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CONFERENCE PROGRAM

SATURDAY, APRIL 22, ALL DAY SESSIONS

Session 39

Dental Anthropology: Population variation and applications

Contributed Poster Presentations

Chair: Rebecca George

Tuscany D, E, F

- 1 Population-specific vs. pooled dental samples: an argument for more generalizable age estimation methods. L.E. CIRILLO.
- 2 Odontometric sexual dimorphism in a U.S. subadult sample. K.A. BROEHL, L.K. CORRON, E.Y. CHU, M.A. PILLOUD, K.E. STULL.
- 3 Central chimpanzees and bonobos exhibit more stress-related dental defects than eastern chimpanzees. J.N. CLARKE, J. ERKENS, S. MACCARON, M. WILLIAMS, E. GILISSEN, K. MCGRATH.
- 4 Canine crown sexual dimorphism in a sample of the modern Croatian population. J. DUMANCIC, G. SCOTT, S. ANIC MILOSEVIC, N. MEDANCIC, H. BRKIC.
- 5 Applicability of Malocclusion Scoring Within the John A. Williams Human Skeletal Collection. S.J. GALLAGHER, R.L. GEORGE.
- 6 Reassessment of accentuated striae counts in deciduous tooth enamel in two Ohio populations of disparate socioeconomic status. K.N. GURIAN, D. CREWS, S. HOLT, M. HUBBE, P. MAHONEY, G. MCFARLANE, A. NAVA, D. GUATELLI-STEINBERG.
- 7 Dental and genomic data in recent global population samples yield corresponding evidence for the Late Pleistocene population diffusion out of Africa. J.D. IRISH, A. MOREZ, L. GIRDLAND FLINK, G. SCOTT.
- 8 3D Analysis of Stress-Related Dental Defects in Neolithic Humans from Liguria, Italy. S. MACCARON, J. CLARKE, E. ORELLANA-GONZÁLEZ, I. DORI, V. SPARACELLO, K. MCGRATH.
- 9 Artificial neural networks to reconstruct missing perikymata in worn teeth. M. MODESTO-MATA, L. DE LA FUENTE VALENTÍN, L. HLUSKO, M. MARTÍNEZ DE PINILLOS, I. TOWLE, C. GARCÍA-CAMPOS, M. MARTINÓN-TORRES, J. BERMÚDEZ DE CASTRO.
- 10 Seasonality in the relationships between fluctuating asymmetry in deciduous teeth and environmental temperature during gestation. E. MOES, H. EDGAR.
- 11 Examining longitudinal patterns of facial size and shape in children with obesity. C.L. NICHOLAS, J. HEDGER, J. CAPLIN, M. GALANG-BOQUIREN, S. ALRAYYES, C. RATZ.
- 12 Global Variation in Fused Premolar and Molar Roots. A.J. PASTORE, G.R. SCOTT.
- 13 Investigating a novel location for assessing dental function and dietary signals at the dental root. Z.R. SIMS.
- 14 Sex estimation from dental crown and cervical metrics in modern global sample. E. SMITH, D. KENESSEY, T. VLEMINCQ-MENDIETA, M. PILLOUD.

Title: Canine crown sexual dimorphism in a sample of the modern Croatian population

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Sex assessment is a key part of forensic analysis to establish the identity of unknown deceased individuals. While skeletal sexual characteristics develop during puberty, development of permanent teeth takes place early in childhood and the influence of sex chromosomes is expressed in the sexual dimorphism of tooth crowns and roots. Previous studies have shown that canines are the most dimorphic teeth, but population-specific data are necessary for forensic methods. This study explores sex dimorphism in canine crown dimensions and morphology in a contemporary Croatian population. Hypothesis: both canine crown dimensions and morphology can be used for sex estimation.

The material consisted of 302 dental casts (147 females, 155 males) of orthodontic patients and dental students (11-25 years). Distal accessory ridge (DAR) of the upper and lower canines was evaluated using the Arizona State University Dental Anthropology System. Mesiodistal (MD) and buccolingual (BL) crown dimensions were measured on 120 casts.

Sex differences in MD and BL dimensions were significant ($p < 0.05$, Student t-test) for all the canines (upper and lower, left and right) while in DAR only for lower canines ($p < 0.000001$, Kruskal-Wallis tests). When all variables were put in model, backward stepwise discriminant function analysis isolated lower canine DAR and lower left canine MD as the two independent variables differentiating sex with an accuracy of 73.5%.

This study shows that both canine crown morphology and dimensions are useful for sex determination, especially for lower canines. These methods can be applied in children as lower canines erupt at about 9 years of age.

Keywords: Forensic Anthropology; Human; Dental Anthropology; Variation and Variability

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