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**CLEFT LIP AND PALATE RECONSTRUCTIVE SURGERY: INFLUENCE ON DEVELOPMENT OF MASTOID BONE PNEUMATIZATION**

**Objectives:** To find out size of mastoid bone pneumatization (MBP) according to cleft lip and palate types of different severity and age subgroups, growing rate of MBP with aging, ear side dependence according to cleft side.

**Method:** Measurement and analysis of mastoid bone pneumatization size on x-ray pictures (made according to Schuler technique) performed plane metrically using pixels separately for left and right ears. Study group include 14 bilateral (BCLP), 58 unilateral cleft lip and palate (UCLP) and 74 children with isolated cleft palate (ICP) (all groups have median age of 6.0years) suffered of recurrent episodes of otitis media with effusion (OME). Control group included 52 non-cleft children suffered of recurrent episodes of OME (median age of 6.0yr). Comparison of size of MBP of left vs. right ears for different age groups performed in different cleft lip and palate types.

**Results:** Size of MBP for total group of tested cleft palate ears was (7.3cm<sup>2</sup>), that is significantly smaller than MBP for total group of OME ears (8.12cm<sup>2</sup>) (p=0.0018). MBP in OME ears (8.12cm<sup>2</sup>) was bigger than in separate cleft type ears: BCLP (6,5cm<sup>2</sup>, p=0.0042), UCLP (7.4cm<sup>2</sup>, p=0.0052) and ICP (7,2cm<sup>2</sup> p=0.0022). MBP in SOM ears showed faster rate of pneumatization growth (development) with aging (r=0.293, p=0.0035) than total group of cleft palate ears (r=0.174, p=0.003). Mastoid bone pneumatization in BCLP and UCLP have smallest MBP size which do not grow significantly with aging. MBP in isolated cleft palate have highest size if compared with other cleft types. This is only cleft type with significant growing of MBP with aging.

**Conclusion:** Cleft types with highest severity of structural defects bilateral and unilateral cleft lip and palate have smallest MBP, and no tendency of growth in size with aging. Ears of children of isolated cleft palate type showed higher size and growing rate of MBP with aging than. High severity and structural defects in BCLP and UCLP are accompanied with retardation of development and growth of MBP, what makes them of high risk for further frequent inflammations and reoccurrence of OME, that contributes to retardation or/and slower development of mastoid pneumatization.

**Biography**

Jadranka Handzic graduated in the year 1984 at Medical School University of Zagreb, Master degree in the year 1987 and PhD in the year 1989. Residential program of Otolaryngology finished in the year 1989. Sub-specialist of Audiology in 2003. From 2000-2001 spent academic year on Fulbright Scholarship at Cleft Palate-Craniofacial Centre and Dental School of Medicine, University of Pittsburgh and Children's Hospital Pittsburgh, U.S.A on position as Adjunct Associate Professor of Oral Medicine. From 2001-2002 she had Lester Hamburg-Research Fellowship in Department for Paediatric Otolaryngology Children's Hospital of Pittsburgh, Medical School University of Pittsburgh, U.S.A. From 2002 she was Assistant Professor of Otolaryngology and from 2008 Professor of Otolaryngology and Audiology.

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