

A Computer Program to Calculate the Size of Tympanic Membrane Perforation

徐建業

Hsu CY;Huang JH;Chen YS;Liu TC

Abstract

Chronic suppurative otitis media is characterized by the presence of a persistent perforation of the tympanic membrane. Accurate estimation of the perforation size is helpful in clinical management and research. In this study, a computer program was developed to calculate the percentage of a perforation relative to the whole tympanic membrane including the pars tensa and pars flaccida. In order to demonstrate the variability of estimations of perforation size by different surgeons, we calculated the percentage of perforation for four tympanic membranes, and compared the results with those estimated by five experienced otologists and 10 senior residents. The results show that the estimations from both otologists and residents departed from the values calculated by the computer program quite substantially. Beside, the variance of the estimation is large. However, the variances of computer calculation are quite small, which means that the results obtain from different users are quite consistent. Therefore, we concluded that this program is necessary and useful to evaluate the size of the perforation as the differences in visual estimations can be very big and the variances can be large for different individuals, even by experienced otologists.