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CURRICULUM VITAE

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CHILDREN: Daughter Sydney Alexis

Daughter Shannon Meredith

EDUCATION:

High School

Rockhurst High School

Kansas City, Missouri **1965-1966**

Kodaikanal High School

Kodaikanal, Tamilnadu, South India **1966-1967**

Viewmont High School

Bountiful, Utah **1967-1969**

Diploma **1969**

Undergraduate

University of Utah

Salt Lake City, Utah **1969-1972**

Weber State College

Ogden, Utah **1970**

Professional
School of Dentistry
University of California at San Francisco

San Francisco, California **1972-1976**

Doctor of Dental Surgery **1976**

Internship

Division of Oral Medicine
Department of Oral Biology
School of Dentistry
University of California at San Francisco

San Francisco, California **1975-1976**

Residency

Anatomic Pathology
University of Alabama Hospitals and Clinics
Birmingham, Alabama 1976-1977
Certificate in Anatomic Pathology 1977

Chief Resident
Oral and Maxillofacial Pathology
School of Dentistry
University of Alabama at Birmingham
Birmingham, Alabama 1977-1978
Certificate in Oral and Maxillofacial Pathology 1978

Postgraduate

NIDR/NIH post-doctoral fellow
Institute of Dental Research
School of Dentistry and Graduate School
University of Alabama at Birmingham
Birmingham, Alabama 1977-1981
Doctor of Philosophy (Experimental Pathology) 1986
Numerous sponsored continuing education programs (specific titles on request), in addition to scholarly growth and development through attendance at the annual scientific sessions of the American and International Associations for Dental Research, American Academy of Oral and Maxillofacial Pathology, American Dental Association, American Dental Education Association and other national and international scientific and educational organizations.

HONORS:

Viewmont High School

cum laude graduate

University of Utah

Honors Program
Phi Eta Sigma

School of Dentistry, University of California at San Francisco

Western Interstate Commission on Higher Education (W.I.C.H.E.) scholar (State of Utah)

President's Scholar
Regents' Scholar
Who's Who Among Students in American Universities and Colleges
Associated Dental Students Recognition Award
Honors Program
cum laude graduate
graduating G.P.A. of 3.69 on a 4.00 scale
7th of 86 students in cumulative G.P.A.
1st of 86 students in total clinical accomplishments
Dean's Citation Award
Milton F. and Mary L. Gabbs Award (highest award given by the School of Dentistry)
California Dental Association Award
American Academy of Oral Medicine Award
American Academy of Oral and Maxillofacial Pathology Award
Fifth Quarter Senior Recognition Award
Omicron Kappa Upsilon
Commencement speaker
Medal of Honor (2009) (highest award given by the Alumni Association)

School of Dentistry, University of Alabama at Birmingham

Outstanding Instructor Award

University of Texas Dental Branch

Citation, Who's Who in Frontiers of Science and Technology
Golden Pen Award, International College of Dentists
Fellow, International College of Dentists
Citation, American Men and Women of Science
Fellow, Pierre Fauchard Academy
Fellow, American College of Dentists
Dean's Teaching Excellence Award

College of Dentistry, University of Tennessee

Imhotep Society
Citation, Who's Who in Dentistry
Richard Doggett Dean and Marguerite Taylor Dean Honorary Odontological Society
Sigma Xi
Citation, Who’s Who in the World
Citation, Who’s Who in America
Citation, Who’s Who in Science and Engineering
Citation, Who’s Who in Medicine and Healthcare
Nominee, Academy of Distinguished Teachers
Nominee, Student Government Association Executive Council Excellence in Teaching Award

Marquette University School of Dentistry

Citation, Guide to America's Top Dentists
Consumers' Research Council of America
Media Relations Award, Wisconsin Dental Association
Citation, American Men and Women of Science

MILITARY SERVICE: None

SPECIALITY CERTIFICATION:

Fellow, American Academy of Oral and Maxillofacial Pathology **1987**

LICENSURE:

State of California	(No. 25821)	(by examination)	1976
State of Alabama	(No. 3303)	(by examination)	1976
State of Texas	(No. UTH-122X)	(institutional)	1981
State of Texas	(No. 13911)	(by examination)	1983
State of Tennessee	(No. DS-6994)	(institutional)	1994
State of Wisconsin	(No. 55-875)	(institutional)	2005

SPECIALITY LICENSURE:

Oral and Maxillofacial Pathology

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SOCIETY MEMBERSHIPS:Professional
Psi Omega
Omicron Kappa Upsilon
American Academy of Oral and Maxillofacial Pathology
Memphis Dental Legion (1993-2002)

Greater Milwaukee Dental Association
Wisconsin Dental Association

American Dental Association
Pierre Fauchard Academy
American College of Dentists
International College of Dentists
The Dental Forum of Milwaukee
Milwaukee Odontological Academy

Scientific
American Association for Dental Research
International Association for Dental Research
Sigma Xi
American Association for the Advancement of Science

Academic
Phi Eta Sigma

Educational
Alumni Association, University of Utah
Alumni Association, University of Alabama at Birmingham
Alumni Association, University of California at San Francisco
American Dental Education Association

The Imhotep Society
The Brendan Society

Social
Sigma Pi
MENSA

UNIVERSITY APPOINTMENTS:

Assistant Professor
Department of Oral Diagnostic Sciences
University of Texas Dental Branch

Houston, Texas **1981-1988**

Associate Dean for Academic Affairs
University of Texas Dental Branch
Houston, Texas 1987-1989

Associate Professor (with tenure)
Department of Oral Diagnostic Sciences
University of Texas Dental Branch
Houston, Texas 1988-1993

Executive Associate Dean
University of Texas Dental Branch
Houston, Texas 1989-1992

Executive Associate Dean
College of Dentistry
University of Tennessee
Memphis, Tennessee 1993-1997

Professor (with tenure)
Department of Biologic and Diagnostic Sciences
College of Dentistry
University of Tennessee
Memphis, Tennessee 1993-2002

Professor
Division of Dermatology
Department of Medicine

College of Medicine
University of Tennessee
Memphis, Tennessee 1994-2002

Professor
College of Graduate Health Sciences
University of Tennessee
Memphis, Tennessee 1998-2002

Adjunct Professor
Department of Dental Hygiene
College of Science, Mathematics and Technology
Eastern Washington University
Spokane, Washington 2001-Present

UNIVERSITY APPOINTMENTS: (continued)

Associate Dean for Academic Affairs
School of Dentistry
Marquette University
Milwaukee, Wisconsin 2002-Present

Professor (with tenure)
Department of Surgical Sciences
School of Dentistry
Marquette University
Milwaukee, Wisconsin 2002-Present

Professor
Department of Dermatology
Medical College of Wisconsin 2002-Present

HOSPITAL APPOINTMENTS:

Ben Taub General Hospital (consulting staff)	**1983-1993**
Hermann Hospital (consulting staff)	1983-1993
The Methodist Hospital (consulting staff)	1983-1993
Texas Children's Hospital (courtesy staff)	1983-1993
St. Luke's Episcopal Hospital (consulting staff)	1983-1992
Park Plaza Hospital (consulting staff)	1983-1993
Veterans Administration Hospital (consulting staff)	1983-1993
Institute for Immunologic Disorders (consulting staff)	1987-1989

OTHER APPOINTMENTS:

Adjunct Assistant Professor
Department of Pathology and Laboratory Medicine
College of Medicine
Texas A&M University
College Station, Texas 1982-1987

Adjunct Assistant Professor

Department of Community Medicine
Baylor College of Medicine
Houston, Texas 1982-1987

Consultant in Forensic Odontology
Houston Police Department
Houston, Texas 1982-1988

Consultant in Forensic Odontology
Harris County District Attorney's Office
Houston, Texas 1982-1988

Adjunct Associate Professor
Department of Pathology and Laboratory Medicine
College of Medicine
Texas A&M University
College Station, Texas 1987-1993

Adjunct Associate Professor
Department of Community Medicine
Baylor College of Medicine
Houston, Texas 1987-1993

TEACHING EXPERIENCE:

School of Dentistry, University of Alabama at Birmingham

General, Systemic and Oral Pathology (Dental Hygiene Program) 1976-1981
General, Systemic and Oral Pathology (Dental Assisting Program) 1976-1981

Course Director **1977-1981**

University of Texas Dental Branch

Human Biology-16 (Endocrinology) 1981-1986
Applied Biology and Diagnosis-10 (Oral Pathology) 1981-1987
Cell and Tissue Biology-7 (General Pathology) 1981-1987

Course Director **1986-1987**
DA-73 (Oral Pathology) 1981-1987

Course Director **1986-1987**
HD1.30.01abcd (Graduate Oral Pathology) 1981-1993
DH-2206 (General and Oral Pathology) 1981-1993
Applied Biology and Diagnosis-13 (Dermatology) 1982-1985

Course Director **1982-1985**
Cell and Tissue Biology-9 (Inflammation) 1982-1986
Human Biology-10 (Gastroenterology) 1982-1986
JS-4A (Problem Solving in Oral Diagnosis) 1982-1986

JS-23 (Differential Diagnosis of Head and Neck Disease) 1982-1987

Course Director **1982-1987**
DH-3406 (Applied Oral Pathology) 1984-1987
Stomatology Clinic 1986-1988
Applied Biology and Diagnosis-14 (Differential Diagnosis) 1987-1988
Clinical Conference 1987-1992
4118 (Clinical Stomatology) 1988-1993

Course Director **1988-1993**
Module 2092 (Genetic, Immunologic, Nutritional, and Environmental Diseases) 1992-1993
Module 2193 (Genital, Endocrine, Musculoskeletal, and Nervous Systems) 1992-1993
Module 3093 (Oral Manifestations of Systemic Diseases) 1992-1993

Greater Houston Dental Society

Dental Assistant Training Program 1983-1993

College of Dentistry, University of Tennessee

ANAT 101 (Histology) **1994-2002**
PERI 203 (Clinical Periodontology) 1994-2002
MICR 101 (Microbiology) 1995-2002
BIDX 513 (Advanced Oral and Maxillofacial Pathology) 1996-2002
BIDX 301 (Treatment of Medically Compromised Patients) 1997-2002
PHAR 401 (Clinical Pharmacology) 1997-2002
DH 437 (Periodontology) 1997-2002
OMSU 801DG (Clinical Pathologic Conference) 1997-2002
BIDX 201 (Basic Dental Radiology) 1998-2002
BIDX 407 (Oral Medicine and Therapeutics) 1998-2002

Course Director
DH 554 (Advanced Clinical Periodontics) 1998-2002
PERI 103 (Pathobiology) 1998-2002
ORPA 505 (Practical Oral and Maxillofacial Pathology) 1998-2002
DH 532 (Special Patient Care) 1999-2002
BIDX 311 (Oral and Maxillofacial Pathology) 1999-2002
DSCI 618 (Microbiology and Immunology) 2000-2002
DH 427 (General and Oral Pathology)

Course Director **2000-2002**

BIDX 103 (Biomedical Clinical Conference) **2001-2002**

Marquette University, School of Dentistry

BISC 030 (Introduction to Dentistry) 2002-Present
DENT 403 (Oral Medicine and Diagnosis – 1) 2003-Present
DENT 411 (Introduction to Clinical Practice – 1) 2003-Present

DENT 451 (Oral Medicine and Diagnosis – 3) 2003-Present
DENT 440/441 (Dental Rounds – 1/2) 2003-Present
DENT 460/461 (Dental Rounds – 4/5) 2003-Present
DENT 552 (Senior Colloquium – 2) 2003-Present
HCOP Seminar Series 2004-Present
DENT 450 (Oral Medicine and Diagnosis – 2) 2008

Lutheran Medical Center, Brooklyn, NY
Oral and Maxillofacial Pathology - annual seminar series
distance education to multiple remote sites (NY, MA, AZ, HI) 2004-2005

Meriter Hospital, Madison, WI
Oral and Maxillofacial Pathology - annual seminar series 2004-Present

Marquette University, School of Dentistry, A.E.G.D. Program
Oral and Maxillofacial Pathology - annual seminar series 2005-Present

EDITORIAL APPOINTMENTS:

Editorial Board, Journal of Dental Education 1978-1981
2006-2009
Reviewer, Journal of Dental Education 1978-Present
Reviewer, Oral Surgery, Oral Medicine, Oral Pathology 1982-2002
Contributing Editor, Journal of the Greater Houston Dental Society 1985-1994

Reviewer, Journal of the American Dental Association **1988-Present**
Reviewer, Texas Dental Journal 1989-1993

Editorial Board, Oral Surgery, Oral Medicine, Oral Pathology **2000**
Reviewer, Oral Diseases 2003-Present
Reviewer, Pediatric Dermatology 2003-Present
Guest Editor, Oral Pathology and Medicine, Year Book of Dentistry 2003-Present
Reviewer, Journal of Contemporary Dental Practice 2006-Present
Reviewer, Grand Rounds in Oral-Systemic Medicine 2006-Present
Reviewer, Acta Odontologica Scandinavica 2008-Present
Editorial Advisory Board, PennWell Publishing 2008-Present
Reviewer, Cancer Investigation 2009

COMMITTEES AND OFFICES HELD:

ACADEMIC

School of Dentistry, University of California at San Francisco

Vice-president, Freshman class **1972-1973**
Dean's Advisory Council 1972-1976
Fifth Quarter Committee 1972-1976
Secretary 1974-1975

Chair	1975-1976
Equipment Committee	1973-1974
President, Sophomore class	1973-1974
Executive Council, Associated Students, UCSF campus	1974-1975
Chair, Executive Council	1974-1976
Administrative vice-president, Associated Dental Students	1974-1975
Chair, Student Table Clinics Committee	1974-1975
Financial Aid Advisory Committee	1974-1975
Chair, Judicial Committee	1974-1975
Chair, Fifth Quarter Committee	1975
President, Associated Dental Students	1975-1976
Delegate, American Student Dental Association	1975-1976
Affirmative Action Committee, UCSF campus	1975-1976
Search Committee	
Chair, Department of Oral Medicine and Hospital Dentistry	1976-1977

School of Dentistry, University of Alabama at Birmingham

Teaching Committee	1978-1979

University of Texas Dental Branch

Admissions Committee	1981-1984
Laboratory Animal Care Committee	1981-1984
Developmental Biology Committee	1981-1986
Chair	1984-1986
ad hoc Committee on Radiology Curriculum Review	1982
Search Committee	
Chair, Department of Pediatric Dentistry	1982-1983
Academic Advisors Committee	1982-1984
Academic Advisor	1982-1984
Dental Coordinator, Health Careers Day, March of Dimes	1982-1985
Curriculum Coordinating Committee	1982-1985
ad hoc Committee on Advanced Standing	1983-1984
Chair, ad hoc Committee on Nutrition Curriculum Review	1984
Oral Cancer and Stomatology Committee	1984
Faculty/Staff Opinion Survey Committee	1987
Administrative Council	1987-1992
Construction Committee, UTDB	1987-1992
Curriculum Committee UTDB	1987-1992
Chair	1987-1992
Dental Student Evaluation and Promotion Committee	1987-1992
Institutional self-study and site visit coordinator	
CODA accreditation reaffirmation	1988-1990
Nominating Committee, Mu Mu Chapter, Omicron Kappa Upsilon	1988-1991
Membership Committee, Mu Mu Chapter, Omicron Kappa Upsilon	1992-1993
Inter-faculty Council	1983-1986
Chair	1985-1986
Institutional Building Advisory Committee	1983-1993
President's Task Force on AIDS	1986
Survey Committee	1987

Steering Committee, SACS accreditation re-affirmation	1988-1990
Co-chair, Institutional Effectiveness Self-study Committee	
SACS accreditation reaffirmation	1988-1990
American Red Cross-certified AIDS educator	1991-1993
Task Force on Academic Dishonesty	1992-1993
Education Committee for Infectious Diseases	1992-1993

College of Dentistry, University of Tennessee

Chair, Search Committee	
Chair, Department of Pediatric Dentistry	1993-1994
Administrative Council	1993-1997
Curriculum Committee	1993-1997
Chair	1996-1997
Graduate Committee	1993-1997
Academic Status Committee	1993-1997
Strategic Planning Committee	1993-1997
Student Status Committee	1993-1997
ad hoc Student Appeal Committee	1993-1997
Chair	1994-1997
Appointment, Promotion and Tenure Committee	1994-1995
Institutional self-study and site visit coordinator	
CODA accreditation reaffirmation	1994-1996
Chair, Search Committee	
Chair, Department of Biologic and Diagnostic Sciences	1995-1996
Computer Committee	1995-1997
Chair, Search Committee	
Chair, Department of Oral and Maxillofacial Surgery	1996
Staff Utilization Committee	1998-1999
Chair, Departmental Promotion Advisory Committee	1999
Chair, Departmental Six-year Post-tenure Review Committee	2000
Psi Chapter, Omicron Kappa Upsilon	
Membership Committee	1994-1995
Nominating Committee	1997-2001
Chair	2000-2001
Secretary-Treasurer	2001-2002
Outcomes Assessment Committee	2000-2002
Infection Control Committee	2001-2002
Dental Research Committee	2001-2002

Health Science Center, University of Tennessee

Executive Committee, Graduate Studies Council	1993-1997
Education Council	1994-1997
Distance Education Committee	1996-1997
Instructional Support Services Advisory Committee	1996-1997
Institutional Review Board	2000-2002

Marquette University School of Dentistry

Administrative Council	2002-Present
Curriculum Committee	2002-Present

Faculty Council	2003-Present
Graduate Education Committee	2003-Present
Scholarship Committee	2003-Present
Xi Chapter, Omicron Kappa Upsilon	2003-Present
Chair, Membership Committee	2004-2008

American/International Association for Dental Research

Houston Section	1981-1993
Secretary-treasurer	1985-1986
National Affairs Committee Cohort	1990-2002
Experimental Pathology Group, IADR	
Vice-president	1990-1991
President-elect	1991-1992
President	1992-1993
William J. Gies Award Committee, AADR	1998-1999

COMMITTEES AND OFFICES HELD: (continued)

American/International Association for Dental Research (continued)

Nominating Committee, IADR	1998-2001
Chair	2000-2001

Sigma Xi

University of Tennessee, Memphis Chapter	**1997-2002**
Marquette University Chapter	2002-2003
Vice-president	2003-2004
President	2004-2005

EDUCATIONAL

American Association of Dental Schools (* House of Delegates)

