

# **THE SUCCESS OF MINIMALLY INVASIVE PUNCH TECHNIQUE FOR PERCUTANEOUS BONE ANCHORED HEARING DEVICES – LONG TERM FOLLOW UP AND DIRECT COST ANALYSIS**

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## **OTOLARYNGOLOGY**

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**BACKGROUND:** Minimally Invasive Ponto Surgery (MIPS) is a newly described technique to facilitate the placement of percutaneous bone anchored hearing devices. The procedure has resulted in a simplification of the surgical steps and a dramatic reduction in surgical time while maintaining excellent patient outcomes. Our group sought to move the procedure out of the main operating suite. The longest follow-up data for a North American MIPS cohort was obtained.

**METHODS:** 20 operations (10 MIPS and 10 traditional linear incisions) were performed on adult patients from 2013-2016 by the same surgeon. A retrospective direct cost comparison considering time, staff and equipment needs of MIPS and open approaches for the implantation of bone conduction implants was conducted. Minimum follow-up period of 1 year in MIPS group assessing soft tissue reaction using the IPS scale, device success and patient satisfaction were recorded for the cohort.

**RESULTS:** MIPS had a mean reduction in cost of CAD\$456.83 per operation when compared to open approaches, largely due to a 61 minute reduction in operating time. Long term follow-up indicated zero fixture losses, subclinical soft tissue changes and minor complications (skin redundancy, abutment screw length) in the MIPS group. There was no difference in complication rate for MIPS performed outside the main OR. MIPS had improved patient satisfaction.

**CONCLUSION:** The MIPS technique was more cost effective than traditional open approaches with minimal complications despite this being a new technique and departure from conventional wisdom. This simple, quick intervention was found to be feasible and with proven safety based on long term outcomes with zero fixture losses.