgery has become an increasingly important skill for surgical residents. Traditional microsurgery teaching has been performed using an operating microscope, which can limit teaching opportunities due to cost and availability. Orthopedic surgeons are more likely to use loupe magnification rather than microscope magnification, but microsurgical teaching with loupes has not been validated. This project seeks to compare microsurgical skill between orthopedic residents who undergo teaching with loupe versus operating microscope magnification. Our hypothesis is that microsurgical skill will not be significantly different between these two groups.

Project Description
Twenty orthopedic residents will be split into two groups at random and perform a standardized pre-assessment. One group will undergo a single training session with the aid of microscopes and the other will use only the surgical loupes. Training will be performed by a microvascular specialist. After one teaching session with an instructor and five learning sessions with guided practice, each group will be assessed for skill and compared. Participants will be videotaped performing an anastomosis and graded by a microvascular specialist not involved in the training process.

Projected Outcomes
Outcomes will be qualitative and quantitative assessment of the videotaped anastomosis using validated microsurgery evaluation scores. Assessment will be blinded to the participant being evaluated.

Future Plans
Power analysis indicates a group size of n=20 will be necessary for answering this clinical question. Project is planned for initial enrollment of 10 participants to be completed by the end of the academic year. An additional 10 will be enrolled in the following year if funding is approved.

References