Council of Students	
* Pacific regional correspondent	1974-1975
* Doctoral delegate	1975-1976
* Postdoctoral delegate	1977-1981
* Vice-president for Students	1977-1979
* Member-at large	1979-1981
Administrative Board, Council of Students	1977-1981
Executive Committee	1977-1979
Council of Sections/Section on Pathology	
* Secretary	1982-1983
* Chair-elect	1983-1984

* Chair	1984-1985
* Councilor	2000-2003
Council of Faculties	
* Member	1999-2002
Academic Deans Group	1987-1998
Chair	**1994-1995**
Committee on Pathology and Oral Pathology Guidelines	
Section on Pathology	1983-1985
Chair, Committee on Pathology Curricular Guidelines for Dental Assisting	1984-1986
Committee on Pathology Curricular Guidelines for Dental Hygiene	1984-1986
Major committee assignments	
Reference Committee on Council Resolutions	1975
Short and Long Range Planning Committee	1977-1978
Legislative Committee	1978-1979
Reference Committee on Association Policy	1983
Reference Committee on Association Policy	2002

PROFESSIONAL
American Dental Association

Commission on Dental Accreditation	1975-1977
Representative, Commission on Dental Accreditation	
National Dental Curriculum Conference, Chicago, Illinois	1977
Committee on Advanced Education, Commission on Dental Accreditation	1977-1979
Consultant (Curriculum), Commission on Dental Accreditation	1990-1996
Clinical Science Review Committee	1990-1991
Practice Parameters Development Committee	1991
Speakers Bureau, Division of Scientific Affairs	1991-1994
Consultant, OSHA Dental Task Force (Region VI)	1992-1994
Consultant (Basic Sciences), Commission on Dental Accreditation	1998-2004
Consultant, Council on Access, Prevention and Interprofessional Relations	2002-2006
Consultant, Council on Dental Practice	2006-Present
Speaker, Center for Continuing Education and Lifelong Learning	2006-Present

American Student Dental Association

Consultant, Practice Management Program	1977-1978

Greater Houston Dental Society

Judge, Table Clinic Competition, Greater Houston Dental Meeting	1986-1993
Head Judge	1987-1993
Infectious Hazards Committee	1985-1993
Representative, Greater Houston AIDS Alliance	1987-1992
Board of Directors	1990-1992
Chair, Media Relations Committee	1992-1993

Texas State Board of Dental Examiners

Test Constructor, Infectious Hazards and Infection Control	1987

Chair, Expert Review Panel for HIV/Hepatitis B-infected
Dental Health Care Workers 1992-1993

Omicron Kappa Upsilon

Collegiate representative to annual Supreme Chapter meeting, Psi Chapter 1997-2002
Chair, Membership Committee, Xi Chapter 2005-2008

American Academy of Oral and Maxillofacial Pathology

Chair, Parameters of Care Committee 1995-1998
Professional and Public Relations 1999-2003
Chair 2002-2003

Tennessee Dental Association

Alternate delegate, House of Delegates **1997-1999**

Memphis Dental Legion

Member 1993-2002
President 1999-2000

PRACTICE (PROFESSIONAL) EXPERIENCE:

practice limited to Oral and Maxillofacial Pathology and Oral Medicine

Department of Oral Diagnostic Sciences
University of Texas Dental Branch
6516 John Freeman Avenue
Houston, TX 77030 1981-1987

Dental Diagnostic Services
2201 West Holcombe, Suite 300
Houston, TX 77030 1983-1993

University Dental Practice
College of Dentistry
University of Tennessee
66 North Pauline, Suite 306
Memphis, TN 38105 1994-2002

Department of Surgical Services
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CURRICULUM VITAE

MATEKOVITS GHEORGHE

University professor at the Victor Babes University of Medicine and Pharmacy Timisoara, Faculty of Dental Medicine, Preventive Care and Dental Techniques specialty. I am head of the Oral Rehabilitation discipline for the future dental technicians has a complex interdisciplinary analytic programme meant to enrich the cultural and professional horizon of the team with which any dentist cooperates.

I was born in Arad, in 1943.

I graduated the secondary school in 1961. I spent the next year studying dental techniques in Arad.

In 1962-1968 I was a medical student. In my student years, I played in the jazz quartet of the faculty.

In 1967 I was a clinical intern at the Maxillo-Facial Surgery Clinic, where I worked for 30 years.

In 1994 I became a Ph.D. in Medical Sciences.

I became senior lecturer in 1995, principal lecturer in 1998, and professor in 2004. In 1998 I became a member of the Hungarian Academy of Sciences.

I have published 15 books, 170 papers in the country and abroad and my name appears on about 200 papers presented at scientific sessions.

My research work concerns various areas, as Oral rehabilitation involves complex interdisciplinarity:

- possibilities and limitations of dental techniques in oral rehabilitation;
- orodental rehabilitation of epileptic patients;
- therapeutic protocol in Alzheimer disease;
- oral therapy of disabled patients and patients with special needs.

I have two daughters and two adorable granddaughters.

My hobbies are classical music, playing the piano, swimming and bicycle riding.

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FIBRAT HYPOLIPEMIANT THERAPY – BENEFITS AND RISKS

LAVINIA CODRUȚA GLIGOR[1], ȘERBAN GLIGOR[2]

[1] General Hospital (Spitalul de Urgență), Timișoara

[2] Western University (Universitatea de Vest), Timișoara

ABSTRACT

Cardiovascular diseases are the main cause of death, particularly those with type 2 diabetes and metabolic syndrome. Since the major cause of these diseases is increased serum levels of LDL cholesterol, which is assigned, as additional risk factors, increased triglycerides and decreased HDL cholesterol serum levels, to decrease morbidity and mortality by ischemic heart diseases, hypolipemiant drugs are needed. The target of these drugs is to decrease serum LDL cholesterol to 100 mg/dl or more recently to 70 mg/dl for patients with diabetes mellitus and/or metabolic syndrome. Between hypolipemiants, fibrate classe of drugs are used for a long time in therapeutic although their use as first-line drugs, is not justified.

Key words: Cardiovascular diseases, fibrates, cholesterol, diabetes, drugs.

INTRODUCTION – Benefits and safety of fibrates therapy

Fibrates or fibric acids are aryl-oxybutiric acids with hypolipemiant properties; fibrates includ (fig.1): fenofibrat, gemfibrozil (used mostly in USA), bezafibrat and ciprofibrat (use frequently in Europe).

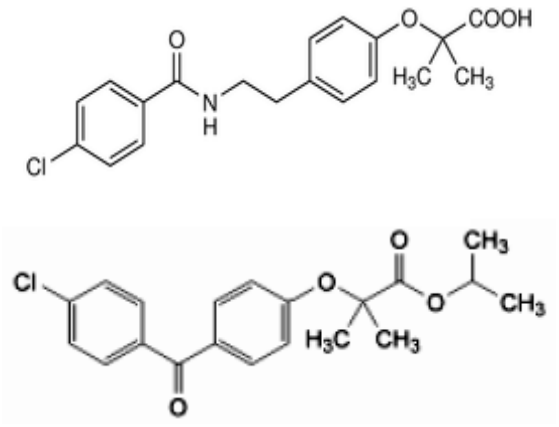

Fig. 1 – chemical structure of fenofibrat and bezafibrat

They have a marked effect of triglycerides, LDL and VLDL decrease, and are indicated in dyslipidemia characterized by increased values of this type of lipoproteins; their action consist in decreased triglycerides plasma levels by 30 to 50%, increased HDL-cholesterol serum levels by 2-20% and a variable effect on LDL-cholesterol (in his absence - by a decrease of 10%).

It is believed that the primary effect of fibrates consist in lipoprotein-lipase stimulation, with consequent increases in VLDL and IDL disposal. In patients with hypertriglyceridemia may occur a moderate decrease in the hepatic VLDL secretion. Also, they are described decreases in cholesterol liver biosynthesis (assigned to HMG CoA reductase inhibition or changes in VLDL secretion and catabolism) and increasing cholesterol elimination by the chair. Slight increase of HDL cholesterol is likely secondary to decrease VLDL concentrations.

In terms of pharmacodynamic properties, there are no relevant differences

between fibrates although, according to clinical studies conducted, it appears that gemfibrozil, which has a different chemical structure from other fibrates, has clinical results better than them.

6-20% plasma levels of these lipoproteins rich in cholesterol. HDL concentration increase by 10-15%. Gemfibrozil is something structural different to other fibrates.

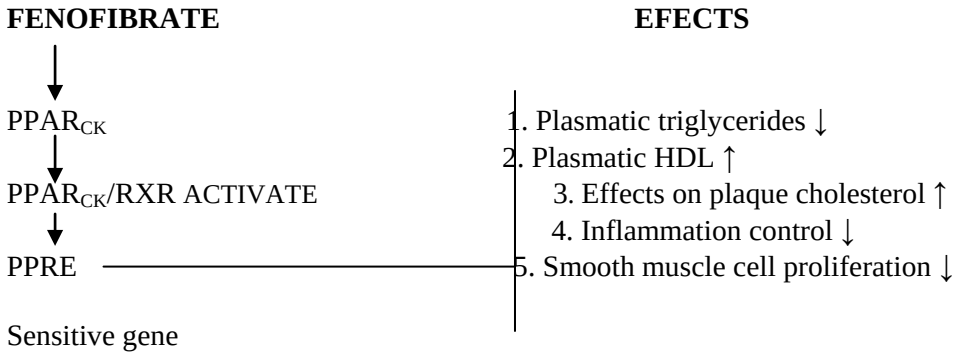

Fig.2 – Fenofibrate action

The mechanism by which fibrates works at the molecular level involves an action on the peroxisome proliferate-activated receptors (PPAR), which are 3 types: α, β and γ. These receptors represent ligand-activated transcription factors, which are part of the nuclear receptor hormone family. PPAR receptors transmit signals from the lipid soluble factors (such as fatty acids, eicosanoids, some hormones and vitamins) in genes by binding to DNA, through specific response elements (PPREs).

Fibrates receptors, particularly α types, regulates lipoprotein metabolism, mainly through direct lipoprotein lipase and SR-B1 activation, and secondary, by activation of genes regulated by the hepatic receptor α. These are multiple genes which encode receptors involved in fatty acids and cholesterol metabolism, with the resulting of triglycerides decrease and HDL cholesterol increase and in some cases, lower LDL cholesterol. Fenofibrate acts as an agonist for PPARCK receptors and induces the formation of a transcription nuclear complex that includes PPARCK / RXR heterodimer. Promoter regions that contain the regulated PPAR element will bind the complex, which will lead to the modulation (stimulation or inhibition) of gene transcription rate (fig.2).

When administrate in hyperlipidemia with increased LDL, fenofibrate reduced by

Causes a marked decrease in plasma triglycerides - after 3-4 weeks treatment, with their concentration decreases with 20-50%; decrease in cholesterol concentration is modest, usually 15%. Gemfibrozil increase lipoprotein-lipase activity and decreases adipose tissue intracellular lipolysis; also decreases VLDL and apoprotein B liver synthesis. These actions are responsible for the VLDL and (to a lesser extent) of LDL reduction in serum. HDL concentration increased moderately, probably due, in part, to decreases triglyceridemia; also was described an increase in the HDL synthesis.

A controlled study ("Helsinki Heart Study") conducted over 5 years period in 4081 middle-aged asymptomatic men, with a cholesterolemia around 290 mg/100 ml showed that gemfibrozil treatment causes a decrease in triglycerides and LDL cholesterol, increased HDL cholesterol and decrease heart attacks number.

Gemfibrozil is particularly effective in the hyperlipidemic states with high values of plasma triglycerides. Bezafibrat causes decreases in plasma triglycerides of 30% and in cholesterol by 5-19%; also lower VLDL and LDL concentrations. Bezafibrat is the only agonist for all three PPAR receptors: α, β and γ. Prolonged bezafibrat treatment causes a clear increase of HDL cholesterol, effect attributed to stimulate production of A1 and A2

apoproteins, which are in composition of these beneficial lipoproteins. Also was described a reduction in fibrinogen concentration, which may contribute to

Table 1 – pharmacologic features of fibrates

Fibrates	Administration and dose	Indications	Farmacocinetics	Adverse drug reactions	DCI
1. Bezafibrat	200 mg oral, 3 times/day, at table	hiper TG hiper C	good digestive absorption, urinary elimination, lower in renal failure	dyspeptic phenomena	Bezalip (Cedur) Regadrin-B® Verbital®
2. Gemfibrozil	oral, 900 mg single dose, half hour before table	hiper TG hiper C	oral absorbtion, serum pic at 1 - 3 hours, renal excretion	gastro-intestinal disorders, increases number of colecistectomia and apendicectomia	Innogen® Ipolipid® Regulip®
3. Fenofibrat	oral, 100 mg 3 times /day, at table, if C is very high 400mg/day initially, then when C is normal, 200 mg/day	hiper TG hiper C	Oral absorbtion, pic at 4 hours, excretion in 24 hours	dyspeptic phenomena ↑ AST ↑ ALT	Fenofibrat Lichol® Lipanthyl® Lipifen SR Lipivim®
4. Ciprofibrat	oral 100 mg/day, one time	primary hyperlipoprotei ne-mia hiper TG hiper C mixed hyperlipemia	digestive absorbtion, plasmatic pic at 2 hours, it binds to seric proteins	dyspeptic phenomena	Lipanor®

reducing the atherosclerotic risk. Fibrates administration is oral, the main therapeutic indications are hypertrygliceridemia and hypercholesterolemia reduction (table I).

The most common causes of obesity are hypertriglyceridemia and poorly controlled diabetes, secondary other causes being involved: increased alcohol consumption, hypothyroidism, renal disease, genetic disorders in lipid metabolism, etc. Hypertrygliceridemies are part of metabolic syndrome which is characterized by abdominal circumference over 94 cm in men and at least two of the following four elements:

- triglycerides over 150 mg/dl or specific treatment for this type of dyslipidemia
- HDLc below 40 mg/dl in men and below 50 mg/dl in women or specific treatment for this type of dyslipidemia
- systolic blood pressure ≥ 130 mmHg or diastolic blood pressure ≥ 85 mmHg or specific treatment for previously diagnosed arterial hypertension
- fasting glycemia ≥ 100 mg/dl or type 2 diabetes mellitus previously diagnoses

Fibrates are first-line drugs to treat severe hypertriglyceridemia's (triglycerides > 500 mg/dl) and syndromes characterized by chylomicronemia (triglycerides >1000 mg/dl), conditions associated with an increased risk of pancreatitis. In general,

patients with severe hypertriglyceridemia have low levels of LDLc and treatment can increase these levels because of increased intravascular lipolysis of VLDL, with lipoprotein-lipase, with concomitantly LDL accumulation. However, in moderate hypertriglyceridemia's (triglycerides < 500 mg/dl) fibrates produces a 30-50% serum triglycerides decrease, a 15-25% HDLc increase and an variable effect on the LDLc, depending on the drugs used.

Thus, gemfibrozil has neutral effect on LDL and fenofibrate decrease LDLc by 5 to 35%. Also fibrates decrease small dense particles of LDL that are more susceptible to oxidation and thus more atherogenic than large ones.

Fenofibrate, besides the lipid action decrease fibrynogen and uric acid serum levels and may have a therapeutic effect on gout. Other fibrates roles are represented by decreased mononuclear cells recruitment and adhesion to endothelial cells (an important step in the initiation of atherosclerotic lesions), influencing cholesterol homeostasis in macrophages (ie. affecting the binding transport of ATP ABCA-1 and receptor scavenger - class B-SR-B1), inhibiting vascular smooth muscle cells activation and decreased C reactive protein (PCR) levels, similarly to statine's treatment. In general, fibrate treatment is well supported, rarely causing dyspeptic phenomena and increased serum transaminases (ALT, AST). Fibrates can sometimes causes rhabdomyolysis and myalgia, arthralgia, muscle spasms, increased CPK, pancreatitis, hepatitis and biliary cirrhosis, renal failure, headache, asthenia, anemia, and allergic reactions.

The main side effects caused by gemfibrozil are abdominal pain, nausea and diarrhea; rarely produces increase of transaminases and serum FAL. Unwanted effects of bezafibrate are rare and consist mainly in gastrointestinal disorders. Were reported some cases of myolitic syndrome, with increased CPK activity.

Because these reactions were reported voluntarily by a population of uncertain size, it can not be accurately estimated their frequency and can not establish a causal relationship to drug exposure. Efficacy and safety of fibrates therapy have been studied under clinical trials conducted in the years 1987, 1999, 2000, 2002 and 2005 (table II), namely: HHS ("Helsinski Heart Study"), HHT-VA ("Veterans Affairs HDL Intervention Trial"), GDP ("The Bezafibrate Infarction Prevention"), LEADER ("Study and the Lower Extremity Arterial Disease Event Reduction Study") and most recently, the FIELD ("Fenofibrate Intervention in Event Lowering in Diabetes Study").

In HHS trial (with gemfibrozil) the relative risk of coronary events in patients with BMI increased, elevated triglycerides and HDLc was decreased by 34% for the total population ($p = 0.002$) and by 44% when the HDLc was below 1.08 mmol/l.

In VA-HIT trial (in which 25% of patients had type 2 diabetes mellitus) fibrates relative risk reduction of coronary heart disease has been linked to BMI: patients with low BMI, under 26 kg/m2, had a relative risk of 16 %, while patients with BMI above 26 kg/m2 had a relative risk of 49%. Similarly, in other major studies, elevated serum levels of triglycerides (over 2.3 mmol/l compared with under 2.3 mmol/l) were associated with a greater benefit of fibrates treatment, the relative risk of coronary heart disease was 58% versus 17%.

In the BIP trial (with bezafibrat) benefit was 39% (in patients with triglycerides over 2.2 mmol/l) versus 9% (of total population), but did not result in a significant decrease in LDL cholesterol levels, in contrast with other fibrates, which have been shown to significantly decrease LDLc.

FIELD study ("The Fenofibrate Intervention in Event Lowering in Diabetes") has sought 9795 patients with type 2 diabetes mellitus in Australia, New Zealand and Finland. The group study contained a small number of smokers and people with good glycemia (6.9%); in general, blood pressure was moderate (144/82 mm Hg - 57% of patients being diagnosed with arterial hypertension), serum lipids increased and patients had a

five years history of diabetes. Among study participants 22% had atherosclerosis (5% myocardial infarction, 12% stable angina, 7% stroke and 4% were percutaneous coronary intervention) the remaining 78% were primary prevention. Only 24% patients had diabetes controlled with diet, and 60% needs diet and/or hypoglycemic monotherapy.

