The chronology of third molar root mineralization in south Indian population

Author: Maled, Venkatesh; Manjunatha, B; Patil, Karthikeya; Balaraj, B M

1Department of Forensic Medicine, SDM College of Medical Sciences & Hospital, Dharwad, Karnataka, India

Publication info: Medicine, science, and the law 54.1 (Jan 2014): 28-34.

Abstract (English): The aim of present study was to determine the chronology of third molar root mineralization and to establish south Indian reference data. Therefore, a cross-sectional study was undertaken by evaluating 192 intraoral periapical radiographs in order to assess the root mineralization status of the mandibular third molar of south Indian individuals (101 males and 91 females) between the age of 13 and 25. The evaluation was carried out using the seven-stage developmental scheme of Kullman et al. (1992). The range, mean age, standard deviation, Student t test and percentile distributions are presented for each stage of mineralization. Statistically significant differences between males and females were not found. All individuals from this study with mature third molar roots were at least 18 years of age. For medicolegal purposes, the likelihood of whether a south Indian individual is older than 18 years or not was determined.

MeSH: Adolescent; Adult; Age Determination by Teeth -- methods (major); Cross-Sectional Studies; Female; Forensic Dentistry; Humans; India; Male; Molar, Third -- growth & development (major); Reproducibility of Results; Tooth Calcification (major); Tooth Root -- growth & development (major); Young Adult

Journal classification: Index Medicus

Identifier (keyword): age estimation, forensic odontology, identification, radiography, root mineralization, south Indian, third molar

Correspondence author: Maled, Venkatesh Department of Forensic Medicine, SDM College of Medical Sciences & Hospital, Dharwad, Karnataka, India.

Language: English

Language of abstract: English

Document type: Journal Article

Publication title: Medicine, science, and the law

Volume: 54

Issue: 1

Pagination: 28-34

ISSN: 0025-8024, 0025-8024 (ISSNLinking)

Publication type: Journal
Analyses of odontometric sexual dimorphism and sex assessment accuracy on a large sample

Author: Angadi, Punnya V1; Hemani, S; Prabhu, Sudeendra; Acharya, Ashith B

1Department of Oral Pathology, K.L.E.V.K. Institute of Dental Sciences, Nehru Nagar, Belagavi (Belgaum) 590010, Karnataka, India


Abstract (English): Correct sex assessment of skeletonized human remains allows investigators to undertake a more focused search of missing persons' files to establish identity. Univariate and multivariate odontometric sex assessment has been explored in recent years on small sample sizes and have not used a test sample. Consequently, inconsistent results have been produced in terms of accuracy of sex allocation. This paper has derived data from a large sample of males and females, and applied logistic regression formulae on a test sample. Using a digital caliper, buccolingual and mesiodistal dimensions of all permanent teeth (except third molars) were measured on 600 dental casts (306 females, 294 males) of young adults (18-32 years), and the data subjected to univariate (independent samples' t-test) and multivariate statistics (stepwise logistic regression analysis, or LRA). The analyses revealed that canines were the most sexually dimorphic teeth followed by molars. All tooth variables were larger in males, with 51/56 (91.1%) being statistically larger (p <0.05). When the stepwise LRA formulae were applied to a test sample of 69 subjects (40 females, 29 males) of the same age range, allocation accuracy of 68.1% for the maxillary teeth, 73.9% for the mandibular teeth, and 71% for teeth of both jaws combined, were obtained. The high univariate sexual dimorphism observed herein contrasts with some reports of low, and sometimes reverse, sexual dimorphism (the phenomenon of female tooth dimensions being larger than males'); the LRA
results, too, are in contradiction to a previous report of virtually 100% sex allocation for a small heterogeneous sample. These reflect the importance of using a large sample to quantify sexual dimorphism in tooth dimensions and the application of the derived formulae on a test dataset to ascertain accuracy which, at best, is moderate in nature.

MeSH: Adolescent; Adult; Cuspid -- anatomy & histology; Dental Models; Dentition, Permanent (major); Female; Forensic Dentistry; Humans; Logistic Models; Male; Molar -- anatomy & histology; Observer Variation; Odontometry (major); Sex Characteristics (major); Young Adult

Journal classification: Index Medicus

Identifier (keyword): Buccolingual, India, Logistic regression analysis, Mesiodistal, Odontometry, Sex determination

Correspondence author: Angadi, Punnya V Department of Oral Pathology, K.L.E.V.K. Institute of Dental Sciences, Nehru Nagar, Belagavi (Belgaum) 590010, Karnataka, India.

