JOURNAL *of the*

MASSACHUSETTS DENTAL SOCIETY

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2010 William McKenna Volunteer Heroes

Dedicated to Organized Dentistry

TRYING TIMES

These are times that try dentists' souls.

We are facing new and unknown remuneration formulas and effects of the Delta Dental of Massachusetts policy revisions. Health Insurance Portability and Accountability Act (HIPAA) mandates, red flag issues, and IRS and Department of Labor requirements that tax withholding and 401(k) payments be made online immediately after payroll dates strain cash flow. Staff (and our own) demands for increased compensation in spite of economic conditions that are only slowly improving (if at all) further add to our own stress.

Patients decreasing the demand for esthetic procedures, neglecting simple treatments and restorations (which will only become more complex—if they're even still treatable by the time they agree to therapy), and stretching the time between preventive visits (which will only cost them more pain and money in the long run) have forced us to examine our staffing levels so that we carefully balance our auxiliary needs in the face of unfilled appointments. The advent of "mid-level providers" in multiple states further adds uncertainty.

Government intrusiveness, changing business landscapes, and economic instability are not unique to dentistry. The feelings of control that we have over our own destinies are hardly as secure as they once were. The only thing certain about what's to come next is that we really have no idea as to what it will be. The tumultuous economic events of the past few years, the recent election results that will likely lead to governmental gridlock in Washington, and the unknown sequelae of health care legislation already enacted further contribute to our insecurities.

Where do we turn? Who's looking out for us?

As always, our greatest asset is our membership in organized dentistry. The combination of the multiple talents, opinions, volunteerism, and leadership found across all levels of the Massachusetts Dental Society and the American Dental Association provides our best opportunities and options for our future well-being.

There is no requirement (or possibility) for all of us to be in full agreement with every decision, action, or resolution coming from the Board of Trustees or the House of Delegates. We do, however, sacrifice our individual and collective rights to constructively criticize the actions taken by our Society leadership if we choose not to participate in whatever way each of us feels his or her talents may be of value.

You may feel that political action committees and lobbyists are distasteful. Reality, however, has taught us time and again that if we do not aggressively support and actively engage in political actions, we all lose. No organization will ever be 100 percent successful in its legislative efforts. No organization's leadership, including its councils and committees, is infallible.

Every organization is merely as strong as its individual members, the roles they are willing to play, and the funds they are willing to pay, to make our programs and initiatives successful.

Please participate; let your trustee or our officers know if you think you can help, if you are displeased with an internal issue, or if there is something from the outside world that you want to see addressed to improve our professional lives and, thereby, improve our ability to continue to provide first-rate care to our patients.

Only through you can all of us become stronger. ■

David B. Becker

Arthur I. Schwartz

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I thoroughly enjoyed reading both Dr. DeAngelis's and Dr. Carapezza's passionate comments regarding orthodontically induced root resorption in Letters to the Editor (Vol. 59/No. 3, Fall 2010, pages 6–7). However, I wanted to take some time to respond, since I feel that there is one key player that both overlooked.

Dr. Carapezza said that "root resorption is of multifactorial etiology," and Dr. DeAngelis's article that stimulated this invigorating debate began with an opening statement that naturally should have led to at least a mention of [an] omitted factor in the primer of the article: "Before embarking on this retrospective of the era of orthodontic biomechanics, a discussion of factors implicated in the etiology and pathogenesis of root resorption will provide insight into a central issue of this clinical perspective." Both clinicians focused on appliances and force systems as the significant player in the etiology of root resorption. However, I was quite surprised that there was not even a mention of genetics and its direct correlation with root resorption, as it has been a well-documented factor.[1–8]

As undesireable as external apical root resorption (EARR) is, one cannot deny that it is yet a frequent consequence of orthodontic treatment. As an orthodontist and an orthodontic educator, I feel that the understanding and teaching of orthodontics in relation to EARR would be incomplete without a mention, let alone a discussion, of cellular biology and genetics.