Table 2 – clinical fibrates trials

	HHS	VA-HIT	BIP	LEADER	FIELD
Finalizing year	1987	1999	2000	2002	2005
Fibrate implicate	Gemfibrozil	Gemfibrozil	Bezafibrate	Bezafibrate	Fenofibrate
Number of target population, sex	4081 (male)	2531 (male)	3090 (91% male)	1568 (male)	9795 (63% male)
Treatment	primary	secondary	secondary	secondary	diabetics with primary and secondary treatment
Primary target	coronary arterial disease	coronary arterial disease	coronary arterial disease	coronary arterial disease	coronary arterial disease

The FIELD study revealed some unexpected benefits of fibrates therapy namely: fenofibrate reversible decrease creatinine with 11 μmol/l, which is associated with a 2 mmHg decrease of systemic blood pressure and with a 2.6% decrease of albuminuria degree ($p = 0.002$) and a 1.6% reduction of laser therapy interventions for diabetes retinopathy.

The FIELD study (which was designed to follow up, for five years, patients treated with fenofibrate) showed among other, a decrease rate of laser interventions for macular edema by 31% ($p = 0.0002$) and for proliferative retinopathy by 30% compared with placebo. This improvement was observed only in patients with a history of retinopathy and was not affected by the basic lipid levels or by the size of lipid levels decreasing, suggesting a nonlipidic mechanism of action.

Fenofibrate treatment not decrease the risk of retinopathia progression in two steps of across in all cohort study or in patients subgroup without retinopathy at base, but patients with pre-existing retinopathy shows a significant reduction in laser therapy risk compared with placebo (3.1% versus 14.6%, $p = 0.004$).

However, some studies have found an association between increased levels of lipids, macular edema and proliferative retinopathy. However, the benefit of lipid lowering therapy in these diseases remains unclear. Other studies have shown the inefficiency of statine therapy in preventing diabetes retinopathy. In conclusion, to have substantial benefits of fenofibrate treatment and this benefits occur rapidly in laser treatment for diabetic retinopathy is well to add a good management control of blood glucose and blood pressure. In all trials made so far has been a significant change of serum lipids, mainly triglycerides decreased and a slightly increased serum concentrations of HDL cholesterol. In recent years, in dyslipidemia's treatment, combination fibrate - statine has become a fairly significant share.

This dual therapy statine - fibrate is widely used in mixed hyperlipidemia, in

patients dyslipidemias with high risk (using the average dose or high dose of statines) in atherogenic dyslipidemia of type 2 diabetes mellitus (in which statin monotherapy do not cause significant HDL cholesterol increases and decreases in serum triglycerides).

While statines are effective hipolipemiants agents on LDL cholesterol and apo-B, with important role in the treatment of almost all dyslipidemias, fibrates acting on triglycerides and HDL cholesterol (in those associations being used bezafibrat, fenofibrat and gemfibrozil). Most clinical trials that have used this combination were of short duration and were performed on patients with combined hyperlipidemia and/or metabolic syndrome or diabetes, or patients with primary hypercholesterolemia.

A recently completed clinical trial (ACCORD – "Action to Control Cardiovascular Risk in Diabetes") study the impact of combined statin-fibrate therapy (ie simvastatin-fenofibrat) versus statine monotherapy on cardio-vascular events in diabetics. Following this study concluded that the combination statine-fiber is accompanied by an increased risk of occurrence of side effects like myopathy and rhabdomyolysis; therefore, it is recommended that if combination fibrat with statine, to receive a maximum of 10 mg simvastatin (unless associated with fenofibrat, for which there are no records that would have an increased risk). Moreover, the combination fenofibrat (200 mg/day) with statin significantly decreases HDL cholesterol (23%) compared with statin monotherapy and improves triglycerides and total cholesterol serum levels. Instead, statine combination with gemfibrozil, although improves the serum lipid levels, presents an increased risk of producing severe myopathy and therefore is recommended that this association is made with caution. Another recent study (SAFARI 2005) multicentric, randomized, which lasted 18 months and included 618 patients, studied the combination of 20 mg/day simvastatin and 160 mg/day fenofibrate versus simvastatin monotherapy (20 mg/day). After 3 months of starting treatment, the average level of triglycerides decreased by 43% versus 20.1% (at simvastatin monotherapy $p < 0.001$). On average, LDL cholesterol decreased by 31.2% versus 25.8% (at simvastatin monotherapy, $p < 0.001$), HDL increased by 18% versus 9.7% and was not reported any serious adverse drug reaction.

Using statin-fibrate combination is limited by adverse reactions occurrence, mainly myopathy and rhabdomyolysis. These side effects occur mainly at statin therapy, using cytochrome P 450 like metabolic pathway (lovastatin, atorvastatin, simvastatin) and are dose dependent.

Between fibrates, gemfibrozil, change the kinetics of all statines (except fluvastatin), due to interaction with cytochrome P 450, and fenofibrat did not significantly interact with statines.

CONCLUSIONS

Fibrates, with a common mechanism of action, have similar effects on serum lipids, especially lowering triglycerides and slightly increase HDL cholesterol levels.

Recent trials proved that favorable action on lipid metabolism is not always translate into benefits for patients. But, it is important to take into account the favorable action of various fibrates on cardiovascular morbidity and mortality, especially when associated with statines, less significant events and mortality from cardiovascular cause. It appears that fibrate treatment is associated with a low risk of cardiac non-fatal events, but at the same time an unfavorable effect on overall survival. This discrepancy, still unexplained, was observed in bezafibrat (BIP and LEADER trials) fenofibrat (FIELD trial) and gemfibrozil (HHS trial). Unlike bezafibrat and fenofibrat treatment, gemfibrozil treatment (HHS and VA-HIT trials) was accompanied by a significant decrease in cardiovascular morbidity, and in VA-HIT trial with a beneficial effect on all mortality causes, it suggesting a more favorable profile than other fibrates. Although fibrates are present for a long time on the market, there is limited evidence of their

beneficial role, on the long term, in primary and secondary cardiovascular diseases prevention. Due to the existing records of statines beneficial effect on lipid profile is not justified fibrates use as first line drugs. However, due to their good effects on triglycerides and HDL cholesterol levels and a small but overall positive effect on the total LDL, fibrates has a beneficial effect on certain patients subgroups. In this context, the fibrate therapy benefit - risk report is still considered positive.

REFERENCES

1. FASIO S. (2005) – Fibrates – the other life –saving lipid drugs, US Endocrine Review, Sept., 1015-1018
2. FINSTERER J. (2003) – Fibrate and statine myopathy, Aug., Nervenarzt., 74(8), 726/727
3. GHERASIM L. (2005) – Noi orientări în tratamentul dislipidemiilor în prevenția cardio-vasculară – terapia combinată, Medicina Internă, Vol. II, nr. 4, p. 59 – 70
4. Health Products and Food Branch, Canada & Astra Zeneca (2004) – Association of Crestor® (rosuvastatin) with rhabdomyolysis, June 15th, Health Canada Endorsed important safety information on Crestor® (rosuvastatin)
5. KEECH A. (2007) – Effect of fenofibrate on the need for laser treatment for diabetic retinopathy (FIELD Study): a randomized controlled trial, Lancet, 372:1543-1549
6. KEECH A., SIMENS R.J., BARTER P., et al. (2005) – Effects of long-term fenofibrate therapy on cardiovascular events in 9795 people with type 2 diabetes mellitus (FIELD Study): a randomized controlled trial, Lancet, 366:1849-1861
7. OTVOS J.D., COLLINS D., FREEDMAN D.S., et al. (2006) – Low density lipoprotein and high density lipoprotein particle subclasses predict coronary events and are favorably changed by gemfibrozil therapy in the VA-HIT, Circulation 113:1556-1563
8. PRUEKSARITANOND T., TANG C., QIU Y., et al. (2002) – Effects of fibrates on metabolism of statins in human hepatocytes, Drug Metab. Dispos., 30:1280-1287
9. ROSENSON R.S. (2006) – Fibrate therapy for reducing cardiovascular risk in diabetic patients, US Endocrine Disease, 1567-1569
10. VEGA G.L., MA P.T., CATER N.B., et al. (2003) - Effects of adding fenofibrate (200 mg/day) to simvastatin (10 mg/day) in patiens with combined hyperlipidemia and metabolic syndrom, Am. J. Cardiol., 91:956-960
11. *** - Role of fibrates in reducing coronary risk: a UK consensus, Med Scape Today from Web MD

ABREVIATIONS

- ALT – alkaline aminotransferase
- AST – aspartate aminotransferase
- BMI – body mass index
- CPK – creatine-phosphokinase
- DNA – deoxyribonucleic acid
- FAL – serum alkaline phosphatase
- HDL_C – high density lipoproteincholesterol
- HMG-CoA – hepatic hydroxymethyl glutaryl coenzyme A
- HyperTG – hypertriglyceridemia
- HyperC – hypercholesterolemia
- IDL – intermediate-density lipoprotein
- LDL_C – low density lipoprotein cholesterol
- VLDL – very low density lipoprotein

PAGES 29 - 36

SMILE DESIGN PLANNING IN ORAL REHABILITATION

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ABSTRACT

Odontal, periodontal and especially prosthodontic rehabilitation must take into consideration a series of characteristics regarding the smile line. The relation of the lips to each other, the size of the lip opening, the visibility, the shape, colours and position of the superior and inferior incisors are the minimal criteria that have to be taken in account in any kind of anterior restoration. These criteria have to be fulfilled from both frontal and lateral view; they are determined by the age and sex of the patients. Using the comparative method, the authors define several general features as an optional guide, in order to help young dentists at the beginning of their career.

Key-words: smile line, smile design planning, frontal rehabilitation

INTRODUCTION

Smile is the key to beauty, to a great first impression and to better opportunities in social life, in human inter-relationships, in love and in getting a job. American researchers have shown that smile is highly important for 99.7% of the population. However, only 50% of the subjects are pleased with their smile. (American Academy of Dentistry Survey Report, 2004). The most common aesthetic issues that affect the "view behind the curtain of the lips" are front teeth with marked discolouration, anfractuous edges, old fillings, pronounced border seal, ectopic teeth, diastema, interdental space, complete crowns or old fixed partial dentures etc.

Smile design - a new requirement in facial aesthtetics, a new discipline linked with many dental medicine specialities! Facial aesthetics planning will soon become a separate discipline, if it is not treated as such already.

It comprises all medical specialities in the facial and orodental area and requires work team from the very beginning. Smile design planning concerns all the aspects of the lower facial height, the harmony of the dental-maxillary system and the facial-lip-dental-periodontal complex. It involves odontology, for the rehabilitation of the damaged tooth and the tooth bleaching procedures; periodontology, for the correction of the visible mucogingival deficiencies; prosthetics, for the harmonious shape, colour and size of the rehabilitated parts; gnathology, for frontal and canine guidance; implantology, for the frontal maxillary and mandibular groups; modern orthodontia and the scientific and practical methods of the surgical orthodontic treatment, for the restoration of the aesthetic parameters of the dental-gingival unit, lip position and facial harmony.

Beside these typical branches of the field, smile design planning requires other significant components, such as

communication science and the management of the entity consisting of the dentist, the dental assistant, the dental laboratory technician and the patient. This new concept in the state of dental art goes beyond simple mechanic rehabilitation and seeks perfect aesthetic restoration and its superior and stable integration within the orofacial system.

Smylist Professional software helps designing the future facial features of the patient (www.smylist.com).

For a precise and accurate use of the application, the dentist needs solid knowledge of the theories regarding smile types and the micro- and macroelements of the smile. These are adapted individually for each patient. In the end, all variants are visualised and the patient has the possibility to think over them before making a decision.

In this way one avoids conflicts caused by too large dentures – partial dentures with more than 6-8 elements, complete dentures or extended partial dentures – that look nice as models, but the patient would have liked to have a different smile.

More often than not, a larger denture distorts the oral cavity and the soft perilabial tissues and the patient gets really scared when he looks in the mirror for the first time. When hearing his bad impression, the dentist offers a firm, but pathetic consolation: "You'll get used to it in a few days."

Nowadays, patients are better and better informed on the services that a dentist can provide. Our survey indicates that aesthetics is the first on the list of patient requirements, followed by absence of pain, time saving and, naturally, a decent price.

While almost these demands can be met through rational marketing, the most important of them – a face as beautiful as possible – needs a change the paradigm in the concept of dental art. The patient wants accurate information and the dentist's special aesthetic sense is not always enough.

MOTIVATION

Aesthetic research is frequently preferred for maintaining gingival and periodontal integrity. However, aesthetics is also commonly assessed without considering the individual demands, including the superposition of gingival tissues during smiling. A small number of investigations are enough to determine the visibility of the cervical ridge. Crispin and Watson upper lateral incisor was the most visible tooth in 425 students, future dentists. The gingival ridges of this tooth were visible in 66% of the students. Our study does not deal with the influence of age and gender. A TJAN study on 20-30-year-old students found a high and very high smile line, more frequent in women (14% and 75%) than in men (7% and 63%). A low smile line was more common in men (30%) than in women (12%). On the other hand, WICHMAN concluded that there is no significant difference of the cervical ridges between young and old people.

For an easier cooperation with the patient and the dental laboratory, a large number of smile classifications have been suggested. This proves that few things in oral biology are characterised by accurate parameters.

Efforts were made to develop software that creates over 60,000 variants of lip positions, offering the patient visible solutions that the dentist and the technician can follow easily.

Philips suggested a classification based on three criteria:

1. smile style (based on the neuromuscular pattern);
2. smile stages;
3. smile types.

1. Smile styles

Although there are millions of different smiles, three styles can be described based on their neuromuscular pattern:

- *The commissure smile* is the most common smile pattern, seen in 67% of people. It can be compared with Cupid's bow and it is also called Mona Lisa's smile.

Fig. 1 Cupid's bow

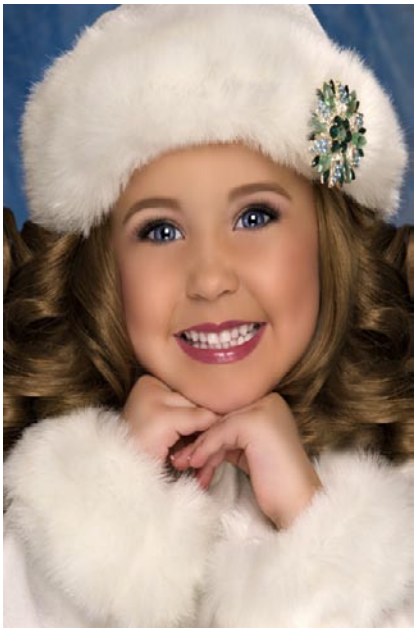

Fig. 3 The unanimously admired "nice" smile

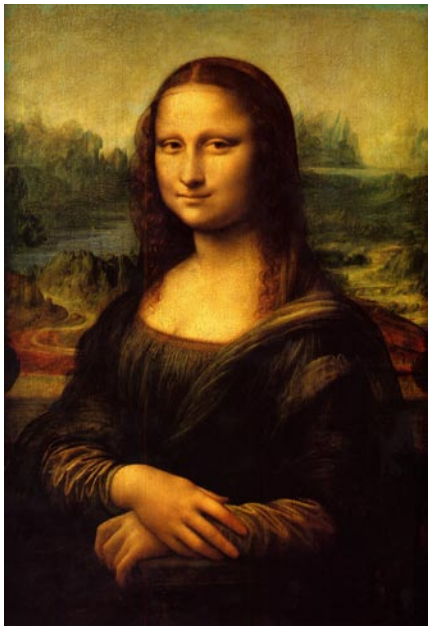

Fig.2 Tight-lipped smile

The mechanism can be explained as follows: first the corners of the mouth are pulled upward and outward, and then the zygomatic major is contracted. Next the levators of the upper lip contract to reveal the upper teeth. The first molar is 1-3 mm higher than the incisal edge of the central. If united, these points make a downward convexity curve.

In a spontaneous smile, the maximum movement of the commissure is 7-22 mm and the average direction of the movement is 40º from the horizontal. Jerry Seinfeld, Dennis Quaid, Jennifer Ariston, Frank Sinatra, Jamie Lee Curtis and Audrey Hepburn are among the celebrities with a commissure smile.

Fig. 4 Figure 4. Franky-boy and the commissure smile

- *The cuspid smile* characterises 31% of the population. The lips are shaped to resemble a diamond. The neuromuscular pattern is dominated by the levator of the upper lip that contract first and reveals the tip of the cuspids. Then the commissure is pulled upward and outward. The corners of the mouth are often inferior to the height of the upper lip. In this type of smile, the maxillary molars are at the same level or below the incisal edge of the central incisors. Elvis, Tom Cruise, Drew Barrymore, Sharon Stone and Linda Evangelista are among the celebrities with a cuspid smile.

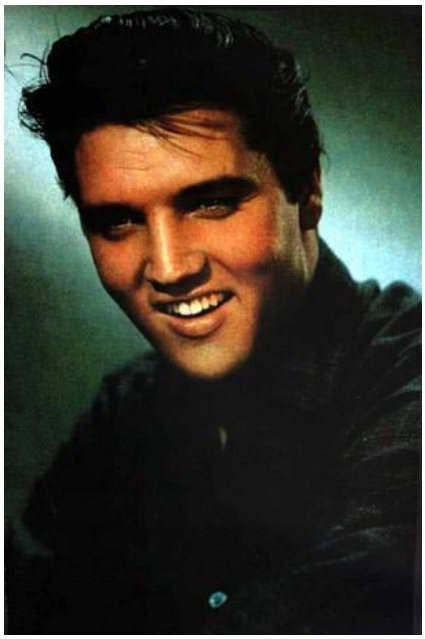

Fig. 5 Elvis and his smile

- *The complex smile* is seen in 2% of the population. The lips are shaped as two parallel chevrons. The levators of the upper lip, the levators of the corners of the mouth and the depressors of the lower lip contract all at the same time and reveal all the upper and lower teeth concomitantly. The basic feature of this smile is the strong muscular pull and retraction of the lower lip downwards and backwards. The incisal plane is flat and parallel with the lower lip. Among the personalities with complex smiles are Julia Roberts and Marilyn Monroe.

