



Main Sponsors

Dr. Loupos Costa

65 ANOS
1943 2008

IMAGIOLOGIA CLÍNICA



C.D.I.
Clínica Dentária Integrada
Dr. Raul Vaz de Carvalho



I INTERNATIONAL CONFERENCE ON BIODENTAL ENGINEERING

26 and 27 of June 2009
Porto, Portugal

Book of Abstracts

Official Carrier



Media Partner



FCT

Fundação para a Ciência e a Tecnologia
MINISTÉRIO DA CIÊNCIA, TECNOLOGIA E ENSINO SUPERIOR



Main Sponsors



I INTERNATIONAL CONFERENCE ON BIODENTAL ENGINEERING

26 and 27 of June 2009, Porto, Portugal

// Home

// Brokerage Biodental
Engineering 2009

// Objectives

// Themes

// Travel Arrangement

// Dates

// Organizing Committee

// Scientific Committee

// Academic Institutions

// Registration

// Authors

// Exhibitors

// Sponsors

// News

// Social Activities

SCIENTIFIC COMMITTEE:

University of Porto

Faculty of Dentistry

Fernando Morais Branco
Afonso Pinhão Ferreira
António Felino
Mário Jorge Silva
Reis Campos
Mendes
Helena Figueiral
José Lordelo
Vieira
Mário Vasconcelos
Manuel Paulo
Sampaio Fernandes
Paulo Melo
João Carlos Pinho
André Correia

Faculty of Engineering

Renato M. Natal Jorge
João Manuel R. S. Tavares
Mário Augusto Vaz
António Torres Marques
Joaquim Gabriel M.

Marco P. Lages Parente
António M. R. Aguiar

Other Institutions

Alberto De Santis, Università degli Studi di Roma, Itália
Amaya Pérez, University of Zaragoza, Spain
António Vasconcelos Tavares, Universidade de Lisboa, Portugal
Begoña Calvo Calzada, University of Zaragoza, Spain
Brian Walker, Advanced Technology & Research Group, Arup, UK
Cláudia Barros machado, CESPU, Portugal
Cornelia Kober, Hamburg University of Applied Sciences, Germany
Daniela Iacoviello, Sapienza University of Rome, Italy
Dinggang Shen, University of Pennsylvania, USA
Eduardo Pires, Universidade Católica Portuguesa, Portugal
Elza Maria Morais Fonseca, Instituto Politécnico de Bragança, Portugal
Estefânia Peña Baquedano, University of Zaragoza, Spain
Estevam Las Casas, Universidade Federal de Minas Gerais, Brazil
Fernanda Gentil, IDMEC - FEUP, Portugal
Fernando Alberto Deométrio R. Alves Guerra, University of Coimbra, Portugal
Gerhard A. Holzapfel, Graz University of Technology, Austria
Giuseppe Cevola, Politecnico di Milano, Itália
Hernani Miguel Reis Lopes, Instituto Politécnico de Bragança, Portugal
Ioannis Misirlis, University of Patras, Greece
Jean-Daniel Orthlieb, Université De La Méditerranée, France
João Batista Novaes Júnior, Universidade Federal de Minas Gerais, Brazil
João Caramês, Universidade de Lisboa, Portugal
João Eduardo P. C. Ribeiro, Instituto Politécnico de Bragança, Portugal
João Paulo Flores Fernandes, University of Minho, Portugal
Joaquim Merino, CESPU, Portugal
John Middleton, Cardiff University, UK
John W. Nicholson, University of Greenwich, UK
Jorge Julião, Universidade Católica Portuguesa, Portugal
José Antonio de Oliveira Simões, University of Aveiro, Portugal
Jose M. Garcia Aznar, University of Zaragoza, Spain
Josep Torrent, Universitat de Barcelona, Spain
Kazem Alemzadeh, University of Bristol, UK
Leopoldo Forner Navarro, Universitat de València, Spain
Lídia Carvalho, CESPU, Portugal
Luís Pires Lopes, Universidade de Lisboa, Portugal
M. Casimiro Milheiro, Dr. Campos Costa Imagiologia Clínica, Portugal
Manuel Doblaré, University of Zaragoza, Spain
Marcos Pinotti Barbosa, Universidade Federal de Minas Gerais, Brazil
Maria Cristina Manzanares Céspedes, Universitat de Barcelona, Spain
Mário Forjaz Secca, Universidade Nova de Lisboa, Portugal
Michihiko KOSEKI, Tokyo Institute of Technology, Japan
Mildred Ballin Hecke, Universidade Federal do Paraná, Brasil
Nuno Rilo, University of Coimbra, Portugal
Oliver Röhrle, University of Stuttgart, Germany
Pablo Jesús Rodríguez Cervantes, Universitat Jaume I, Spain
Paulo Alexandre Gonçalves Piloto, Instituto Politécnico de Bragança, Portugal
Paulo Rui Fernandes, Instituto Superior Técnico, Portugal
Pedro Miguel Gomes Nicolau, University of Coimbra, Portugal
Philippe G. Young, University of Exeter, UK
Raul Vaz de Carvalho (CDI), dental practice, Portugal
Roberto Maciel (CDI), Scientific consultant, Portugal
Roberto Marcio de Andrade, Universidade Federal de Minas Gerais, Brazil
Rudolf Huebner, Universidade Federal de Minas Gerais, Brazil
Stephen Richmond, Cardiff University, UK
Yongjie (Jessica) Zhang, Carnegie Mellon University, USA

