Pneumatization and otitis media in Greenlandic Inuit before European colonization.

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Source: J Otolaryngol. 1995 Dec;24(6):330-5

Date: Dec-1995

Language: English

Publication Type: Article

Keywords: Archaeology
Bone Diseases - etiology - pathology
Female
Greenland
Humans
Inflammation - physiopathology
Inuits
Male
Otitis Media - complications
Research Support, Non-U.S. Gov't
Skull - pathology
Temporal Bone - pathology

Abstract: A total of 127 Greenlandic Inuit crania from before the European colonization of Greenland and deriving from the West (W), Southeast (SE), and Northeast (NE) coast of Greenland were examined for sequelae of infectious middle ear disease (IMED) and for a relationship between the size of the pneumatized cell area in the temporal bones and cranial morphology. IMED was inferred from the area size of the pneumatized cell system as seen on x-rays. The crania were classified into IMED or non-IMED by applying a statistical model on the distribution of areas. The model designated six crania (4.7%, 95% CI: 1.8-10.0%) as having had IMED, four from the W, one from the SE, and one from the NE. This is lower than the present frequency of IMED in Greenland. One cranium revealed pathology resembling that caused by chronic inflammation (e.g., from cholesteatoma or cancer). The area sizes differed significantly between sexes and between regions, as did some of the cranial measures. This indicated a relationship between cranial morphology and the area size. However, in a multiple regression analysis, cranial morphology only explained 5 to 7% (R2) of the variability in the areas.

PubMed ID: 8699597 View in PubMed