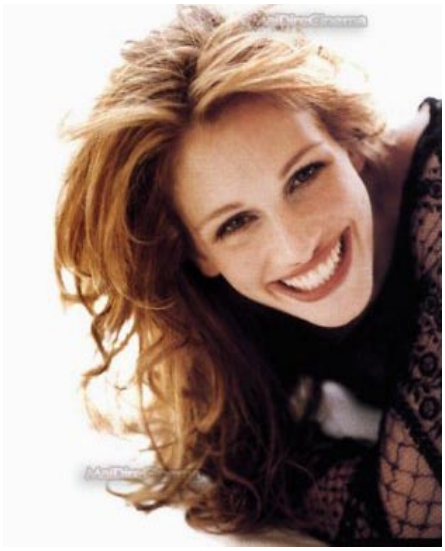

Fig. 6 Julia Roberts revealing her dental arches up to the molars

A certain smile type has been programmed genetically, combined with certain habits and the positioning of the underlying hard tissues. What is the essence of smile design planning? The repositioning of the underlying hard tissues allows the neuromuscular reprogramming and a smile that suits the patient's personality.

2. Smile stages

A smile cycle has four stages:

- Stage I – lips closed
- Stage II – resting display, half-open oral cavity
- Stage III – natural smile
- Stage IV – full smile

If the tooth visibility degree does not differ too much between the natural and the extended smile, the aesthetic treatment can be restricted to the front teeth. Otherwise it should also include the lateral maxillary.

3. Smile types

The smile type is defined by the dental-gingival tissues displayed:

- Type 1 – maxillary only

- Type 2 – maxillary and over 3 mm gingiva
- Type 3 – mandibular only
- Type 4 – maxillary and mandibular
- Type 5 – neither maxillary nor mandibular (teeth not shown)

Fig. 7 The smile line
A – normal; B – high, the vestibular gingival mucosa is displayed

In most cases, patients can be included in one smile type, but the types can be combined if necessary. Smile style, stage and type allow an objective smile classification. A pleasant smile implies the interaction between lips, teeth and gingival tissues and its harmonious integration within the facial composition.

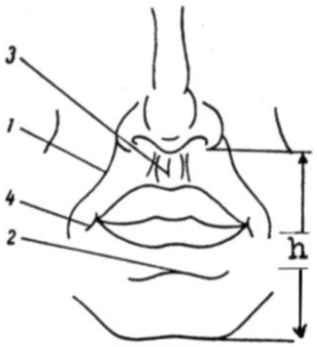

Fig. 8 Smile symmetry in the prosthetic influence area. 1. – nasolabial fold; 2. – mentolabial fold; 3. – nasal filter; 4. – perilabial folds; h – the vertical dimension of the lower facial height

The smile parts that must be analysed from the aesthetic perspective are the following:

a. **the smile line** is the relation between the upper lip and the display of the incisors, the cuspids and the gingival tissues.
b. **the upper lip curve:**
   - an ascending curve from the lateral incisors to the corners of the mouth; it is ideal from the aesthetic point of view;
   - straight smile line;
   - reverse smile line;

c. enough negative gap between the dental arches

d. **well-proportioned symmetric bilateral buccal corridor.** The value lies in the golden ratio of the apparent width of the central incisor, the lateral incisor and the maxillary cuspid;

e. smile symmetry – the relative symmetric positioning of the commissure horizontally and vertically (to the interincisal line, for instance). Within the dental-facial composition, the intercommissure line is parallel to the imaginary line that unites the tip of the two cuspids and the bipupilar line;

f. the shape of the incisal curve:
   - convex;
   - flat;
   - reverse.

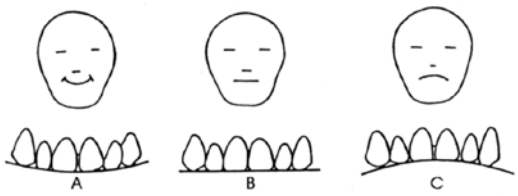

Fig. 9 How does the incisal line of the front teeth reflect individual characteristics (after Williams)? A. a convex curve suggests a young, happy individual; B.a flat line indicates austerity, determination; C. a concave line inspires sadness, indisposition, old age.

The incisal curve will be parallel to the lower lip border and the line of the frontal gingival border.

MATERIAL AND METHOD

A random examination was performed on 240 subjects, of which 104 women and 136 men. The purpose of the examination was to establish the correlation between frontal teeth, the gingival tissues and the smile line. The subject's head was

aligned to the Frankfurt horizontal plane for an optimum angle.

Two exposures were performed for each subject:

- a wide mouth opening with the front teeth in habitual occlusion;
- a wide mouth opening after laughing heartily.

Results

Four categories with the following scores were found:

- zero score – low smile line, estimated as at least 25% of the interproximal gingivae visible and no gingival margins visible; maxillary teeth visible;
- score one – average smile line, estimated as 25-75% of the interproximal gingivae visible, possibly visible gingival margins at single teeth;
- score two – high smile line, estimated as 75% of the interproximal gingivae visible, partially visible gingival margins, maxillary and mandilbular teeth visible;
- score three – very high smile line, a band of contiguous maxillary gingiva of at least 2 mm is visible in all regions of interest.

For a thorough examination of the visibility of the gingival margins and papillae, a dichotomous assessment (visible or not) was performed at three sites of each tooth, from the right maxillary first molars to the left maxillary first molars. Three scores per tooth (distal papilla, buccal margin, mesial papillae) were thus obtained. If the assessment of the pictures with wide mouth opening and heartily laugh showed a higher exposure of the gingival tissues than the assessment of the pictures with the teeth in habitual occlusion, the higher scores were used for examination purposes. Next the presence or absence of diastema was determined. On the pictures with teeth on habitual occlusion the position of the lower lip in relation to the incisal edges was also evaluated.

Three different categories were defined:

1. there is a space between the lower lip line and the incisal edges of the maxillary incisors;
2. the lower lip touches the incisal edges;
3. the maxillary incisal edges are slightly covered by the low lip line.

The results were analysed with descriptive statistics. As the scores for the line smile position and the classification of the lower lip position in relation to the incisal edges are not considered parameters, the score proportion and category prevalence were analysed.

The statistical interpretation has revealed that a high smile line is more commonly seen in young subjects (up to 35 years of age) than in older ones (more than 36), both in men and in women. A smile line score of 2/3 indicates visible papillae and gingival margins from the premolars to molars in the maxillary region, in approximately 33% of the younger females and in 29% of the older females. These scores were given to about 25% of young males and only to 6% of older males. This means the 94% of the older male population has a low smile line that does not cover the gingival margin. For groups over 35 years of age, considerable gender-connected differences were noticed in younger versus older males. However, no difference between younger and older females was observed in the distribution of scores 2 and 3 versus scores 0 and 1. In both age categories, approximately 24% of the subjects had a high smile line that revealed the gingival margins and the papillae.

Male subjects show the mesial papillae of the front teeth even after 50. In the 51-71 age group, the mesial papillae were invisible in 20% of the subjects; 40% don’t show the mesial

papillae of the first molars in the corresponding female age group.

Within the 51-71 age group, the hidden mesial papillae are more common in men than in women; 30% don't show the mesial papilla and 50% hide the mesial papillae from the second premolar to the back of the mouth. During laughing, the buccal gingival margin of the denture was hidden in about 50% of the older subjects. Most individuals, both men and women, show a tendency to hide their buccal gingival margin as they age.

In all age groups and irrespective of gender, the buccal gingival margins of the lateral incisors were more visible than the central incisor and canine region. Also older males hide the distal papillae of the incisors more frequently than younger males and women. Generally, only 70% of the subjects in the 51-71 age group show the distal papillae of the incisors while laughing.

DISCUSSIONS

The evaluation comprised both the exposures in habitual occlusion and maximum laughing and the exposures with wide mouth opening after laughing heartily.

In our study, the common attribute of the smile line was that females less than 35 years of age show higher smile lines than men above 35. Similar results were found by Tjan in California and Peck in New England. Previous studies did not reveal age development issues, although they were addressed previously.

There are three explanations for this age-dependent phenomenon:

1. As documented by Ainamo et. Al, the facial height increases with age, which may mean that the upper lip changes with age.
2. Lower smile lines in older males may be explained by recessions in the gingival tissues caused by past or present periodontal affections. In such cases, the line will be considered in a low position although it may not have changed.
3. Lower lines may be caused by decreased elasticity in the soft tissues because of metabolic alterations in the connective tissue. This may lead to a change of the facial tissues that account for the changes of the upper lip position. Further studies should include an evaluation of the gingival recessions.

CONCLUSIONS

The clinical significance of a longer lip projection is clear for the prosthetic reconstruction of teeth hiding preparation margins. However, these margins will become visible by gingival recession with an unaltered lip projection. Gingival recession is a very common phenomenon and may be minimized by proper oral hygiene instruction and supportive patient care programs.

Although considered a priority, the aesthetic principles should take into account the biological aspects, such as the subgingival positioning of the crown margins in the maxillary anterior region, given that half of the population does not show gingival margins or papillae during maximum smiling. In these cases, biological principles must prevail.

One third of the population requires rehabilitations based on aesthetic criteria, based on the fact that the gingival margins and the papillae are at least partially visible while smiling. This is particularly true for younger females.

Previous studies have shown that the lateral incisors are more visible than the central incisors and canines. Therefore special care must be provided during the rehabilitation process.

The reduced frequency of the diastema is the results of the increasingly frequent orthodontic treatment of young subjects.

In short, our study shows that high smile lines are present in only one third of the female population and in a smaller percentage in men over 35 years of age.

REFERENCES

1. ANGHEL MIRELLA: Diagnosticul oral. Ed. Orizonturi Universitare, Timişoara, 2004;
2. BODROGI, A.: Funkcionális smiledesign. Esztétika a fogászatban. III. évf. 1 szám, 2009, 40 – 43 old.
3. BORȚUN CRISTINA, SANDU LILIANA: Ghid practic de tehnologie a protezelor parțiale mobilizabil scheletate. Ed. Eurobit, Timişoara, 2007;
4. BRATU, D., IEREMIA L., URAM-ȚUCULESCU S.: Bazele clinice şi tehnice ale protezării edentației totale. Ed. Imprimeria de Vest. Oradea, 2003.
5. BRATU D., NUSSSBAUM R.: Bazele clinice şi tehnice ale protezării fixe. Ed. Signata, Timişoara, 2001.
6. BRATU D., BRATU E., ANTONIE S.: Restaurarea edentațiilor parțiale prin proteze mobilizabile. Ed. Medicală, Bucureşti, 2008,
7. CSILLAG, M.: A Smylist Professional mosolytervező szoftver. Esztétika a fogászatban. III. évf. 1 szám, 2009, 44 – 54 old.
8. GOODACRE, CJ.: Estetica gingivală , J. Prosthet. Dent, 1990.
9. IEREMIA L., BRATU D.: Viziunea intersistemică în medicina dentară. Ed. Univ. „Petru Maior", Târgu-Mureş. 2006.
10. JÖRGEN JENSEN, ANDREAS JOSS and NIKLAUS P. LANG / Department of Periodontology and Fixed Prosthodontics, University of Berne, Switzerland/ The smile line of different ethnic groups in relation to age and gender.
11. LEVIN, L., Estetica dentară şi proporția de aur, J. Prosthet. Dent, 1978.
12. MATEKOVITS, GH.: Reabilitare orală pentru tehnicienii dentari. Timişoara. Ed. Nero G., 2000.
13. MILLER, EL., BODDEN, WR., JAMISON, HC., Studiu asupra relației liniei mediane dentare cu linia mediană a feței, J. Prosthet. Dent, 1949.
14. RIMMER, SE., MELLOR, AC., Percepția pacienților asupra esteticii şi a calității tehnice a coroanelor şi a lucrărilor protetice parțiale fixe, Quintessence Int., 1996.
15. PILKINGTON, EL.: Estetica şi iluzia optică în medicina dentară, J Am Dent Assoc, 1936.
16. RÓTH L.: Restaurări protetice fixe şi combinate. Dental Press Hungary Kft. Budapest, 2008;
17. VÂLCENU A.: Estetica în medicina dentară.. Timişoara. 2004. Ed. Brumar
18. VIG, RG., GRUNDO, GC.: Dinamica aranjării dinților anteriori, J. Prosthet Dent, 1978.
19. ***Glosarul termenilor protetici, 1999, J. Prosthet. Dent, vol. 81, nr.1.
20. www.smylist.com

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THE BENEFITS OF COMPUTER IMAGING IN FACIAL SURGERY

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ABSTRACT

In order to obtain a satisfactory result it is very important that the wishes, motives and expectations of the patients are clear and realistic. The patient should be informed with regard to the possible outcome and risks of the suggested treatment. Material and methods: We selected 15 patients that required rhinoplasty. For computer visual communication we used a personal computer with LCD monitor and a digital camera with resolution of 6MP. To manipulate digital images we used Aesthetic Vision software. Results: An immediate modification of live images gives more concrete communication with the patient, who can also participate in the planning of the operation. However, it is not possible to plan every kind of operation with the same degree of accuracy. Discussion: Computer imaging makes it possible to visualize additional changes which may lead to a better aesthetic and realistic result. To some patients the possible surgical changes depicted could not agree with their idea of what the surgical outcome should be. Conclusions: Using the computer to simulate rhinoplasty has given us the opportunity to analyze the patient's intentions in a better way, to program the operations more accurately, and to eliminate patients with unrealistic expectations.

Keywords: computer simulation, rhinoplasty, aesthetic surgery

INTRODUCTION

In present, the most important step in patient treatment is communication. It is the basis of preoperative analysis and planning for plastic and reconstructive surgery. In order to obtain a satisfactory result it is very important that the wishes, motives and expectations of the patients are clear and realistic. The patient should be informed with regard to the possible outcome and risks of the suggested treatment (OLDE KALTER P., 1995). Over recent decades there have been a number of methods used for preoperative communication, analysis and planning of facial plastic surgery. Standardized preoperative photography is a must for adequate documentation and may also be used for preoperative analysis. Drawings on photographs look-through techniques, or scissors and glue (photographic surgery) may be used to visualize the patient's wishes and demonstrate the surgical possibilities (VUYK H. D., 1998). However, a degree of uncertainty remains as patients may have difficulty conceptualizing their final postoperative appearance (THOMAS J.R., 1989). A recent development in the field of visual communication is computer image processing. This makes it possible with the help of a digital camera and a computer to present the face of the patient on a monitor. Subsequently this picture may be manipulated according to the patient's wishes, obviously within realistic surgical possibilities. The reproductions may be filed in the computer, or printed and given to the patient.

We found three studies, two on orthognathic surgery (SARVER D.M., 1998) (SINCLAIR P.M., 1995) and one on rhinoplasty (BRONZ, 1994) that have compared the computer simulated result with the actual results. Sixteen out of 18 patients found the predictions realistic compared to the surgical outcome (SARVER D.M., 1998). Another study involving 56 patients demonstrated 70% realistic prediction tracing scored by the surgeon (SINCLAIR P.M., 1995). In a study on computer simulated rhinoplasty results (BRONZ, 1994) all 100 patients found the prediction reasonably realistic.

MATERIAL AND METHODS

We selected 15 patients that required rhinoplasty.

For computer visual communication we used a personal computer with LCD monitor and a digital camera with resolution of 6MP. To manipulate digital images we used Aesthetic Vision software.

The images were taken with digital camera at 2 m from the patient, which sat with their head in the Frankfurt position. After focusing and adjusting exposure the picture is made and transferred to the computer. On the monitor, screen was split in two sections, one with current photo and second with photo that can be manipulated with the image processing software.

Results

An immediate modification of live images gives more concrete communication with the patient, who can also participate in the planning of the operation. However, it is not possible to plan every kind of operation with the same degree of accuracy.

We present a case of a 23 years old male who present in our clinic for aesthetic rhinoplasty. There were taken photos before the surgery and there were processed on the computer. The results of computer simulation were showed to the patient, and he agreed with the rhinoplasty. After the surgery there were taken photos and compared with the ones obtained by computer simulation. We present the photos taken before surgery (Fig.1), computer simulation (Fig.2), and photos taken after surgery (Fig.3).

Case presentation

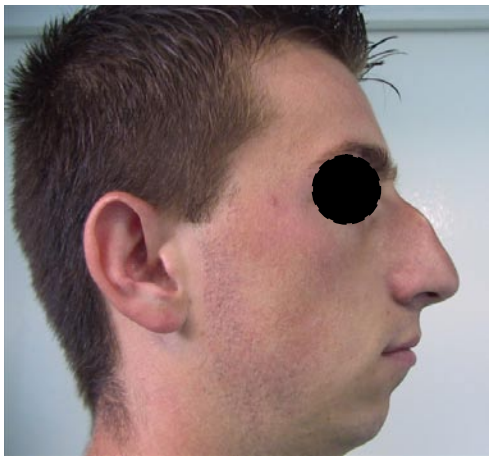

Fig. 1 - Preoperative picture

Fig. 2 - Computer simulation

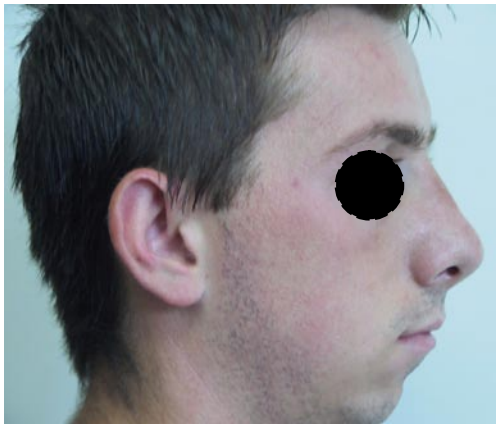

Fig. 3 - Postoperative result

DISCUSSION

In facial plastic and reconstructive surgery, the patient and the doctor should agree on achievable goals before starting the surgical procedure.

Computer simulation is a promising adjunct both in communication and in planning of the procedure (VUYK H. D., 1998).

The importance of computer imaging and the preoperative communication between doctor and patient is made clear in this study in a number of ways.

The vast majority of patients found computer imaging helpful in clarifying their wishes and expectations. Using computer imaging of the patient's wishes and expectations were modified to a realistic level.

Computer imaging makes it possible to visualize additional changes which may lead to a better aesthetic and realistic result. To some patients the possible surgical changes depicted could not agree with their idea of what the surgical outcome should be.