Both Dr. DeAngelis and Dr. Carapezza clearly stated that the biomechanics applied during the orthodontic treatment is one of several factors causing EARR. This has been established in the orthodontic literature, as many reputable studies have attempted to increase our knowledge and help us adjust, where possible, force application in order to reduce and perhaps even eliminate EARR.[10,11]

At the same time, results of several systematic studies have substantiated the clinical perception that there is more to root resorption than force level or the type of appliance used. Just as it's been well documented that peg-laterals and tooth agenesis may have a linked genetic factor, investigations of familial patterns of idiopathic root resorption, along with twin studies and other genetic analyses, have established a link between EARR and genetics.[2-5,9]

Current data suggest that more than one gene is involved in the disease process, with an estimate that 64 percent of EARR could be explained by genetic factors.[2,4,5] Thus it has become increasingly difficult to discount genetics in relation to EARR. The study of unrecognized underlying susceptibility of an orthodontic patient to pathologic effects from mechanical stimuli has been an ongoing investigation.

As an example, Al-Qawasmi et al. reported that individuals "homozygous for the IL-1β (Interleukin allele 1) have a 5.6 fold (95% CI 1.9-21.2) increased risk of EARR greater than 2 mm as compared with those who are not homozygous for the IL-1β allele 1. Data indicate that allele 1 at the IL-1β gene, known to decrease the production of IL-1 cytokine in vivo, significantly increases the risk of EARR."[4,5]

Given such information, one can't help but wonder how significant a role our appliance choices may make in reducing or obviating EARR.[12,13] It would be intriguing to see what more future data may be seen from root resorption studies of techniques advocating minimal light forces, an example of which may be Invisalign.[12,14]

Given the evidence for genetic link, it appears that we may always observe EARR in orthodontically treated patients, or at least we will not know which individuals are susceptible to our mechanical stimuli. Unless a cotton swab practice followed by genetic analysis becomes part of our records, at this point of our understanding of the process and the etiological factors leading to EARR, it doesn't seem to be in the cards that, as orthodontists, we could be ever so lucky to eliminate EARR from our practices.

It is indisputable that, as clinicians in any field of dentistry, we should demand of ourselves the highest standard of care for our patients. As orthodontists, we need to be well versed in and cognizant of our biomechanical choices as a whole. Yet no matter how one attempts to control a biological system, it is humbling to know that genes do not always cooperate; but we do enjoy it when they work for us. As difficult as it may be to accept, it is genetics at times that makes us good orthodontists, not our choices of appliance or biomechanics, since it may manifest itself in a favorable growth pattern or less susceptibility of a patient to EARR.

Thank you to both Dr. DeAngelis and Dr. Carapezza for their zeal in constructive discussions that perpetuate progressive thinking. ■

Negaar Sagafi, DMD
Framingham and Waltham

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AVOIDING PROBATE: IS IT WORTH IT?

When you die, your estate goes through a process that manages, settles, and distributes your property according to the terms of your will. This process is governed by state law and is called probate. Probate proceedings fall under the jurisdiction of the probate court (also called the Surrogate's, Orphans', or Chancery court) of the state in which you are domiciled at the time of your death. This court oversees probate of your personal property and any real estate that is located in that state. If you own property located in a state other than the state in which you are domiciled at the time of your death, a separate "ancillary" probate proceeding may need to be initiated in the other state. (Note: "Domicile" is a legal term meaning the state where you intend to make your permanent home. It does not refer to a summer home or a temporary residence.)

Why Avoid Probate?

- It can be slow—Getting needed assets into the hands of your heirs may be delayed.
- It can be costly—This is especially the case if an estate is large or complex, or ancillary probate is needed.
- It is public—Documents that you wish to remain private can be accessed by the public.

How to Avoid Probate

- Own assets jointly with rights of survivorship.
- Own assets that pass by beneficiary designation, such as life insurance and retirement plans.
- Use a trust.
- Gift assets during your lifetime.

Items that are subject to probate are known as probate assets. Probate assets generally consist of any property that you own individually at the time of your death that passes to your beneficiaries according to the terms of your will. Nonprobate assets include all property that passes outside of your will. Examples of nonprobate assets include property that is owned jointly with right of survivorship (e.g., a jointly held bank account) and property that is owned as tenants-by-the-entirety (i.e., real property owned jointly by a husband and wife). Another example is property that passes to designated beneficiaries by operation of law, such as proceeds of life insurance and retirement benefits.

