



Programme & Abstract Book

17th International Congress of Dentomaxillofacial Radiology

Imaging in Perspective

June 28-July 2, 2009

Amsterdam, The Netherlands



MONDAY 29 JUNE 2009

Mo.F3 - Imaging 3: CBCT

Sessions chairmen: Ernest Lam, Canada and Shunpei Murakami, Japan

Room Forum
13.30-15.00

13.30 - 14.30 William Scarfe, USA

CBCT in perspective: Emerging trends and practices in oral and maxillofacial imaging

InvZ

14.30 - 14.45 Jonathan Davies

Dosimetry from small volume cone beam CT of the posterior molar teeth

O-10

14.45 - 15.00 Raphael Olaszewski

Three-dimensional cephalometric planar analysis: quest for hidden proportions of the face and skull

O-11

15.00-15.30 break

Mo.F4 - Research Award

Sessions chairmen: Sharon Brooks, USA and Guiliana Scif, Brazil

Room Forum
15.30-17.00

15.30 - 15.45 Linda Parrott

A comparison between blewing radiographs taken with rectangular and circular collimators in UK military dental practice: a retrospective study

O-12

15.45 - 16.00 Livia dos Santos Corras

Peri-implant bone tissue assessment during osseointegration by comparing the outcome of 6 radiographic analysis methods to the histological standard.

O-13

16.00 - 16.15 Kaly Kabenge

The prevalence of lymphoepithelial cysts and the diagnostic ultrasound patterns of parotid glands in HIV positive patients in Mulago, Uganda

O-14

16.15 - 16.30 Jongdee Kamburton

Assessment of vertical root fractures using three imaging modalities: cone beam computed tomography, intraoral digital radiography and film

O-15

16.30 - 16.45 Peter Mah

Deriving hounsfield units using gray levels in CBCT

O-16

16.45 - 17.00 Ruben Pauwels

Image analysis of a quality assurance phantom for cone beam CT

O-17

18.00-19.00 Reception City Council of Amsterdam

Mo.I3 - Diagnostics 2: others

Sessions chairmen: Jacky Brown, UK and Csaba Dobó-Nagy, Hungary

Room L
13.30-15.00

13.30 - 13.45 Ezoddini Ardekani

Evaluation of the relationship between pulp stones and cardiovascular diseases (CVD)

O-30

13.45 - 14.00 Minas Levantis

Radiological evaluation of cystic lesions of the jaws in children

O-31

14.00 - 14.15 Naoya Kakimoto

Contrast enhanced multidetector CT examinations for cysts or cyst-like lesions of the jaws

O-32

14.15 -14.30 Saikat Shah

Primitive neuroectodermal tumor of maxillary sinus in an elderly male

O-33

14.30 - 14.45 Paraskev Telona

The role of 3D-CT in evaluating the treatment of giant cell granulomas of the jaws in children

O-34

14.45 - 15.00 Fahmi Oscandar

Sublingival calculus and alveolar bone height in cigarette and kreteks smokers Assessed by Digital Panoramic

O-35

Mo.I4 - Diagnostics 3: TMJ

Sessions chairmen: Lars Hollender, USA and Arne Petersson, Sweden

Room L
15.30-17.00

15.30 - 15.45 Arne Petersson

Relationship between clinical and magnetic resonance imaging diagnoses and findings in temporomandibular joint diseases. A systematic literature review.

O-36

15.45 - 16.00 Magdalena Marinescu Gava

MRI findings in temporomandibular joints of children suspected of juvenile rheumatoid arthritis

O-37

16.00 - 16.15 Enad Khan

Assessment of the relationship of disc position to disc configuration in TMJ internal derangement by using magnetic resonance imaging

O-38

16.15 - 16.30 Tore Arne Larheim

TMJ: MR classification of internal derangement

O-39

16.30 - 16.45 Bjørn Bamse Mørk-Knutzen

Subchondral cysts in a group of patients with temporomandibular joint osteoarthritis

O-40

16.45 - 17.00 Linda Arvidsson

Temporomandibular joint involvement and craniofacial morphology in 60 adult patients with juvenile idiopathic arthritis

O-41

O-10

Dosimetry from small volume cone beam CT of the posterior molar teeth

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Aim

The purpose of the study was to calculate the effective dose delivered to patients undergoing small volume cone beam computed tomography (CBCT) using the Accutomo 3DX FPD of the posterior molar teeth. The effective dose was calculated using both the 4 cm and 6 cm field of views.

Method

A Rando phantom containing thermoluminescent dosimeters located in 24 anatomical sites was scanned 10 times to enable a sufficient radiation absorbed dose to be recorded. Imaging protocols included a single scout view and 4 cm and 6 cm scans of the maxillary molars and 4 cm and 6 cm scans of the mandibular molars using standard patient positioning protocols.

Effective doses were calculated using both the 1990 and 2007 International Commission on Radiological Protection (ICRP) recommended tissue weighting factors.

Results

Effective dose varied between the mandibular and maxillary scans dependent on the volume of tissue irradiated and those radiation sensitive tissues in the field of view. The lowest effective dose was related to the 4 cm volume of the maxillary teeth and the highest dose related to the 6cm volume scan of the mandibular teeth

Field of view	µSv (ICRP 60, 1990)	µSv (ICRP 103, 2007)
4 cm maxilla	4.29	22.15
4 cm mandible	11.76	50.08
6 cm maxilla	9.88	59.97
6 cm mandible	23.02	121.17

Conclusion

This study has confirmed the smallest field of view should be used to image the region of interest and thus delivers the lowest effective dose to the patient. Larger field sizes should only be used when clinically justified.

O-11

Three-dimensional cephalometric planar analysis: quest for hidden proportions of the face and skull

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Introduction

The development of three-dimensional cephalometry is essential for computer-assisted planning in orthognathic surgery and for computer-assisted orthodontics.

Objectives

We present a newly developed and validated three-dimensional (3D) cephalometric planar analysis and software (ACRO 3D).

Materials and methods

The analysis is composed of 19 landmarks and 13 planes. All landmarks are chosen on 3D low dose CT surface renderings. The planes are automatically constructed in ACRO 3D software. We propose three cranial planes (C1-C3), nine craniofacial planes (F1-F8, chin plane) and introduction of proportions to define the 3D cranial and 3D craniofacial reference frames. The sagittal plane is constructed on lateral landmarks belonging to the trigeminal and optic foramina. The user must compare anatomic structures with a constructed, planar 3D reference frame. The alignment (or lack thereof) of different structures along planes is indicative of the type of dysmorphosis present in the craniofacial skeleton. The planar reference frame illustrates the best 3D position for the maxilla and mandible in relation to individual craniofacial characteristics. We received the approval of the local ethical commission for the clinical validation of the 3D cephalometric analysis.

Results

We illustrate the use of the 3D cephalometric analysis based on clinical examples.

Conclusions and discussion

Three-dimensional cephalometric planar analysis based on individual characteristics and general proportions can help orthognathic surgeons in diagnostic, planning and correcting complex asymmetric faces in the three dimensions.