Another big advantage is being able to store the images. The files are more compact and when the patient comes for a checkup, if the work has been done well, it's easier to demonstrate the result. The "after-operation" image can be superimposed precisely on the "before-operation" image. This is the key point: conservative, realistic planning and professionalism are essential to obtain concrete advantages when using this system.

A lot of patients are curious to see the possible result on the computer and then they want the modified photos to look for another surgeon at a cheaper price. If the patients can tolerate being operated on by a "nonplastic" without photos and without preplanning, from the "real plastic" they want guarantees and expect.

All in all computer imaging helps the patient develop realistic expectations. The more realistic the expectations, the greater the likelihood that the patient will be satisfied (ADAMSON P.A., 1995). Possibly because only a small number of patients were acquainted with computer imaging a relatively large number of patients were surprised with this form of visual communication. Moreover, none of our patients thought that computer imaging was harmful to the patient - doctor relationship it only appears to enhance this relationship.

Another important aspect is the number of patients who said they had more confidence in the judgment of the surgeon who used computer imaging.

It must be noted that a patient's perception of the final surgical result, as well as their comparison with the computer-predicted outcome, may be influenced by a number of non-surgical criteria.

First of all their evaluation may be directly related to their degree of satisfaction. It is well established that patient's satisfaction is determined by many factors apart from the surgical result (REICH, 1975).

This study shows that rhinoplasty with computer imaging has a relatively high rate of predictability. The patients were told clearly that computer imaging was merely an illustration of the possible expected result and not a guarantee. The use of computer imaging must be honest and ethical. The reconstructed image on the computer is limited to two dimensions. A frontal view is harder to depict because of vague or reduced contrast compared to the manipulation of profile views.

CONCLUSIONS

Using the computer to simulate rhinoplasty has given us the opportunity to analyze the patient's intentions in a better way, to program the operations more accurately, and to eliminate patients with unrealistic expectations.

Storing images makes it easier to show the patients the results without having to go and look in the files for the old slides.

REFERENCES

1. ADAMSON P.A. KRAUS W.M. Management of patients dissatisfaction with cosmetic surgery [Journal] // Fac. Plast. Surg.. - 1995. - 11. - pp. 99-104.
2. BRONZ G. Predictability of the computer imaging system in primary rhinoplasty. [Journal] // Aesth. Plat. Surg.. - 1994. - 18. - pp. 175-181.
3. OLDE KALTER P. VAN DER BAAN S. & VUYK H.D. Medico-legal aspects of otolaryngologic, facial plastic and reconstructive surgery [Journal] // Fac. Plast. Surg.. - 1995. - 11. - pp. 105-110.
4. REICH J. Factors influencing patient's satisfaction with the results of plastic surgery. [Journal] // Plast. Reconstr. Sugery. - 1975. - 55. - pp. 3-13.
5. SARVER D.M. JOHNSTON M.W. & MATUKAS V.J. Video imaging for planning and counselling in orthognathic surgery. [Journal] // J. Oral Maxillofac. Surg.. - 1998. - 46. - pp. 939-945.
6. SINCLAIR P.M. KILPELAINEN P., PHILLIPS C. et al. The accuracy of video imaging in orthognathic surgery. [Journal] // Am. J. Orthod. Dentofac. Orthop.. - 1995. - 107. - pp. 177-185.
7. THOMAS J.R. FREEMAN M.S., REMMLER D.J. & EHLERT T.K. Analysis of patient response to preoperative computerized video imaging. [Journal] // Arch. Otolaryngol. Head Neck Surg.. - 1989. - Vol. 115. - pp. 793-796.
8. VUYK H. D. STROOMER J. & VINAYAK B. The role of computer imaging in facial plastic surgery consultation: a clinical study [Journal] // Clin. Otolaryngol.. - 1998. - 23. - pp. 235-243.

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THE ROLE OF AMBULATORY BLOOD PRESSURE MONITORING TO PREDICT CARDIOVASCULAR EVENTS IN PATIENTS WITH REFRACTORY HYPERTENSION

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ABSTRACT

Our goal in this research is to demonstrate if ambulatory blood pressure (ABPM) gives a greater account of cardiovascular problems compared to its office blood pressure (BP) in a limited number of patients with refractory hypertension from our area of living. Our research evaluated the occurrence of cardiovascular problems over periods of time while making an average investigation of 48±6 months, in 75 subjects with refractory essential hypertension (who suffered from diastolic blood pressure >100 mm Hg while taking antihypertensive treatment in which we inserted three or more antihypertensive medicines, one being diuretic). Patients were divided in three groups in accordance with the mean of DBP while having activity recorded in ABPM, with the following data: group A <90 mm Hg (n=24), group B 90 to 99 mm Hg (n=25), and group C >100 mm Hg (n=26). We could notice a very slight difference in office SBP and DBP values among groups, at the starting point or while achieving of the last evaluation. In group C (group that had daytime value of diastolic blood pressure >100 mmHg) the average values of both 24-hour ambulatory SBP and DBP and the value achieved while day and night periods were enormously bigger (p<0.001) compared to the other two remaining groups, this being connected to enlarged occurrences of smokers and a high amount of body mass index. While occurring the observation period, 30 subjects were noticed with cardiovascular problem (10 with stroke, 9 with coronary heart disease, myocardial infarction, or angina pectoris; 5 with progressive heart failure; 6 with hypertensive emergency), as shown in table 2. The occurrence of new cardiovascular problems was numerically notable more reduced in group A (4 events) compared to group B and C (12 problems, and 14 problems, respectively), p<0.001, with no numerically notable difference among the two groups with the greatest ambulatory B, p=NS. More increased values of ambulatory blood pressure culminated with a worse prediction for the patients that suffered from refractory hypertension, having as support the suggestion that ABPM can be beneficial in layering the cardiovascular problem in subjects with refractory hypertension.

Key Words: ambulatory blood pressure monitoring, office blood pressure measurement, refractory hypertension, cardiovascular events.

INTRODUCTION

While we observed the data clinically, some hypertensive patients had suffered from persistently great value of blood pressure (BP) although they accurate multiple medicines were prescribed to them. These subjects are named in literature resistant or refractory and they represent the 10% of hypertensive subjects mentioned by specialized clinics and their medicines have to be changed frequently, also by including the inclusion of other antihypertensive medicines [1] . We couldn't find the exact reason of refractory hypertension but we think it can happen

because we have a specific identifiable disorder frequently (secondary hypertension) connected to exogenous substances that increase BP or are involved in the action of antihypertensive agents (ie, nonsteroidal anti-inflammatory medicines), due to complex biological factors (fatness and hyperinsulinemia), associated with improper or inadequate treatment, or because of nonconformity with a medical regime prescribed by the doctor.

Some patients may have suffered from pure refractory hypertension, while others may be the result of an excessive medical effect. In order to assess patients with excessive medical effect we need BP measures taken out of the clinical area [2] . Observing ambulatory BP with a noninvasive instrument [3,4] , gives us more illustrative values of BP compared to clinic BP, and the way BP behaves while the activity and sleep periods of time is noticeable. Some problem-based cohort researches have noticed that that ambulatory blood pressure measurement (ABPM) betters cardiovascular risk stratification above and under the traditional risk factors, which included office BP. The majority of these researches have been addressed to the average inhabitants [5.6.7] or in subjects with vital hypertension who were not treated when the execution of ABPM took place. [8,9,10,11,12,13] One of the main applications for ABPM is in the assessment of refractory hypertension. [14,15,16] We couldn't obtain too much confirmatory information about the predicted value of ABPM in subjects with refractory BP.

The goal of our research is to find out if ABPM gives a better evaluation of cardiovascular problem compared to the its clinical BP in an insignificant number of patients with refractory hypertension in our area of living.

MATERIAL AND METHODS

In this research we included a group of 75 subjects with refractory hypertension. A written informed agreement was given by all patients.

Regarding the decisions of the research design, the analysis, the collection, and the interpretation of the information and the intellectual content of the manuscript were made separately, without the implication of the sponsors from the pharmaceutical-industry.

There were the following inclusion characteristics:

a. clinical diastolic BP >100 mm Hg (Korotkoff phase V, sitting position) for three visits at 1-month intervals during the same antihypertensive treatment, which included three or more antihypertensive medicines, one of which was diuretic;
b. preserved renal function, glomerular filtration rate evaluated by endogenous creatinine clearance >60 mL/min per 1.73 m^2.
c. Patients of either sex whose age was 18 years or more.

The exclusion characteristics involved suspicion or indication of secondary hypertension, diabetes mellitus, recent stroke (occurring within the previous three months), recent acute myocardial infarction, recent hospitalizing for chronic heart failure, recent revascularization or planned cardiovascular intervention while the following three months, chronic obstructive pulmonary disease, any coexisting illnesses that could crucially reduce lifetime expectancy, heart transplantation, utilization of experimental medicines, pregnancy, and denial of undergoing repeated observation visits and ambulatory blood-pressure monitoring.

At the beginning of the research every patient had a whole clinical workup to exclude secondary hypertension and to evaluate the presence of end-organ injury.

Information was gathered about traditional cardiovascular risk factors, history of cardiovascular problems, present medicines, demographic and anthropometric information was put together. In that period, a sample of venous blood was achieved in order to evaluate base-line factors and we also acquired regular 12-lead electrocardiogram.

Office and Ambulatory Blood Pressure Measurements

For the measurement of blood pressure we followed the advice of the British Hypertension Society, in a tranquil area with a mercury sphygmomanometer with the patient in a sitting position after 5 minutes of rest [17].

We carried out ABPM using an oscillometric monitor on a usual working day, while the normal absorption of the ordinary antihypertensive treatment. Taking into account the standard protocol, readings were made at periods of time of not more than 30 minutes between 8 a.m. and 8 p.m. and at periods of not more than 60 minutes between 8 p.m. and 8 a.m. It was defined the daytime ambulatory blood pressure as that between 8 a.m. and 10 p.m., and nighttime ambulatory blood pressure as that between midnight and 6 a.m.

The mean of SBP, DBP, and mean blood pressure were taking into account for every one of the periods of time. The proportion between the means of BP while the day period and while the night period, day/night proportion, was determined as a calculation of circadian variability. Before starting the research, authenticity of BP values estimated with the monitor was examined against simultaneous measurements with a mercury sphygmomanometer. We allowed differences of <5 mm Hg. Those subjects with registrations showing an error rate in >25% of the total readings were taken out from the research. We divided the patients in three groups taking into account the mean of DBP while activity listed in ABPM, with the group A <90 mm Hg (n=24), group B 90 to 99 mm Hg (n=25), and group C >100 mm Hg (n=26).

Follow-up of the Patients

After the initial follow-up, patients were observed for a period of 48±6 months. An analogy of the occurrence of cardiovascular problems was made during the observation. In patients that experienced multiple non-deadly problems, the analysis included only the first problem. The cardiovascular problems included myocardial infarction, angina pectoris, stroke, unexpected death, congestive heart failure, hypertensive emergencies. Stroke was defined as a neurological deficit with unceasing signs for more than 24 hours or finishing in death without a likely cause other than a vascular cause. Transient ischemic attack was characterized as any unexpected focal neurological deficit that was completely cleared in less than 24 hours, being based on an evaluation made by a doctor. Acute myocardial infarction was claimed to appear in the presence of two of the following: typical chest ache, electrocardiographic alterations, and higher cardiac-enzyme concentrations.

Myocardial infarction was defined by excluding silent myocardial infarction. The definition of congestive heart failure needed the occurrence of symptoms, clinical symptoms, and urgency for treatment. Unexpected death was defined as any death of obscure reason that happened immediately or within 24 hours after the beginning of acute signs or any uncertified death for which no probable reason could be estimated based on the medical history. Angina pectoris was diagnosed when there was chest ache and certified electrocardiographic signs of coronary ischemia. Progressive heart failure was defined as signs when it appeared while the follow-up in subjects without former heart failure symptoms. Hypertensive emergency was defined, and it was only supposed to be appropriate, when symptoms were connected to papilledema in funduscopic examination.

Statistical Analysis

Values were given as average ± SD for each and every variable. We found the differences among groups by using t test and 2 for discontinuous variables.

Problem rates for new cardiovascular problems, while the time of follow-up are presented as the number of problems per 100 patient-years, taking into account the proportion of the noticed number of problems to the total number of patient-years of uncovering.

Table 1 – Primary Features of Participants

Characteristics	group A	group B	group C	P value
Risk factor				
Age (yr)	52±4	53±3	54±4	p=NS
Male sex	10/24	11/25	10/26	p=NS
Body mass index	28±4	30±5	34±6	p<0.001
Current smoking	10/24	16/25	20/26	P<0.001
Total serum cholesterol concentration (mg/dl)	240±20	250±15	245±18	p=NS
Office BP (mm Hg)				
Systolic	170±20	172±21	180±19	p=NS
Diastolic	105±5	108±6	110±8	p=NS
ABPM (mmHg)				
24 H systolic	132±18	140±14	165±15	p<0.001
24 H diastolic	78±6	93±5	100±7	p<0.001
Daytime systolic	135±17	143±13	169±14	p<0.001
Daytime diastolic	85±4	95±4	104±3	p<0.001
Nighttime systolic	125±16	130±12	142±16	p<0.001
Nighttime diastolic	75±5	80±9	90±8	p<0.001

Values are averages ± SD; the body-mass index is the weight in kilogram divided by square of height in meters

RESULTS

General Characteristics: 75 patients (46 men and 29 women; mean age, 53±9 years), all white, who performed the inclusion characteristics, were counted in the research. The follow-up period was 48±6 month.

The main clinical characteristics and BP values of the patients in each group are presented in table 1. We found no differences in what regards age, sex, or body mass index among three groups.

We can notice in table 1 the blood pressure value recorded from three groups. There didn't exist any important difference in office SBP and DBP value among groups.

In group C (group with daytime value of diastolic blood pressure >100 mmHg) the average values of both 24-hour ambulatory SBP and DBP and the value resulted while day and night periods were

Table 2 - Cardiovascular problems encountered while the follow-up period

Cardiovascular problems (n=26)	group A (n=24)	group B (n=25)	group C
Stroke	1	4	5
Coronary heart disease	1	4	4
Progression of cardiac failure	1	2	2
Hypertensive emergency	1	2	3
Total problems	4 (16,6%)	12 (48%)	14 (53%)

enormously greater ($p<0.001$) than in the other two groups, in connection to higher occurrences of smokers and a great value of body mass index.

Average time of observation was 48±6 months. While performing the follow-up, 30 subjects suffered cardiovascular problems (10 with stroke, 9 with coronary heart disease, myocardial infarction, or angina pectoris; 5 with progressive heart failure; 6 with hypertensive emergency), as shown in table 2.

The occurrence of new cardiovascular problems was numerically much more reduced in group A (4 events) compared to group B and C (12 events, respectively 14 events), $p<0.001$, with no numerically significant alteration among the two groups with greatest ambulatory B, p=NS.

DISCUSSION

By comparison to other researches with a period of follow-up of 49 months, 86 hypertensive subjects with refractory hypertension, defined as the occurrence of an office DBP 100 mm Hg while being administrated an appropriate mixture of three or more antihypertensive medicines we recorded 21 cardiovascular problems.

The danger of a cardiovascular problem was increasingly greater for the subjects who formerly presented a cardiovascular problem and for those who suffered from a greater ambulatory BP at the time of addition.

We observed a difference between office and AMBP in this research that could happen because of the "white coat effect".[18, 19] Gosse and partners[18] gathered information from 154 patients and observed the presence of the medical effect having the same percent of patients both before and 3 months after treatment.

ABPM was made known in hypertension research and in clinical practice due to the values of ambulatory BP are more reproducible than office BP, both in normotensive and also in hypertensive subjects, disregarding the age of the patients [20].

We gathered many proofs that showed ambulatory BP is compared more closely than office pressure does with target organ injury, as symbolized by left ventricular hypertrophy and microalbuminuria in either hypertensive or normotensive type 1 of diabetes mellitus.[20, 21].

The restrictions of this research are the following: limited number of patients, the subjects study in this paper are represented by a group with high cardiovascular risk and the antihypertensive treatment are very distinct among study groups. We have to evaluate in our next researches whether or not ambulatory BP values during a long follow-up period are a more proper prediction instrument in comparison to office BP when we assess refractory hypertensive patients.

CONCLUSION

In what regards subjects with refractory hypertension a greater value in ambulatory blood pressure measures is connected to a more proper prediction of new cardiovascular problems that cause the office blood pressure measurement.

Nevertheless, more researches are requested in order to evaluate in a more proper way the prediction value of ambulatory BP to stratify cardiovascular risk in patients with refractory hypertension.

REFERENCE

1. Setaro JF, Black HR. Refractory hypertension. N Engl J Med. 1992;327:543–547
2. Pickering TG. Blood pressure monitoring outside the office for the evaluation of patients with resistant hypertension. Hypertension. 1988;11(suppl II):II-96-II-100.
3. Mancia G, Parati G, Pomidossi G, de Rienzo M. Validity and usefulness of noninvasive ambulatory blood pressure monitoring. J Hypertens. 1985;3(suppl 2):S5–S11.
4. Pickering TG, Harshfield GA, Kleinert HD, Blank S, Laragh JH. Blood pressure during normal daily activities, sleep and exercise. JAMA. 1982;247:992–996.
5. Imai Y, Ohkubo T, Tsuji I, Nagai K, Satoh H, Hisamichi S, Abe K. Prognostic value of ambulatory and home blood pressure measurements in comparison to screening blood pressure measurements: a pilot study in Ohasama. Blood Press Monit. 1996;1(suppl 2):S51–S58.
6. Ohkubo T, Imai Y, Tsuji I, Nagai K, Watanabe N, Minami N, Itoh O, Bando T, Sakuma M, Fukao A, Satoh H, Hisamichi, Abe K. Prediction of mortality by ambulatory blood pressure monitoring versus screening blood pressure measurements: a pilot study in Ohasama. J Hypertens. 1997;15:357–364
7. Ohkubo T, Imai Y, Tsuji I, Nagai K, Watanabe N, Minami N, Kato J, Kikuchi N, Nishiyama A, Aihara A, Sekino M, Satoh H. Relation between nocturnal decline in blood pressure and mortality: the Ohasama study. Am J Hypertens. 1997;10:1201–1207
8. Verdecchia P, Porcellati C, Schillaci G, Borgioni C, Ciucci A, Battistelli M, Guerrieri M, Gatteschi C, Zampi I, Santucci A, Santucci C, Reboldi G. Ambulatory blood pressure: an independent predictor of prognosis in essential hypertension. Hypertension. 1994;24:793–801
9. Verdecchia P, Borgioni C, Ciucci A, Gattobigio RP, Schillaci G, Sacchi N, Santucci A, Santucci C, Reboldi G, Porcellati C. Prognostic significance of blood pressure variability in essential hypertension. Blood Press Monit. 1996;1:3–11
10. Verdecchia P, Schillaci G, Borgioni C, Ciucci A, Porcellati C. Prognostic significance of the white-coat effect. Hypertension. 1997;29:1218–1224

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INTERCEPTIVE THERAPY

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ABSTRACT

The term of "interception" was first introduced by Cheney in 1958.

