Acoustic Measurement of the Eustachian Tube Function
Prototype Device for Testing the Eustachian Tube Function

Methods

We have created a prototype device for acoustic measurement of the Eustachian tube function. It has the following principle of work:

In the nasal cavity sound signal is transmitted (2 kHz 70 dB in the left and right nostril).[2,3] Then we ask the patient to swallow and the muscles of the soft palate constrict, which open the Eustachian tube. The sound signal is transmitted through the middle ear and then measured by microphones in the external ear canals. 25 healthy volunteers were tested.

Introduction

Under normal conditions the Eustachian tube opens in the act of swallowing or yawning [1]. In all the standard examination methods the change in the pressure in the epipharynx helps the opening of the Eustachian tube. [4]

Results

In our tests we have proven the normal function of the Eustachian tube.

Discussion / Conclusion

This is a physiological test and has a good chance to become routine method. However its sensitivity still has to be improved.

Reference

2. Einsatz neuer akustischer Signale zur Tubenfunksionsuntersuchung. Bd St Marthas, C.
3. Synchronous Endoscopy and Sonotubometry of the Eustachian Tube: A Pilot Study. Opin Horlaryntr, Dennis Hr, Robert MacRae, Otorinolaryngology

Dr. Georgi Kukushev & Colleagues
Military Medical Academy – Sofia
Bulgaria
gkukushev@gmail.com