Why Avoid Probate?

Most wills have to be probated. The rules vary from state to state, but in some states, smaller estates are exempt from probate or they may qualify for an expedited process.

First, probate can be slow. Depending on where your executor probates your estate and the size of your probate estate, the probate process can take as little as three months or as long as three years. Three years can be a long time to wait for needed income. It can take even longer if the estate is a complicated one or if any of the heirs are contesting the will.

Second, probate can be costly. Probate costs usually include court costs (filing fees, etc.), publication costs for legal notices, attorney's fees, executor's fees, bond premiums, and appraisal fees. Court costs and attorney's fees can vary from state to state. Typically, the larger the estate, the greater the probate costs. However, if a smaller estate has complex issues associated with its administration or with distribution of its assets (e.g., if the decedent owned property in several states), probate can be quite costly.

Lastly, probate is a public process. Wills and any other documents submitted for probate become part of the public record, something to consider if you or your family members have privacy concerns.

Why Choose to Go Through Probate?

For most estates, there's usually little reason to avoid probate. The actual time and costs involved are often modest, and it just doesn't make sense to plan around it. And there are actually a couple of benefits from probate. Because the court supervises the process, you have some assurance that your wishes will be abided by, and, if a family squabble should arise, the court can help settle the matter. Further, probate offers some protection against creditors. As part of the probate process, creditors are notified to make their claims against the estate in a timely manner; if they do not, it becomes much more difficult for them to make their claims later on.

In addition, some states require that your will be probated before the beneficiaries under your will can exercise certain rights. Among the rights that may otherwise be limited are: the right of your surviving spouse to waive his or her share under the will and elect a statutory share instead; the right of your surviving spouse to use your residence during his or her remaining life; the right of your surviving spouse to set aside certain property; and the right of your surviving spouse to a family allowance.

How to Avoid Probate

An estate plan can be designed to limit the assets that pass through probate or to avoid probate altogether. The major ways property is passed outside of probate are by owning property jointly with rights of survivorship; by ensuring that beneficiary designation forms are completed for those types of assets that allow them, such as individual retirement accounts (IRAs), retirement plans, and life insurance; by putting property in a trust; and by making lifetime gifts.

See your financial professional or attorney for more information. ■

GEORGE GONSER

Mr. Gonser is CEO of MDSIS–Spring Insurance Group.

BACK TO THE FUTURE: COOPERATIVE HEALTH PLANS

In a year full of surprises involving health care and insurance, another one was sprung on Massachusetts in August: Massachusetts Bill S-2585—An Act to Promote Cost Containment, Transparency, and Efficiency in the Provision of Quality Health Insurance for Individuals and Small Businesses was signed into law. S-2585 had many components in it that will have an effect on the health care, insurance, and provider communities for the future. However, one item of particular interest was the formation of health insurance cooperatives (six of them) scheduled for July 1, 2011. These cooperatives will cover up to 85,000 members and have all of the components of an association-based and -rated program not seen in Massachusetts since the mid-1990s.

So, does the idea of an association or cooperative health plan sound familiar? For the members of the Massachusetts Dental Society, it should. From November 1998 until health care reform was instituted in 2006, a coalition of business entities, including MDSIS and MDS leadership, worked diligently to get an association health plan allowed in Massachusetts. The hope was that by banding all the members of the Society together, we could enjoy similar buying power to that of large corporations. We met with carriers and legislators and testified at multiple hearings, and although we were lauded for our efforts and determination, our ultimate goal of securing the ability to offer an association plan was unfulfilled.

So why now? The appetite for what cooperative programs offer, conceptually, is very enticing for business owners and insureds alike. The potential for a consolidated number of plan offerings, concentrated administration, increased reporting and control, greater wellness integration, and long-term premium savings is exciting for all involved. With businesses and employees struggling with the cost of health insurance and with the still-sputtering economy, long-term rate relief is desperately needed. Cooperatives offer the hope of a better long-term way of getting health insurance for small businesses.