"The term interceptive orthodontics designates the detection of incipient or mild forms of dental-maxillary abnormalities, by active detection and implementation of measures for the prevention of veritable malocclusions or for the reduction of orthodontic treatment to some simple measures" (Grivu et al. 1978).

The role of interceptive orthodontics is also defined by Graber (1986): "Its purpose is to eliminate any existent pathogenetic factor and to minimize the harmful consequences of etiologic factors on dentition".

Thus, interceptive therapy is one of the first mandatory steps of the complex treatment of a dental-maxillary abnormality.

Key Words: interception, dental-maxillary abnormality, occlusion disbalance.

INTRODUCTION

The highest success of interceptive treatment is obtained in temporary dentition. Its objectives are: "the elimination of obstacles in the way of normal development of the dental-maxillary apparatus or of restoration of its normal functions" (Mayers, 1984).

Starting with their definition, the objectives of interceptive treatment focus on: detection of minor skeletal disbalances, removal of causing agents, ensuring optimal conditions for the development and conserving of normal relations between the maxillary basis and the basis of the skull. They, also, aim at detecting disturbances during the period when temporary teeth on the arch are lost and permanent teeth erupt, but also at the detection of occlusal-articular disbalances and the rebalancing of the occlusion.

Dimension or direction disturbances which may occur between the maxillary basis are minor disbalances which, in most cases, are the expression of some general diseases: late expression chromosomial syndroms, metabolic disbalances or disturbed activity of the neuro-endocrine system.

The interception of these disbalances by the dentist imperatively requires cooperation with pediatric endocrinologists and genetics specialists in order to regulate the general disbalance. This will further lead to the normalization of the rhythm and rate of cranio-maxillo-facial growth.

The gaps between the period when temporary teeth are lost and the eruption of permament teeth have consequences which vary from delays in the eruption of the permenent tooth to dental-alveolar and occlusal-articular disbalances.

Orthodontic interception measures include: extraction, dental surveillance throughout the entire period of permament tooth eruption and its occlusion with the antagonist, straightening of modified

implantation axis, occlusal-articular rebalancing.

Equally important as the delayed eruption is the early loss of temporary teeth on the arch, with gradual reduction or disappearance of the space needed for the permanent tooth. Thus, regaining its space and maintaining it until the eruption and full function of the permament tooth occur, are the interceptive orthodontic measures of choice.

The early diagnosis and treatment of occlusal disbalances ensure the balanced developemnt of the dental-maxillary apparatus. The dentist has an important role in: detecting the cause and area in which the functional disturbance occurs, establishing the degree of disbalance and the evolution trend, then in the removal of the cause followed by surveillance. Sometimes minor therapeutic interventions are also needed.

The first step the dentist has to take in order to reach the proposed objectives is a thorough clinical examination, completed by functional explorations.

The following aspects will be examined: static and dynamic occlusion, dental and maxillary relations in habitual occlusion, postural relation of the mandibula, maximal intercuspidation and the centric relation. Thus, with the aid of study models, articulators, articulation paper, early contacts and occlusal interferences will be detected.

The exploration of the activity of muscular groups is done by clinical tests, and if necessary, these may be completed by electromyographic examination.

In case of occlusal or even articular disbalances, produced by early contacts, selective polishing proves to be the effective measure for reestablishing the occlusal-articular balance. It is especially indicated in temporary teeth, while in permanent ones it is used as a back up measue in case of failure of the other orthodontic procedures.

Early detection of abnormal dental eruption axis and their correction to the point where the tooth enters occlusion, or as early as possible after occlusion is achieved, are effective measures in the interceptive treatment of abnormalities. In each individual case, the correction may be achieved either with simple devices or, if the case requires, with complex orthodontic devices.

If therapeutic orthodontic measures are not sufficient, surgical-orthodontic treatmemnts may be performed.

The prophylactic and interceptive treatment of dental-maxillary abnormalities varies according to the moment of intervention, depending on the proposed objectives and the means by which these are accomplished.

As early as the intrauterine period and the moment of birth, the balanced development of the embrio and of the foetus are pursued, with repercussions on the balanced development of maxillaries and teeth.

The first stage of the interceptive treatment consists of the detection of general development and dental-maxillary disbalances. Thus, congenital and hereditary abnormalities expressed at the moment of birth will be underlined.

During the first six months of life, the maxillary development will be monitored along with the general balanced growth. This will be achieved by a thorough oral hygiene of the infant, while preventing general diseases.

During the eruption of temporary teeth, between the ages of 6 months and 2 and a half years, the surveillance of dental eruption and occlusion development will also benefit from an appropriate nutritional prophylaxis added to the above mentioned means.

Then, until the age of 6, the growth of maxillary bones and the development of teeth and of the occlusion will be monitored, by maintaining the state of dental-periodontal health and occlusal-articular balance. The measures taken at this age are complex:

- oral hygiene measures in the community and in the family
- nutritional prophylaxis by removing cariogenetic foods

- functional prophylaxis, acquired by functional balance, eradication of harmful habits
- fluoride application – general or local
- sealings
- general or local health monitoring every 3 – 6 months
- currative treatments for odontal reconstruction, restoring the integrity of dental-alveolar arches by space maintainers
- surveillance of permanent teeth eruption.

Between the ages of 6 and 12, i.e. during the period of mixed dentition, three major objectives are pursued: exfoliation of temporary teeth, eruption of permanent teeth and stabilization of dental occlusion, by maintaining the state of health in the supporting area. For the achievement of the objectives, all the above mentioned measures will be taken into consideration.

As previously seen, most interceptive treatments are practiced in temporary teeth.

According to Mayers (1988), the situations to be solved during this period are the following:

- crossbites and frontal inverted occlusions
- early loss of temporary teeth with closure of the residual space
- persistence of temporary incisors which interfere with the normal eruption of permanent teeth
- malpositioned teeth which interfere with the function or induce wrong patterns of mandibular closure
- all habits causing abnormal functions or disturbing development.

Grivu et al. (1984) recommend the correction of distalized occlusions, successfully using for that purpose the lip shield and the open bites, by neuromuscular reocclusions by tongue interposition of finger suckling. The means of interceptive therapy during the stage of temporary dentition are as follows:

- Saulet-Besombes devices, which allow the correction of inverted frontal occlusion starting at the age of 18 months
- mobile or removable devices for solving crossbites
- space maintainers in case of early dental loss (Bratu et al., 1984)
- extraction of persisting temporary incisors or of malpositioned teeth
- eradication of oral habits, often leading to spontaneous normalization of the dental-maxillary apparatus, if the eradication is achieved around the age of 3 years (Grivu et al., 1975)
- functional reduction, with respect to atypical swallowing and to abnormal lingual behaviour by neuromuscular reeducation methods.

DISCUSSIONS

Simple devices, such as those of Tucat, which favour tongue positioning, or of Martine, which suppress the pleasure of tongue suckling, will be reeducation adjuvants.

As underlined by Guillain (1976), interceptive therapy also contributes to the fight against the three major pathologic risks of childhood:

- infectious diseases which are fought against by cleansing the oral-dental environment
- nutrition disturbances – by an improved mastication and an increased oxygenation due to functional orthopedics
- psycho-somatic disorders – by improving facial esthetics (Grivu et al, 1982).

By its pursued objectives and therapeutic means, interceptive orthodontics creates a connecting bridge between dentistry and general medicine, between orthodontics and pediatrics, respectively.

REFERENCES

1. Angle, E.H. Dr. The Treatment of Malocclusion of the Teeth. Ed 7. Chapter 2. Saunders Philadelphia:1907.
2. Ackerman, I. L. and Proffit W. R. (1980) Preventive and interceptive orthodontics: a strong theory proves weak in practice, Angle Orthodontist, 50, 75–86.
3. Ahlgren J. EMG studies of lip and cheek activity in sucking habits. Swed Dent J. 1995;19(3):95-101.
4. Cleal JF. Deglutition a study of form and function. Am J Orthod. 1965;51(1):566-94.
5. Freeman, I. D. (1977) Preventive and interceptive orthodontics: a critical review and the results of a clinical study, Journal of Preventive Dentistry, 4, 7–23.
6. Graber, T, Vanarsdall, Robert L Jnr, Orthodontics Current Principles and Techniques, Third Edition, St. Louis, Missouri, Mosby Inc. 2000.
7. Gustaffson M, Ahlgren J. Mentalis and orbicularis oris activity in children with incompetent lips on electromyographic and cephalometric study. Acta Odont. Scand. 1975;33(1):355-63.
8. Linder- Aronson S, Woodside D, Lundstrom A, McWilliam J – Mandibular and maxillary growth after changed mode of breathing. Am Journal Orthod Dentofac Orthop 1991;100:1-18.
9. Lowe AA, Takada K. Associations between anterior temporal, masseter and orbiculares oris muscle activity and craniofacial morphology in children. Am J Orthod. 1984;86(4):319-30.
10. Pfeiffer JP, Grobét D. A philosophy of combined orthopedicorthodontic.Am J Orthod. 1982;81(3):185-201.
11. Proffit WR, Fields HW.: Contemporary Orthodontics, 2001 Mosby.
12. Woodside, D. G. (1996) Interceptive orthodontics, Keynote address, European Orthodontic Society Conference, Abstracts p.19.

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TEXTURE OF RADICULAR SURFACES FOLLOWING TREATMENT WITH VARIOUS ETCHING AGENTS

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ABSTRACT

The removal of the smear layer which is inevitably formed when dentine is mechanically denudated, associated with the exposure of collagen extremities by acid etching proved to favour periodontal healing.

Key Words: EDTA, acid etching, smear-layer.

INTRODUCTION

The complete mechanical removal of tartar and the smoothening of contaminated cementum surfaces proved insufficient in the case of some periodontal treatments. For this reason, various methods of detoxification for the root surfaces have been designed, of which acid etching may be observed. The etching does not involve surface erosion or total removal of the superficial layer, its purpose being the removal of bacterial toxins and of some substances and exposure of collagen endings.

OBJECTIVE

The purpose of the study is to reveal that the type of etching also influences the dynamics of periodontal healing.

MATERIAL AND METHOD

In the experiment, we used 56 teeth from dogs (Institute of Veterinary Medicine – Timişoara) aged between 3 – 4 years. The teeth were extracted and the radicular surface was smoothened in the middle third with an abrasive disk. During preparation of surfaces, these were permanently irrigated with saline solution. The teeth were divided into 14 groups of four pieces each. Two groups of teeth were used as control models – one group without further treatment and the other on which a buffer solution (pH 7.2) was applied with a cotton swab for 3 minutes. The exposed dentine surfaces (following removal of the cementum layer) in the other 12 groups were treated with watery solutions of citric acid (pH 0.1), 37% phosphoric acid (pH 1.0) or 24% EDTA (pH 7.0) for 20 seconds or 3 minutes, by swabbing. In cases when the application was performed for 3 minutes, the cotton swabs were changed every 60 seconds. Following the agreed protocol, teeth were irrigated with saline solution for 5 minutes, in order to eliminate the etching substance in excess, and prepared for the electron microscopy analysis.

RESULTS

The control group – The dentine surfaces of teeth in both control groups were covered with a fine smear layer, interrupted by grooves and micro-craters. The control group in which the buffer solution was applied (pH 7.2) showed much more evident discontinuities of the fine smear layer.

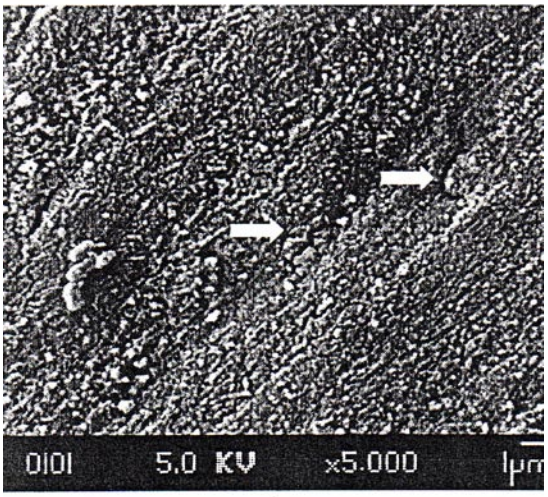

Fig. 1 - Dentine surface covered by a fine, homogenous smear layer interrupted by grooves or orifices, corresponding to the apertures of dentine tubules (MEB×5.000, 5kV). Dentine surface of teeth in the control group.

Application of the etching agent by swabbing for 20 seconds

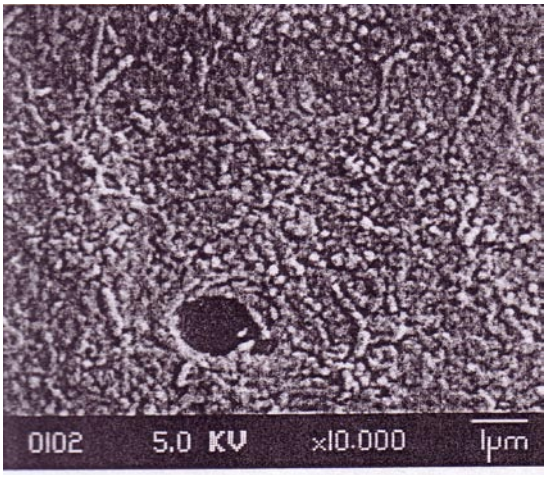

Fig. 2 - Granular aspect of the dentine surface following the application of phosphoric acid by swabbing for 20 seconds (MEB×10.000, 5kV).

The surfaces treated in this manner with phosphoric acid showed a granular, almost smooth aspect.

The surfaces treated with citric acid showed a similar aspect to that encountered when phosphoric acid was applied, but in this case the fibers in the debris layer are closer to the dentine tubules, sometimes being observable even inside these tubules.

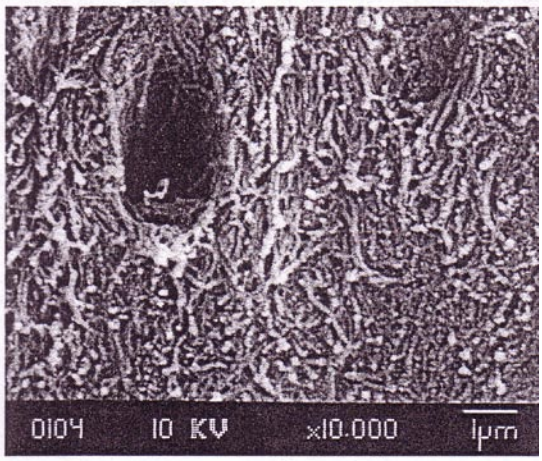

Fig. 3 - Aspect rich in fibers of inter-tubular dentine areas, sometimes fibers being prominent inside dentine tubules. 20 seconds EDTA treated dentine surface (MEB×10.000, 10kV).

Application of the etching agent by swabbing for 3 minutes

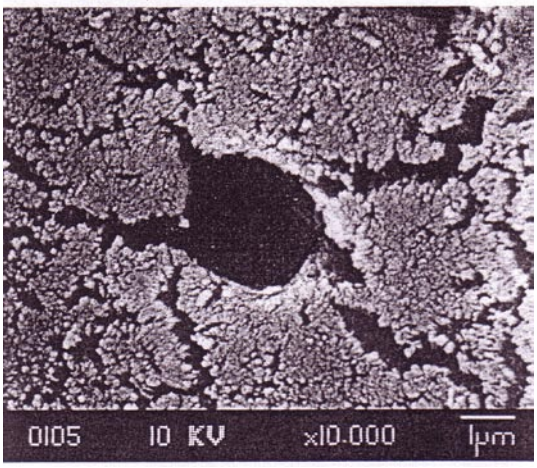

Fig. 4 - Inter-tubular dentine with radiant fissures stemming from dentine tubules. Notice the mosaic texture given by micro-fissures present in the spaces between fissures. Dentine surface treated with phosphoric acid (applied by swabbing) for 3 minutes, changing the swab every 60 seconds (MEB×10.000, 10kV).

The EDTA treated surfaces presented on the inter-tubular dentine areas a rich fiber network, some of which being also prominent inside dentine tubules.

In the case of 3 minutes phosphoric acid treatment, inter-tubular dentine showed discrete fissures on the entire surface, some of these stemming from dentine tubules and having a radiant aspect.

The surface between fissures showed a mosaic texture with multiple micro-fissures. So, H3PO4 proved to be a highly brutally acting acid.

The surfaces treated with citric acid had a granular aspect, with fibers and fissures present in the inter-tubular dentine. In the case of EDTA treated surfaces, a dense network of fibers was observed on the inter-tubular dentine and inside the tubules.

No fissures were observed.

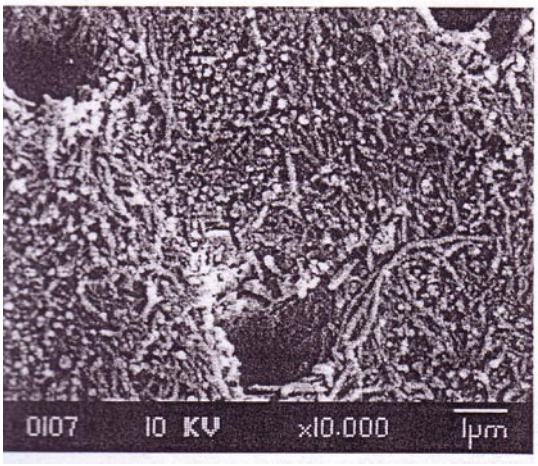

Fig. 5 - Dense fiber network covering inter-tubular dentine and prominent inside the tubules. EDTA treated dentine surface for 3 minutes. The etching solution was replaced every 60 seconds (MEB×10.000, 10kV).