Language: English
Language of abstract: English
Document type: Journal Article
Publication title: Journal of forensic and legal medicine
Volume: 20
Issue: 6
Pagination: 673-7
ISSN: 1752-928X (ISSNLinking)
Electronic ISSN: 1878-7487
Publication type: Journal
Journal code: 101300022
Publisher location: ENGLAND
Notes: Publication model: Print-Electronic;; Cited medium: Internet
DOI: http://dx.doi.org/10.1016/j.jflm.2013.03.040
PII: S1752-928X(13)00092-9
Publication date: Aug 2013
Date created: 2013-08-05
Date completed: 2014-03-26
Medline document status: MEDLINE
Demonstration of ethyl glucuronide in dental tissue samples by liquid chromatography/electrospray tandem mass spectrometry

Author: Zeren, Cem1; Keten, Alper; Çelik, Salih; Damlar, Ibrahim; Daglioglu, Nebile; Çeliker, Adnan; Karaarslan, Bekir

1Mustafa Kemal University, Medical Faculty, Department of Forensic Medicine, Hatay, Turkey


Abstract (English): INTRODUCTION

Ethyl glucuronide (EtG) has been studied in various tissues and body fluid for determination of alcohol intake. However, no study, dealing with EtG analysis in dental tissue, was performed so far. In this study, we aimed to demonstrate EtG levels in dental tissue.

MATERIALS AND METHODS

Michigan Alcohol Screening Test (MAST) was performed to 29 participants. Following the test, cases were divided into three groups as non-hazardous alcohol users, alcohol abusers and 6 controls who verbally declared that they were abstainers. A total of 29 tooth specimens, obtained from participants, was included in the study. These specimens were analyzed using LC/MS/MS.

RESULTS

All of the participants included in the study were male. According to the MAST outcomes 14 of the participants were non-hazardous alcohol users, and 9 were alcohol abusers, while 6 patients verbally declared that they were abstainers. Dental tissue analyses revealed EtG levels ranging between EtG<LOD and 23.39 pg/mg. EtG levels were observed to be <LOD in dental specimens of 6 abstainer cases. A significant correlation was found between EtG levels measured in the dental tissues and MAST outcomes on the statistical analyses (r=0.914).

CONCLUSION
The findings of the present study demonstrated that dental tissue can be used for detection of alcohol intake, using LC/MS/MS.

MeSH: Adult; Alcohol Drinking; Alcoholism -- diagnosis; Case-Control Studies; Chromatography, Liquid; Forensic Dentistry; Glucuronates -- analysis (major); Humans; Limit of Detection; Male; Middle Aged; Tandem Mass Spectrometry; Tooth -- chemistry (major); Tooth Extraction (major)

Journal classification: Index Medicus

Substance: Substance: Glucuronates; CAS: 0;
Substance: ethyl glucuronide; CAS: 17685-04-0;
Identifier (keyword): Alcohol intake, Dental tissue, Ethyl glucuronide, LC/MS/MS

Correspondence author: Zeren, Cem Mustafa Kemal University, Medical Faculty, Department of Forensic Medicine, Hatay, Turkey.

Language: English

Language of abstract: English

Document type: Journal Article, Validation Studies

Publication title: Journal of forensic and legal medicine

Volume: 20

Issue: 6

Pagination: 706-10

ISSN: 1752-928X (ISSNLinking)

Electronic ISSN: 1878-7487

Publication type: Journal

Journal code: 101300022

Publisher location: ENGLAND

Notes: Publication model: Print-Electronic;; Cited medium:Internet

DOI: http://dx.doi.org/10.1016/j.jflm.2013.03.033

PII: S1752-928X(13)00085-1

Publication date: Aug 2013

Date created: 2013-08-05

Date completed: 2014-03-26

Medline document status: MEDLINE
Identifying sexual dimorphism in a paediatric South Indian population using stepwise discriminant function analysis

Author: Shankar, S1; Anuthama, Krishnamurthy; Kruthika, M; Kumar, V Suresh; Ramesh, K; Jaheerdeen, A; Yasin, M Mohamed

1Department of Public Health Dentistry, KSR Institute of Dental Science and Research, KSR Kalvi Nagar, Thokkavadi (PO), Tiruchengode 637215, Tamilnadu, India. shankar_haq@rediffmail.com


Abstract (English): Anthropological research relies on skeletal and dental remains for the identification of species. Sexual dimorphism is the systematic difference in form between males and females of the same species. This study is designed to compute a new formula for sex determination using discriminant function analysis in the deciduous crown dimensions of a paediatric population of South Indian origin and to check its accuracy. The sample consisted of 93 females and 90 males of South Indian origin aged between 5 and 13 years. Alginate impressions of the upper dental arch were made and casts were poured immediately. A digital vernier calliper was used to obtain measurements. Teeth considered for measurement were deciduous maxillary canines and molars. Our study is a maiden attempt in considering diagonal measurements along with mesiodistal (MD) and buccolingual (BL) dimensions as predictor variables for sex determination. Statistical analysis was performed using the Statistical Package for the Social Science version 17.0 software. By using the Student t-test, the different predictor variables of teeth selected between male and females were found to be significant (p <0.05). Highly significant sexual dimorphism was found in the mean MD dimension of maxillary right canine and right and left first molar, BL dimension of right first molar, distobuccal-mesiolingual of right and left first molar and right second molar and mesiobuccal-distolingual of right second molar. The percentage of sexual dimorphism in MD dimensions revealed that the right upper first molar was the most dimorphic tooth and the upper first molar of the left side was the least dimorphic of the six teeth studied. The present study found the level of sexual dimorphism in the deciduous crown dimensions of a selected group of South Indian population, which is sufficiently large to determine sex with an accuracy of 87.2-88% by discriminant function analysis. Hence the formula derived from the present study could be of some value in sex determination of paediatric populations of South Indian origin.
Dental age estimation among female commercial sex workers in Goa