There are many challenges to the cooperative movement. Many carriers are skeptical as to their long-term viability. They feel that the good risk (i.e., young and healthy) will not stay in a cooperative for the long term and leave only the higher risk (i.e., older and sicker) in the cooperative. This would result in higher claims and, ultimately, higher premiums and decreased enrollment. Many see the cooperatives as nothing more than an election year political ploy. This may or may not be true, but now that it is a law, we will leverage whatever process is available to investigate these plans. The law stipulates a maximum of six association cooperatives. The Massachusetts Dental Society is a textbook entity in terms of size, demographics, and stability of the population and membership. Politics will definitely play a role in the selection of the cooperatives, so anything can happen, but we are now, and will remain to be, dogged in our pursuit.

The details are still being ironed out. Hearings about the technical components of the law were staged in the fall and early winter. These details will be made available and the MDS and MDSIS–Spring Insurance Group will be applying for one of the six available entities. The July 1, 2011, target implementation date is very aggressive with all of the moving pieces, and many unknowns still need to be finalized.

Keep in mind that while cooperatives are a potentially long-term purchasing and administrative program for members of the Society, they don't fix or address all the issues regarding rating. They will, however, provide the hope for an improved long-term program that will positively affect businesses and their employees. The current model is unsustainable, and while S-2585 doesn't address everything, it is a good start.

As the process evolves, look for more information via our website, ***www.mdsis.org***, or contact MDSIS–Spring with any questions at **(800) 821-6033.** ■

2010 William McKenna Volunteer Heroes

Each year, the Massachusetts Dental Society and the JOURNAL OF THE MASSACHUSETTS DENTAL SOCIETY join forces to honor those member dentists who have dedicated their energy, skills, and time to the profession of organized dentistry. They are the William McKenna Volunteer Heroes, in honor of Dr. William McKenna, who was a driving force behind the development of the Yankee Dental Congress and a model of volunteerism within the MDS. This year, we continue to celebrate those members who have gone above and beyond to help the MDS achieve its goals, inspire colleagues, and advance the profession of dentistry.

This annual recognition is the Society's way of saying thank-you to those deserving members who give so much of themselves to organized dentistry.

On the following pages, you will meet the 2010 Volunteer Heroes and learn about their thoughts on the impact that volunteers have on the Society and the profession, what they have gained both professionally and personally from their volunteer experiences, and why they think getting involved is so important to the future of dentistry.

These Volunteer Heroes may have varied backgrounds in dentistry and different experiences in volunteering for organized dentistry, but the one thing they have in common is a fierce passion for their profession and for the importance of volunteering.

The MDS, the Yankee Dental Congress, and organized dentistry would not be what they are today if not for the enthusiastic dedication of dentists like the ones you will meet on the following pages. We encourage you to learn more about them and why they think it's important that members like you get more involved in the MDS and in organized dentistry.

Deborah A. Almeida, DMD

Residence: Westport

Office Location: Westport

Specialty: Periodontology

Dental Education: University of Pennsylvania (DMD); Boston University (CADS in Periodontics)

Number of Years in Practice: 23

Number of Years of MDS Membership: 25

When and why did you decide to join the MDS and be part of organized dentistry?
I decided to join as soon as I graduated from dental school. I always felt that it was important to be a part of organized dentistry because of the wealth of information and support that could be had by talking and interacting with colleagues.

Is involvement in organized dentistry important to you? If so, why?
I think it is very important. Organized dentistry is where you can find out answers to questions about dental legislation, state laws and mandates, and insurance. You can be part of a group that collectively can make an impact on how you practice and your ability to treat patients and make a fair living.

Please describe the extent of your volunteer experience in dentistry.
I have served twice as chair of the Southeastern District Dental Society of the MDS, with my most recent term ending last May. I have been a member of the MDS Council on Dental Care, and in 1995 served as chair. I have participated in missionary trips to Honduras (in 2004) and Tanzania (in 2008 and 2009).