Official Carrier



Media Partner



Sponsors

Strategic Partners



The thickness of the cortical bone in different maxillaries using medical images

¹E.M.M. FONSECA, ²M.J.LIMA, ³J.K. Noronha, ⁴M.A.P. Vaz

¹CENUME - IDMEC, Polo FEUP. *Email:* efonseca@ipb.pt

^{1,2}Instituto Politécnico de Bragança, Bragança, Portugal

³Dr. Krug de Noronha, Porto, Portugal

⁴Faculdade de Engenharia da Universidade do Porto, Porto, Portugal

Abstract

The aim of the present study was to investigate whether there is a relationship between the thicknesses of the cortical bone of mandible human and the age and the sex of patient. In this work the measure of the cortical bone thickness was obtained in different computed tomography (CT) dental of medical images. Different human mandibles were scanned using high resolution micro-CT instrument in which many axial slices were obtained, see figure 1. Pixel by pixel for each slice and using image control system software, different layers were measured. A total of four medical images were studied and observed. Two different groups were characterized. The first one, with two female mandibles (F): an old and a young patient. The second group of two males mandibles (M), with similar age. A comparison between the male and female sex was also obtained. The cortical bone thickness of the mandible may be affected by tooth extraction, age and sex patient. The use of this type of information is useful for complementary diagnostic information and treatment planning.

Key words: mandibles, maxillaries, cortical bone, CT.

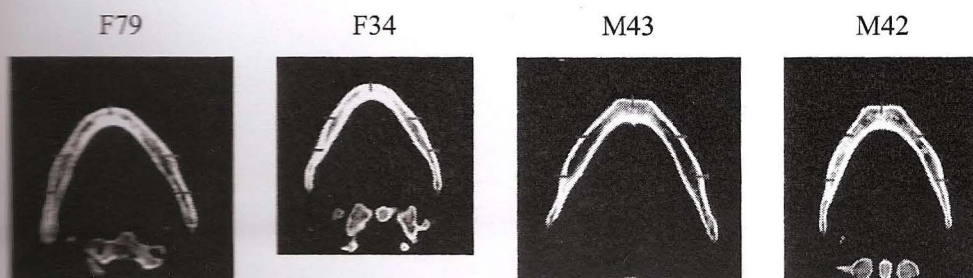


Fig. 1 - 2D scans of mandibles and points for measure the cortical bone.

References

Natali A. N., "Dental biomechanics", Taylor & Francis, 2003.

Polat P., Ceylan G., Suma S., Yanikoglu N., "The effects of tooth extraction on cortical thickness and bone mineral density of the mandible: evaluation with computerized tomography", Turk J Med Sci 31, pp.271-274, 2001.