Author: Prabhu, Rachana V1; Satoskar, Sujata; Dinkar, Ajit D; Prabhu, Vishnudas Dinesh

1Department of Oral Medicine and Radiology, Yenepoya Dental College, Yenepoya University, Mangalore, Karnataka, India. drrachanaacharya@rediffmail.com


Abstract (English): INTRODUCTION

Age estimation is a sub-discipline of the forensic sciences and an important part of every identification process, especially when information relating to the deceased is unavailable. In India, close to 3.5 million women work as commercial sex workers (CSW) of which 1.2 million are under aged.

AIM

To assess the dental and the skeletal age of rescued female CSWs with an intention of rehabilitation of the minors.

METHODOLOGY

Dental age assessment of 32 rescued female CSWs with unknown age was done based on the radiographic analysis using regression equations derived in a Qualitative and Quantitative study by Dinkar A D. The skeletal age was assessed based on physical and radiological examination of the skeletal bones by Forensic experts.

RESULT

It was observed that the estimated age of the CSWs ranged from 7 to 22 years out of which 22 cases (68.75%) were found to be below 18 years. When the dental and skeletal age was compared the maximum variation ranged between ±12 months (1 year). Although the CSWs were found to be from different parts of India, maximum number of the cases (50%) was from Andhra Pradesh and one case (3.13%) was from Nepal.

CONCLUSION
Dental age assessment using qualitative and quantitative method given by Dinkar A D can be thought of a reliable method for dental age assessment as it didn't show much variation when compared to the skeletal age of the 32 CSWs. In the present study 68.75% of the females were minor which shows that the number of minors being trapped in the trade of prostitution is increasing. Rescuing and rehabilitation of these minors is of paramount importance.

MeSH: Adolescent; Age Determination by Skeleton -- methods; Age Determination by Teeth -- methods (major); Bone and Bones -- radiography; Child; Female; Forensic Dentistry; Humans; India; Osteogenesis; Radiography, Panoramic; Regression Analysis; Sex Workers (major); Tooth -- radiography (major); Tooth Apex -- radiography; Tooth Calcification (major); Young Adult

Journal classification: Index Medicus

Identifier (keyword): Dental age, Female CSW, Minor, Skeletal age

Correspondence author: Prabhu, Rachana V Department of Oral Medicine and Radiology, Yenepoya Dental College, Yenepoya University, Mangalore, Karnataka, India. drrachanaacharya@rediffmail.com.

Language: English

Language of abstract: English

Document type: Journal Article

Publication title: Journal of forensic and legal medicine

Volume: 20

Issue: 6

Pagination: 788-91

ISSN: 1752-928X (ISSNLinking)

Electronic ISSN: 1878-7487

Publication type: Journal

Journal code: 101300022

Publisher location: ENGLAND

Notes: Publication model: Print-Electronic;; Cited medium:Internet

DOI: http://dx.doi.org/10.1016/j.jflm.2013.06.004

PII: S1752-928X(13)00166-2

Publication date: Aug 2013

Date created: 2013-08-05

Date completed: 2014-03-26
Managing the untoward anesthetic event in an oral and maxillofacial surgery practice

Author: Kaltman, Steven I; Ragan, Michael; Borges, Osbel

1Department of Oral and Maxillofacial Surgery, College of Dental Medicine, Nova Southeastern University, 3200 South University Drive, Fort Lauderdale, FL 33328, USA. skaltman@nova.edu


Abstract (English): The safe and efficient use of outpatient surgical anesthesia modalities is a significant part of the training and expertise of the oral and maxillofacial surgeon. Although adverse outcomes are rare, they can have considerable traumatic psychological and professional consequences for the surgeon involved. The goal of this article is to develop guidelines to educate the doctor, the second victim, on how to manage a bad outcome and how to navigate through a difficult and arduous process.

MeSH: Anesthesia, Dental -- adverse effects (major); Anesthesiology -- education; Anesthesiology -- legislation &jurisprudence; Anesthetics -- administration &dosage (major); Anesthetics -- adverse effects; Attitude of Health Personnel; Certification; Clinical Protocols; Dentists -- psychology; Documentation; Emergency Service, Hospital; Emergency Treatment -- methods; Forensic Dentistry - - legislation &jurisprudence; Humans; Informed Consent; Insurance, Liability -- legislation &jurisprudence; Lawyers; Liability, Legal; Medical History Taking; Medication Errors (major); Oral Surgical Procedures (major) -- legislation &jurisprudence; Stress, Psychological -- psychology; Surgery, Oral -- education; Surgery, Oral -- legislation &jurisprudence; United States

Journal classification: Dental Journals;Index Medicus

Substance: Substance: Anesthetics; CAS: 0;

Identifier (keyword): Anesthesia certification, Apology, Emergency medicine protocol, Professional liability, Second victim, Untoward anesthesia event