CONCLUSIONS

The study demonstrated that the application of EDTA without taking the duration into account or of citric acid for 20 seconds leads to the removal of debris and selective removal of minerals on the dentine surface, exposing a collagen matrix similar to that encountered in the case of non-mineralized dentine.

This conclusion is not valid in the case of phosphoric acid application for 3 minutes on denudated dentine radicular surfaces, when both the mineral and the collagen dentine layers are removed.

The data in the present study reveal that the 20 seconds etching (regardless of the etching agent) is enough to detoxify inter-tubular dentine surfaces.

The smear layer on dentine tubules was removed only in cases when the etching was applied for 3 minutes.

EDTA treated surfaces proved to be more suitable for cellular colonization and consecutive formation of connective tissue in comparison with phosphoric acid treated ones.

In conclusion, we may state that EDTA, acting at a neutral pH, is selective, exposing the collagen matrix which is a favourable substrate for periodontal healing.

REFERENCES

1. LBAIR WB, COBB CM, KILLOY WJ.Connective tissue attachment to periodontally diseased root after citric acid demineralization. J Periodontal 1982; 53:515-526.
2. Beube FE.A radiographic and histological study on reattachment. J Periodontol 1952; 23:158-164
3. BLOMLOF L, LINDSKOG S, APPELGREN R, JONSSON B, WEINTRAUB A, HAMMARSTROM L.- New attachment in monkeys with experimental periodontitis with and without removal of the cement. J Clin Periodontol 1987;14:136143
4. Bowers G, Chadroff B, Carnevale R. Histologic evaluation of new attachment apparatus formation in humans. Part m. J Periodontol 1989;60:683-693
5. BOYKO GA, BRUNETTE DM, MELCHER AH.- Cell attachment to demineralized root surface in vitro. J Periodont Res 1980; 15:297-303
6. BRAIN EB.- The preparation of decalcified section. Springfield: Charles C Thomas, 1966; 101-103
7. BRANNSTROM M, GARBEROGLIO R.- The dentinal tubulus and the odontoblast processes. A scanning microscope study. Acta Odont Scand 1972; 30:291-298

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ERNEST BERNEA – CONTRIBUTIONS TO DEFINING ROMANIAN ETHNOLOGY

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ABSTRACT

Romanian ethnology has tried to undermine the old relationships between tradition and modernism, guiding our post-war society towards a natural trend of dismantling obsolete myths and archetypes. Following this trend, Ernest Bernea has conducted a thorough and comprehensive research activity trying to interpret traditional values in the frame of a European paradigm. The study focuses on the way in which shedding various ideologies and nationalist concepts helped Romanian society embrace the principles of modernism.

Keywords: ethnology, modernism, traditionalism, cultural values

INTRODUCTION

Built around the values of independence, the national being has an "eccentric" construction, its coherence centre being situated somewhat outside it, always aiming at the frontiers of its independence and, thus, always vulnerable to the real or imaginary threats to these frontiers. (…)

Connected to these dimension of our unfulfilled modernism, a second dimension emerges, one that paradoxically links modernism to tradition. Modernism starts when society denies its cultural origin. It pretends to be its own origin, inventing a homogeneous and desecrated space, continually expanding its frontiers.

This has been, in fact, from the very beginning, the seed of contention between traditionalists and modernists, that reached its climax in the mid 20th century Romania. Traditionalists, even the most moderate and the most objective ones, fear that modernism might wipe out for good the patterns of archaic Romanian culture.

Consequently, the ethnological discourse in the inter-war Romanian cultural area took on an active role in "shaping the national being", thus sharing the values that had a bearing on the development of this project. Perpetuated by the routine of methodological and conceptual practices, these values established themselves in the very core of the ethnological discourse, continually shaping it.

The scientific thinking of this period has been recurrently systematized by certain ideological tendencies.

In the early 1920s, Romania was an agricultural country, with only 20 percent of its population (in 1930) living in cities [1]. Secondly, with the twofold increase of its population, the state assimilated a significant number of non-Romanian ethnics. In 1930, the latter represented 30 per cent of Romania's population, versus eight per cent in the Old Kingdom (before 1918). The bulk of the non-Romanian population was located in the assimilated territories: a significant Hungarian minority, Germans and Jews in Transylvania; Germans, Jews and Ukrainians in Bucovina; Russians and Jews in Bassarabia. The very low percentage of

Romanians living in cities and, mainly, in liberal professions, turned the project of national engineering into one extremely difficult to achieve, as Germans, Hungarians and Jews formed a large majority in the cities of Transylvania and the Banat, while Russians and Jews predominated in Bassarabia.

Although Romanians formed a relative or even an absolute majority in all the provinces, they mainly represented the rural population. That is why the Romanian peasant became "the common denominator for all the provinces, old and new".

The interest of ethnologists consequently focused on the rural background. This was due not only to the fact that the village represented, symbolically speaking, "the nucleus of the Romanian spirit", a recently tempered national feeling, but also to the fact that the village represented the only means of national triumph for those who saw in the peasant a role-model and ideal archetype.

The process followed an ascending path and culminated with the Great Union, at the end of 1918, which represented the supreme triumph of the democratic and national spirit. In Romania, democracy was neither born nor set up following a national catastrophe (as in France, in 1871; Germany, in 1918 or 1945), a severe crisis (the South African Republic in the latest years, or communist Russia in the last decade), or the breaking up of the state (Austria after the fall of the Habsburg Empire). Romanian democracy coincided with the national victory, with the moments which, all along modern history, associate democracy with nationalism and mass reforms, and with the accomplishment of a further issue in its social agenda.

According to Ernest Bernea, one of the natural consequences of the great transformations taking place in the contemporary world – transformations that impinge on the very foundations of our civilization - is the way in which education has to be understood and undertaken. Different traditions and aspirations, the new elements recently included in history, and the impossibility of applying a unitary life style that should suddenly match concrete reality and the superior human condition result in severe difficulties when it comes down to solving the problem of education [2].

Normally, tradition is perceived as an unchanged structural element, a body of texts that have been handed down through time, in their entirety and unaltered, carrying the same ritualistic power.

This seems to be the case when we refer to the tradition of the Eliade generation, currently claimed by various "philosophical" trends, by various cultural ideologies and, eventually, by various political ideologies that are linked by a single common denominator: the fear of the possible consequences of any intellectual opening to the outside world and the reverse desire of cultural isolation.

REFERENCES

1. Liviu Chelcea, Nationalism and Regionalism in the Banat, în „Journal of Social Research", 2/1997, p. 27
2. Ernest Bernea, Pedagigical Trilogy, Cluj-Napoca, Editura Dacia, 2002, p. 11
3. Neculau, Radu, Reinventarea tradiției, în Revista de cercetări sociale, anul 1, nr. 2/1994
4. Chelcea, Livius, Naționalism şi regionalism în Banat în perioada interbelică: competiție pentru resurse, elite şi discursuri culturale, în Revista de cercetări sociale, anul IV, nr. 2, 1997
5. Bernea, Trilogie pedagogică, Cluj-Napoca, Editura Dacia, 2002

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INTERCEPTIVE ORTHODONTICS – THE TRAINER SYSTEM™

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ABSTRACT

The term interceptive orthodontics used in this paper is defined as the prompt treatment of unfavourable features of a developing occlusion categorized as local factors, crowding and displacements of the mandible in closing from the rest position. Preventive and/or interceptive orthodontics in the mixed dentition implies several different possibilities, namely, (a) the guiding of erupting permanent teeth into an ideal position; (b) using simplified procedures that produce a savings of time and effort; (c) obtaining a more stable early result with less retention problems; (d) avoidance of extraction of permanent teeth by utilizing the additional deciduous posterior tooth mass, distalization and/or expansion of posterior segments. These are compelling reasons for early treatment and historically there has been great interest in early interventive orthodontics beginning over 70 years ago1 and becoming quite popular from 1950 to 19752-11.

Keywords: interceptive orthodontics, mixed dentition, trainer, myofunctional habits.

INTRODUCTION

Some orthodontists apply the term to any treatment in the mixed dentition which will prevent the establishment of a malocclusion, partially or totally (Bass, 1996), others favour early appliance therapy as an optional alternative to treating malocclusions after the permanent dentition is established or as a preliminary phase of treatment (Woodside, 1996). Those who favour early treatment are guided by the principle of promoting developmental changes which are favourable and of suppressing features which are unfavourable.

Mouth breathing, tongue thrusting, incorrect swallowing and other myofunctional habits can cause MALOCCLUSION, POOR FACIAL DEVELOPMENT & RELAPSE. Soft Tissue Dysfunction can also cause unstable orthodontics and TMJ Disorder. The influence of myofunctional habits on cranio-facial development and orthodontic problems has regularly been reported in publications since the era of Edward Angle. More recent studies show that crowded teeth and jaw discrepancies are not always hereditary, but can be caused by the way a child swallows and breathes. The soft tissues control dental position and should be treated in conjunction with any orthodontic appliance therapy. Research shows the position of the teeth is determined by the lips and tongue.

The TRAINER System™ was developed to incorporate the philosophy of

myofunctional therapy and tooth alignment into a single size, easy to use appliance. All appliances are designed to actively retrain the mode of the tongue, the peri-oral muscles of the mouth, correct breathing habits, and align the anterior dentition. In the mixed dentition this greatly assists with both dental and facial development.

Habit Correction Improving Facial and Dental Development

The Myofunctional Effect™ is built into all TRAINER System™ appliances. Myofunctional therapists, after diagnosing a soft tissue dysfunction, start with treatment involving correct placement of the tongue tip at rest. Correct swallowing starts from this "tongue on the spot" exercise. The tongue tag mimics this exercise as, when in place, the tongue is trained to this position, automatically going to the raised part on the tongue tag. The tongue guard stops the tongue from thrusting between the teeth. This, combined with the lip bumper, prevents contact between the tongue and lower lip during swallowing, breaking the hyperactive mentalis activity of the incorrect (reverse) swallowing pattern. Added to this, the patient is forced to breathe through the nose, further reinforcing the tongue into its correct upward positioning in the maxilla and moving the mandible into the correct class I position.

Fig. 1 - T4K™ the pre-orthodontic trainer.

MATERIAL AND METHODS

The aim of this study was to assess the effect of myofunctional therapy on proper facial development. 20 children of both sexes in age from 5 to 12 years, with mixed or/an permanent dentition and different grades of malocclusion were selected and we applied myofunctional appliances. The essentials of myofunctional therapy are complex but can be focussed on a few basic principles. The first myofunctional exercise is to position the tongue tip correctly at rest and to obtain lip seal. This is well known among those of the Speech Pathology profession, who have advocated for many years the power of adjunctive myofunctional therapy for assisting difficult orthodontic cases. The TRAINER system merely uses a single size prefabricated appliance to achieve a similar therapy. This removes the need for one to one professional training and tedious exercise programs for the child.

DISCUSSIONS

Muscles carry out a modeling performance on bones and dental arches, whether at rest or during stomatognathic system function. Since our bones and teeth react to forces that work on them, consequently, strong and well-developed muscles are related to bones in good shape. When these forces are unbalanced, they misact over the occlusion and the teeth loose their correct axial inclination while searching for other balanced position, thereby harming the dental arches and leading to dentofacial distortions.

The most compelling reasons for a serious reconsideration of early P and I orthodontics in the mixed dentition are fourfold. First, that treatment is begun prior to complete collagenous fiber bundle formation on as many teeth as possible so that when they erupt into the proper position horizontally and vertically, future relapse tendencies are lessened. Most relapse, certainly of rotations and possibly of vertical and horizontal drift as well may at least be partially due to treatment procedures done after complete formation

Fig. 2 - T4K™ the pre-orthodontic trainer, clinical case, a class II division 1: before and after.

of the supra-alveolar collagenous fibers. These fibers increase in thickness in response to functional and stretching both of which are present during standard fixed appliance therapy. If treatment is begun before the teeth are fully erupted, they can be gently guided into position and completely straightened prior to their fiber formation, thereby theoretically eliminating part of this relapse tendency.

Second, that treatment is begun early enough in a child's life that adequate facial growth in the horizontal and/or vertical direction to fully compensate for the correction of overjet and overbite is present. This is particularly critical in moderate to severe discrepancies (over 6 mm.) in both sexes but particularly in the female. If inadequate growth is present, greater relapse can be expected. The third reason for P and I orthodontics is that more can be done with the arches and teeth in the mixed dentition through successful expansion and utilizing the extra space allowed by the greater tooth mass of the deciduous posterior teeth. Up to about 7 mm. of anterior incisal crowding can be compensated thereby eliminating the need for extraction of bicuspids in about 50% of typical orthodontic extraction cases.

CONCLUSIONS

Functional appliances deal orthopedically with growth, particularly evident in the suppression of forward maxillary growth, as well as a possible influence on the appositional restructuring of the glenoid fossa and growth of the mandible.

Interceptive measures may have the advantage of simplicity and economy, but they must be applied at critical stages of development. Early detection of orthodontic abnormalities and interception is presently in the hands of the general dental practitioner.

The optimum advantage of the TRAINER technique is that it is fundamentally NOT orthodontic. The correction of mouth breathing, lip and tongue habits, and redirecting not growth but muscle forces, are the primary objectives of the seemingly unintrusive, flexible appliance system either for the mixed dentition in brackets or in the permanent dentition.

REFERENCES

1. Ahlgren J. EMG studies of lip and cheek activity in sucking habits. Swed Dent J. 1995;19(3):95-101.
2. Anderson BD. Multiple extraction patterns in severe discrepancy cases. Angle Orthod. 1975;45(4):291-303.
3. Bishara SE, Cummins DM, Jakobuen JR. Treatment and posttreatment changes in patients with Class II/1, malocclusion after extraction and nonextraction treatment. Am J Orthod Orthop. 1997;111(1):18-27.
4. Graber T. "The Three M's. Muscles, Malformation and Malocclusion." Am J Ortho Dentofac Orthop.1963 June 418-450.
5. Graber, T, Vanarsdall, Robert L Jnr, Orthodontics Current Principles and Techniques, Third Edition, St.Louis, Missouri, Mosby Inc. 2000.
6. Turpin D L, Am J Ortho Dentofac Orthop May 2003; 123:487.
7. Otopalik, Brown H, DDS., Am J Ortho Dentofac Orthop. Vol 113 No.6, June 1998.
8. Shapiro, P A, DDS, MSD Seattle, Wash. Am J Ortho Dentofac Orthop. Vol 121 No 6, June 2002.
9. Bresolin, G, DDS, MSD, Shapiro, G, MD and Dassel, S, MD Am J Ortho Dentofac Orthop March 1983.
10. Simons, M.E. and Joondeph, D.R.: Change in overbite: A ten-year postretention study, Am. J. Orthod., 64: 349-367, 1973.

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EXPERIMENTAL STUDIES ON MICROPLASMA AND LASER WELDED DISSIMILAR JOINTS USED IN DENTAL TECHNOLOGY

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ABSTRACT

Purpose: The aim of the study was to evaluate dissimilar joints of base metal alloys used in dental technology by destructive and nondestructive analyses.

Materials and methods: Two types of base metal alloys with dissimilar elemental compositions were used in this study. The samples were cast using classical technologies and were microplasma and laser welded, without and with filling material. They were analyzed macroscopically, radiographic, metallographic, and the microhardness was determined in the base metal (BM), weld metal (WM) and heat affected zone (HAZ).

Results: Welding discontinuities were detected during the nondestructive analyses. The microstructure of the WM appeared very fine. The precipitates increased the hardness in the HAZ, which may lead to fragile areas.

Conclusions: The experimental tests demonstrated that dissimilar welding can be applied with succes in the technology of high precision combined dentures.

Key words: dissimilar welding, microplasma welding, laser welding, base metal alloys.

INTRODUCTION

Sometimes in dental technology, it is required to connect metallic frameworks of different alloys compositions in order to obtain stability and high precision. Therefore, it is important to know now well the welding behavior of the different types of alloys (12). Joining dissimilar materials in dental technology became inevitable for technical reasons. The adoption of dissimilar alloys combinations provides possibilities for a flexible design of the product by using each material efficiently and benefiting from the specific properties of each material in a functional way. Needing higher efficiencies in dental technology necessitate the use of new joining methods. Laser and microplasma welding are the most recent welding techniques available in dental laboratory (6, 7). Welding can be used in dental laboratory for manufacturing or repairing metallic frameworks. Weldments are made from alloys of different compositions in some applications. A successful weld between dissimilar alloys is one that is as strong as the weaker of the two metals being joined. The mechanical strength of welded joints is important in terms of the longevity of the prostheses. The importance and advantages of dissimilar welding for combined dentures implies experimental studies to achieve an optimal welding technique (13).

PURPOSE:

The aim of the study was to evaluate dissimilar joints of base metal alloys used in dental technology by destructive (metallographic, microhardness measurements) and nondestructive analyses (visual inspection, radiographic methods).

MATERIALS AND METHODS:

Two types of base metal alloys with dissimilar elemental compositions were used in this study. The first one is a Ni-Cr alloy Wiron 99 (Bego, Bremen, Germany) indicated for fixed prostheses frameworks and the other one is a Co-Cr alloy Wironit extrahard (Bego, Bremen, Germany) indicated for removable partial dentures frameworks.

For the experimental studies twelve wax plates patterns of 0.8 mm x 10 mm x 20 mm prepared and cast using classical technologies. After preparing the surfaces to be welded, the plates were matched and welded. Half were microplasma and half laser welded. Both procedures were used for welding without filling material, bilaterally, in a butt joint configuration and with filling material on one side. As filling material Ni-Cr and Co-Cr wires were used. Six samples resulted (Table 1).

Table 1. Experimental welded samples.

Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6
Wiron 99+ Wironit extrahard	Wiron 99+ Wironit extrahard	Wiron 99+ Wironit extrahard	Wiron 99+ Wironit extrahard	Wiron 99+ Wironit extrahard	Wiron 99+ Wironit extrahard
Laser welded			Microplasma welded		
Without filling material	With Co-Cr filling material	With Ni-Cr filling material	Without filling material	With Co-Cr filling material	With Ni-Cr filling material

The measurements for the nondestructive tests were made using ImageJ software. Microscopic observations were made using an inverted metallographic microscope for the base metal (BM), weld metal (WM) and heat affected zone (HAZ). Microhardness (HV) testing was performed on the polished surface of the samples using a Vickers hardness intender at room temperature.

