REB Form:

Complete Project Title:

Needs Analysis and Time Flow Study to Assess Endoscopic Ear Surgery

Short Title:

Needs Analysis for Endoscopic Ear Surgery

Lay Summary:

Endoscopic ear surgery is a new minimally invasive technique that differs from the traditional microscopic surgery due to differences in visibility and the need for one-handed surgery. This application seeks to shift current clinical practice in surgery for chronic middle ear disease by creating novel instrumentation that will facilitate the practice of endoscopic ear surgery by understanding surgeon’s needs. Practitioners of endoscopic ear surgery will be surveyed to reveal the barriers they face when adopting the technique, and that they continue to experience in endoscopic ear surgery. A comprehensive assessment of existing instruments, including surgeon surveys and intra- operative time-flow analysis, will be used to identify potential design limitations of currently available instruments. Innovative solutions to these barriers will be developed including on-line focus-group based discussions, concentrating on enhancing multi-functionality of instruments to be operated easily with one hand.

Objectives of the study:

The needs assessment will comprise two separate parts: (a) a time-flow analysis in the operating room of the PI and (b) a survey of endoscopic ear surgeons’ experience.

a) The time flow analysis will measure the duration of predetermined steps during the surgery as well as the number of changes between instruments. This will aim to measure the efficiency of current endoscopic ear surgery and provide areas where instrumentation redesign is required. The time flow analysis will be recorded by the MASc. student during ear surgery.

b) Survey.A qualitative assessment of the challenges in endoscopic ear surgery caused by limitations in current instrumentation will be completed by performing an on line survey of surgeons that perform endoscopic ear surgery. The Delphi method will be followed to analyze the qualitative results of the survey. A preliminary survey for local otolaryngologists will develop a questionnaire that will be sent to many otologists around the world and the answers will be analyzed to develop a third survey that will be sent out once again to the participants. This will attempt to develop a consensus of conclusions for the survey.

Inclusion criteria:

Time Flow Analysis:

Patient participants: -- 50 patients

Any patient undergoing middle ear surgery at Sick Kids or TGH for whom consent is received. Tympanoplasty (repair of ear drum perforation) and removal of cholesteatoma (skin growth with in the ear) are the principle cases of interest.

Surgeon participants:

Otolaryngologist with more than one year of experience with endoscopic ear surgery. Residents will not be included in this study as the speed of their surgery is influenced more by level of experience than instrument design. It would be inappropriate to put time pressure on their involvement.

Surgeon survey – 20 for survey development pragmatic sample size based on locally available surgeons and aim to recruit over a hundred participants for the final survey, in order to capture a wide range of opinions.

Otolaryngologist with any experience of ear surgery. Surgeons with and without experience of endoscopic ear surgery will be included to investigate how currently available instruments have influenced their uptake of endoscopic ear surgery. Residents will be invited to participate as their initial experience may provide valuable insight.

Survey will be conducted confidentially using surveymonkey or fluidsurveys

Email a consent form with the survey and explain that if they fill out the survey then it is implied that consent is given to publish results.

We will propose this consent form to the participants but it is not common practice to send a consent form with surveys. We will ask the REB if they will wave the requirement for the consent form for this case.

We will send the survey to otological societies such as the Canadian Society for Otolaryngology Head and Neck Surgery, the American Otological Society and the International Working Group on Endoscopic Ear Surgery.