

POSTER 104

RELATIONSHIP BETWEEN OTITIS MEDIA AND TEMPORAL BONE PNEUMATIZATION

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Chronic otitis media, or middle ear inflammation, is correlated with reduced pneumatization of the temporal bone. It is unclear whether the chronic otitis media causes reductions in the size of the air cell system, or if the initial small size of the air cell system increases the risk of chronic otitis media. However, little is known about changes of the size of the air cell system across the lifespan of individuals without otitis media. The purpose of this study was to assess changes throughout in the lifespan of temporal bone pneumatization.

Micro-computed tomography scans were acquired of 29 temporal bones without evidence of chronic otitis media. The sample included individuals ranging in age from neonate to adult. Volumes of the air cell system within the temporal bone, excluding the ear structures, were calculated using Amira[®] software. Results indicate that the size of the air cell system doubles between 0 and 4 years of age. After this timepoint, the size increases more gradually, but the adult air cell system is nearly ten times the size seen in neonates. These results suggest that disturbances early in postnatal development, such as otitis media, may play a large role in the adult size of the pneumatized spaces.