The ciliary beat frequency of middle ear mucosa in children with chronic secretory otitis media.

Abstract:
The chronic secretory otitis media (CSOM) is a common disease in children. Its cardinal symptoms are recurrent middle ear effusions and conductive hearing loss. Until today, the pathophysiological mechanism of this disease remains unknown. The correlation with adenoids and tubal dysfunction during childhood seems to be obvious, but the origin of middle ear effusions still has to be clarified. It is known that the CSOM affects the mucociliary system in several ways. In order to find out more about these correlations, the ciliary beat frequency was examined in 123 samples of infantile middle ear mucosa suffering from CSOM. Samples were surveyed using a stroboscopic microscopy method. The results of this study showed a significant decrease of ciliary beat frequency (CBF) to an average of 7.4 s⁻¹ in children with a CSOM. The healthy group of control showed a frequency of 10.1 s⁻¹. The measured CBF dataset was correlated with microbiological findings. We found a typical bacterial profile in nearly all the cases that were examined but were unable to find a specific bacterium decreasing CBF. This study provides evidence for the diminution of CBF in cases of CSOM in comparison to a healthy control group. Our findings emphasize the importance of stopping the vicious circle of recurrent effusions by paracentesis or grommet insertion.

Zeitschriftentitel / Abkürzung:
Eur Arch Otorhinolaryngol