RESULTS:

During visual inspection, welding discontinuities, like an nonuniform width of the welding rib, especially at the microplasma welded samples, craters on the welding surface, lack of melting between the components, cracks, were observed (Fig. 1).

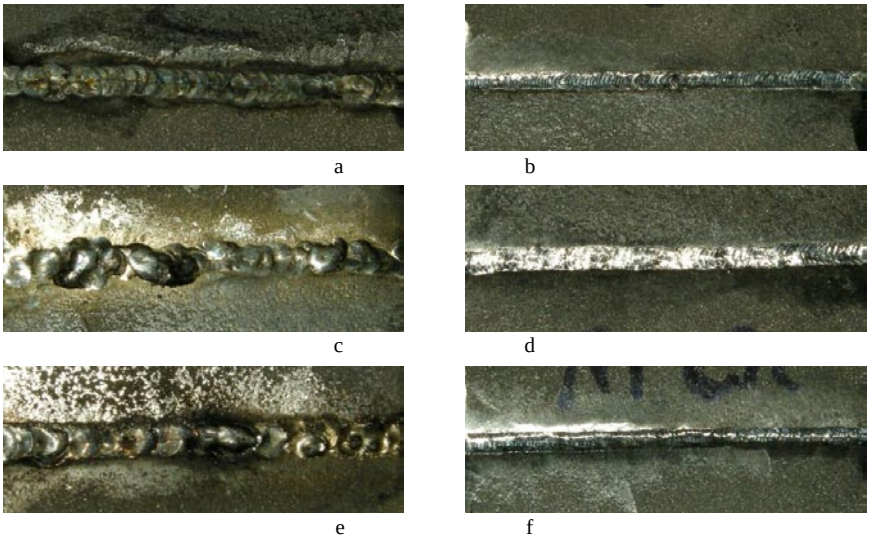
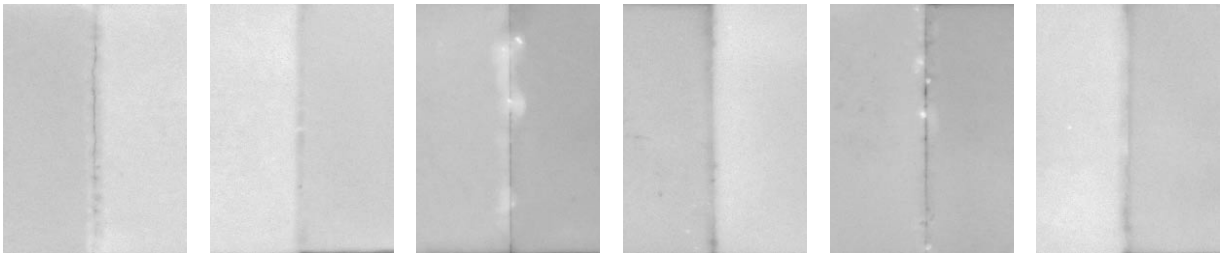


Fig. 1. Macroscopic images of dissimilar welded samples: a.microplasma welded without filling material; b. laser welded without filling material; c. microplasma welded with Co-Cr filling material; d. laser welded with Co-Cr filling material; e. microplasma welded with Ni-Cr filling material; f. laser welded with Ni-Cr filling material.

At radiographic images for the butt joined samples (Fig 2 a, and b) a radiotransparent line was observed at the joining line, which indicated a thinning of the material. The discontinuity is an effect of the spot overlapping. For the microplasma welded sample a darker line (with a width of 0.2 mm) is present in the center of the rib, as a prove of the crack. Porosities are present in both images.

The sample welded with filling material (Fig 2 c, d, e, and f) the radiotransparent line on the welded areas is thinner than in the first cases. The radioopaque areas indicate the presence of the filling material. The light spots (with a diameter of 0.3 mm) are a result of the wolfram inclusions from the electrode used for microplasma welding. At the microplasma welded samples the dark lines in the middle of the welding rib indicate discontinuous cracks. The porosities are represented through dark spots (about 0.2 mm) especially at the laser-welded samples.



a b c d e f

Fig. 2. Radiographic images of dissimilar welded samples: a.microplasma welded without filling material; b. laser welded without filling material; c. microplasma welded with Co-Cr filling material; d. laser welded with Co-Cr filling material; e. microplasma welded with Ni-Cr filling material; f. laser welded with Ni-Cr filling material.

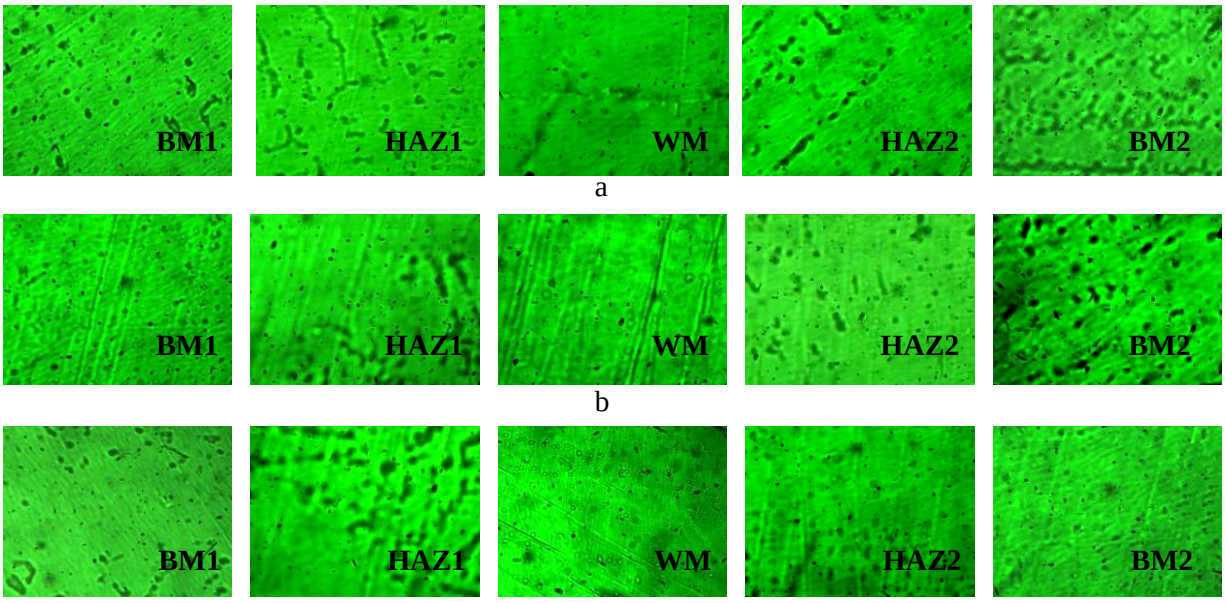


Fig. 3. Metallographic images of the laser welded samples:
a. sample 1; b. sample 2; c. sample 3.

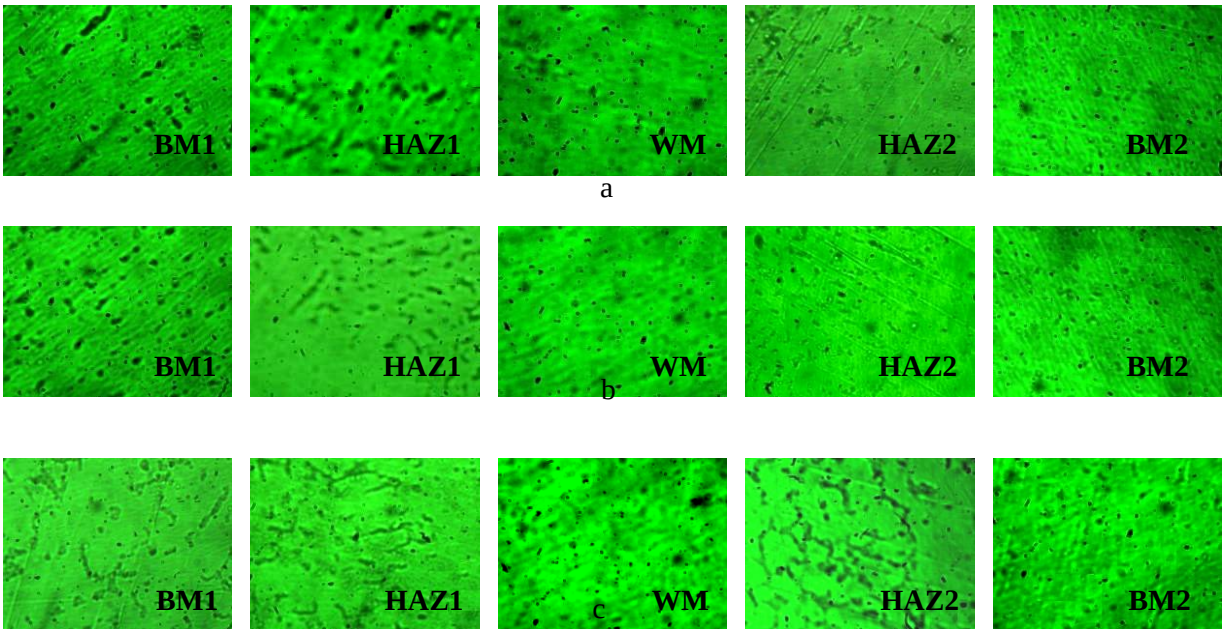


Fig. 4. Metallographic images of the microplasma welded samples:
a. sample 4; b. sample 5; c. sample 6.

Table 2. Microhardness values for the tested samples.

Tested area	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6
	Duritate HV5					
BM_1	182	187	204	164	182	199
	183	192	167	197	172	188
	188	193	172	146	182	188
HAZ_1	175	195	225	195	199	172
	199	236	214	225	206	195
	204	246	199	204	192	210
WM	210	260	329	341	317	401
	216	265	306	325	306	381
	257	257	321	299	358	362
HA\$_2$	418	376	386	362	349	345
	466	367	362	362	407	353
	418	381	381	391	317	358
BM_2	371	329	391	391	401	386
	381	321	401	381	384	367
	391	336	371	391	418	401

Metallographic analyses (Fig. 3 and 4) showed a dendrite microstructure in the base material. The microstructure of the welded zone appeared very fine. Precipitates are present in the HAZ and they may increase the hardness, which lead to fragile areas, which could crack during functional loads. The base material is composed from Ni α or Co α solid solutions, that contain as main alloying elements Cr, Mo, and W. Cr, Mo, and W constitute intermetallic compounds , that precipitate in the base matrix. This precipitates can be crowd or dispersed and depending on this the microhardness can be high (Table 2), which in association with small defects can lead to cracks.

DISCUSSIONS:

Welding processes can have various effects on the base metal. For example, high heat input may affect the mechanical properties of the base metal adversely. Cracking occurs when a material is unable to resist the stresses that are applied to it. The level of applied stress varies with the welding process.

The WM or HAZ may be different from the BM especially in dissimilar welding applications in terms of hardness, strength, impact resistance, creep strength, and wear resistance. The mechanical properties of welded joint are the major factors deciding the welding quality. Knowledge of how welding parameters affect the mechanical properties of welds is important.

The welding parameters have to be set according to the alloys composition, thickness of the frames, welding procedure, filling material. Factors relating to the operators dexterity and the choice of the welding parameters are recognized as determinants of weld quality. (1, 2, 3, 4, 5, 10, 11). The microhardness test is an excellent way to evaluate the effect of variables for metals. This procedure allows the selection of areas free of porosities and allows indentations on homogeneous areas. It is a property with a low coefficient of variation when compared to other mechanical properties tests (Bauer). The small dendrite structure seen within the weld is indicative of a fine grain size and suggests that these joints have higher yield strength (8,9).

CONCLUSIONS:

The experimental tests demonstrated that dissimilar welding could be applied with succes in the technology of high precision combined dentures.

The proper combination of the process parameters is necessary for the success of joining.

It is essential to optimize the welding parameters and to choose the adequate welding technique in order to produce excellent welded joints.

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REFERENCES:

1. Baba N, Watanabe I, Liu J, Atsuta M. Mechanical strength of laser-welded cobalt-chromium alloy. J Biomed Mater Res B Appl Biomater 2004;69(2):121-4.
2. Baba N, Watanabe I. Penetration depth into dental casting alloys by Nd:YAG laser. J Biomed Mater Res B Appl Biomater 2005;72(1):64-8.
3. Bertrand C, Le Petitcorps Y, Albingre L, Dupuis V.: The laser welding technique applied to non precious dental alloys procedure and results, British Dental Journal, 2001, 190(5):255-7.
4. Bertrand C, Poulon-Quintin A. Proposals for Optimization of Laser Welding in Prosthetic Dentistry. J Prosthodont. 2009.
5. Bertrand C, le Petitcorps Y, Albingre L, Dupuis V. Optimization of operator and physical parameters for laser welding of dental materials. Br Dent J. 2004;196(7):413-8.
6. Jeffus L. Welding: Principles and applications, 6th edition. Thomson Delmar Learning, New York, 2008.
7. Kou S. Welding metallurgy, 2nd edition. Wiley Interscience, New Jersey, 2003.

8. MacEntee MI, Hawbolt EB, Zahel JI. The tensile and shear strength of a base metal weld joint used in dentistry. J Dent Res 2009;60(2):154-8.
9. Rocha R, Pinheiro AL, Villaverde AB. Flexural strength of pure Ti, Ni-Cr and Co-Cr alloys submitted to Nd:YAG laser or TIG welding. Braz Dent J. 2006;17(1):20-3.
10. Srimaneepong V, Yoneyama T, Kobayashi E, Doi H, Hanawa T. Comparative study on torsional strength, ductility and fracture characteristics of laser-welded alpha+beta Ti-6Al-7Nb alloy, CP Titanium and Co-Cr alloy dental castings. Dent Mater. 2008;24(6):839-45.
11. Watanabe I, Baba N. Effect of welding parameters on penetration of Nd:YAG laser into cast Ti and Au- and Ag-based alloys. Quintessence Int. 2007;38(1):14-9.
12. Watanabe I, Chang J, Chiu Y. Dimensional change of laser-welded gold alloy induced by heat treatment. J Prosthodont. 2007;16(5):365-9.
13. Watanabe I, Wallace C. Bond strength of gold alloys laser welded to cobalt-chromium alloy. Open Dent J. 2008;2:109-13.

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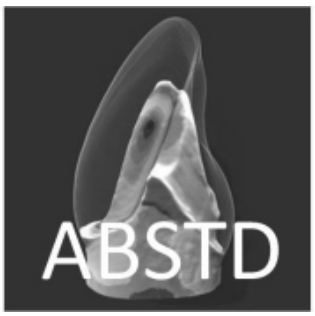

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- between March 15, 2010 and April 1st, 2010 reimbursement of 50 % of the total amount paid.
- after April 1st, 2010 NO refund. Another participant can be nominated.

Please note that all refunds will be processed after the meeting.

I hereby understand and agree to the terms and conditions set for the above and on the conference website.

Date:…… **Signature:……**

COURSE
RICKETTS TECHNIQUE IN BIOPROGRESSIVE PHILOSOPHY
ZEROBASE SYSTEM

Course held by Prof. Dr. DANIEL ROLLET (France) – translated into Romanian

The ZeroBase Orthodontic system can best be described as the "next generation of Bioprogressive". It advances the concepts and mechanics that were originally developed by Dr. Robert M. Ricketts. Using today's technological advances, the ZeroBase Orthodontic Appliance System provides a patient specific prescription that takes advantage of 3M Unitek 's Victory Series ™ Appliance with the added advantage of the APC™ Adhesive Coating System. Bioprogresiv is to see over the barrier built by the teeth, and discovered that there are other issues such as chewing function, head position, posture, whole body, soft tissue profile, personality, habits. Addressing a patient with orthodontic problems in a holistic manner, means not only limiting the mechanical treatment, which aims only correct positioning of dental units.

Today, most orthodontic practitioners want to acquire as many orthodontic techniques, the best way in which the teeth can be moved, but not all have put the problem right place to position these teeth, to know which is the best solution for a relationship stable occlusion, a proper aesthetic, neuromuscular function balanced and above all if the patient functions will enable it to have a proper occlusion and stable over time.

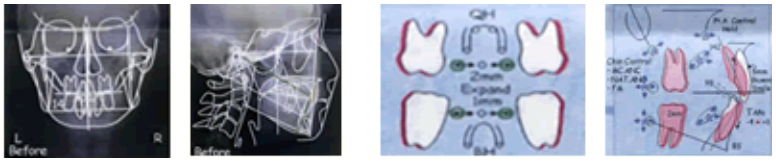
This intensive is made gradually because participants can establish proper diagnosis, prognosis and treatment plan after best techniques.

Zerobase Orthodontics is a specific system for diagnosis, wich gathers information in one manner logically and efficiently, by allowing orthodontics to diagnose and to individualize treatment in each patient (to be based in grades Difficulty). Idea is to be able diagnose and treat every facial dysfunction in all four Plans: transverse antero-posteriour, vertically and in time.

It also offers the clinician a wider range of treatment options and a higher level of sophistication and efficiency in patient management.

BIOPROGRESSIVE PHILOSOPHY - zerobase

First Module – 3 days.



Contents: Diagnostic and Treatment Design System of Zerobase Bioprogressive Philosophy
(7steps for diagnosis and 8 steps for treatment design)
Zerbase clinical examination and training dysfunction
Integrating frontal and lateral cephalometrics and 3D. thinking
Construction of VTP (Visual Treatment Planning) and its individualization
Individualization in diagnosis and treatment based on degree of difficulty
First mechanical flow to unlock the malocclusions
Mechanics by concept based on case degree of difficulty
Individualization of treatment mechanics
Practical training from diagnosis, treatment to retention

The course " **RICKETS TECHNIQUES IN BIOPROGRESSIVE PHILOSOPHY** " will run in **3 modules, the full year 2010**. The first module will take place in **26, 27, February 28, 2010**, in Timisoara at Hotel Boavista. The other 2 are still in Timisoara on **25, 26, June 27, 2010**, respectively **26, 27, November 28, 2010.**

Course fee for each module separately is 450 EUR, while the tax for all 3 modules paid in advance is 1200 EUR. Fee includes 2 coffee break and lunch. Young residents enjoy the discount for each module separately.

INSTITUTE OF ORTHOGNATHOLOGY AND PROSTHETICS, Timisoara

Contact

RALUCA NATU

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