Is there one volunteer experience that stands out in your memory? One day/event/person that made you know it was worth volunteering your time and expertise?
The two mission trips to Tanzania where I was able to take my teenage daughter with me were especially rewarding. I was able to make a direct impact on the lives of these villagers who lived in remote areas by getting them out of pain, basically by extractions. But I also felt that I was bringing some hope and understanding to my daughter by showing her that we are all people of the world, and we are all responsible for each other and instilling in her the need to help. She was able to see that we have a lot of similarities with folks who live very primitively halfway around the world who do not speak the same language and, in most instances, do not have electricity or running water.

How has your volunteering impacted you on a professional and personal level?
It brings it back to basics for me: What I do directly impacts the quality of someone's life.

Do you volunteer in community and philanthropic activities outside of dentistry? If so, what are they and what drew you to them?
As a single mother of a teenager, she keeps me pretty busy. I do fundraising for Missions for Humanity. I also try to support and help my daughter, who just won an Unsung Hero Award for her work over the last four years with the New Bedford Sunset Program, where she helped with feeding the elderly and disabled.

What do you feel are the most important issues facing organized dentistry today?
I would have to say that the impact of the economic recession—with people losing jobs, benefits, and the ability to keep up with their regular maintenance visits, as well as being able to treat dental disease—is one of the most important issues we face today.

In one sentence, what would you say to a recent dental school graduate to convince him/her to get more involved in organized dentistry?
With organized dentistry, you have a stronger voice as part of a group to impact your chosen way to make a living, and also it gives you access to a wealth of information and practical experience.

What is your favorite . . .
Thing about the MDS? The people—the tireless work of people striving to make dentistry better by making the MDS such a viable organization

Word? Propeller

Vacation spot? Yet to be determined. I have traveled a lot and love it, but I am always looking for the next spot or adventure.

Part of your job? Helping people regain their smiles and confidence

Dental procedure to perform? I would say surgery to save someone's teeth so that they can chew and smile

Sport to watch? Patriots football

Way to unwind on the weekend? Enjoying family and friends, sailing, knitting, and helping my daughter, who is a high school senior, become the wonderful young woman that she is turning into.

Robert B. Amato, DMD

Residence: Bedford

Office Locations: Wellesley, Brookline, Lexington, Boston, and Medford

Specialty: Endodontics

Dental Education: Tufts University School of Dental Medicine (DMD and Endo); Rhode Island Hospital (GPR)

Number of Years in Practice: 30

Number of Years of MDS Membership: 29

When and why did you decide to join the MDS and be part of organized dentistry?
I joined the MDS as a student member when I started specialty training. I never assumed that a dental professional would not belong to his or her professional association on a local, state, and national level. Membership in these organizations is essential to the past, present, and future of our profession.

Is involvement in organized dentistry important to you? If so, why?
Involvement in organized dentistry is essential to my professional life. Helping our profession in any way possible is important to me. The full-time staff at the MDS and other professional organizations are committed to excellence in all that they do for dentistry, and the volunteer positions I have undertaken merely assist them in making our meetings, conferences, and profession better.

Please describe the extent of your volunteer experience in dentistry.
I have been active with the Metropolitan District Dental Society, serving as a committee member, assistant treasurer, and treasurer. I've also volunteered with the Yankee Dental Congress, serving as a member of the Scientific Committee, co-chair of General Arrangements, and co-chair of Allied Scientific, as well as chair of the Exhibits Committee three times.

I have also been active in the American Association of Endodontics: as a member and chair of the Clinical Practice Committee, member of the Continuing Education Committee, and member of the Board of Directors. I have also held a position on the American Dental Association CERP Committee. I am also involved with the Tufts University Dental Alumni Association and have served as president of its Board of Directors.

Is there one volunteer experience that stands out in your memory? One day/event/person that made you know it was worth volunteering your time and expertise?
I would have to say that my first time attending a YDC Exhibits Committee meeting stands out. Specifically, working with MDS staffer Shannon McCarthy and seeing how much she knew and how much enthusiasm she had for our organization. How can you not want to help out?

How has your volunteering impacted you on a professional and personal level?
It has made me more aware of group dynamics and the importance of running good meetings to advance the cause of an organization. Also, volunteering has allowed me to make new friendships, while maintaining old ones.

Do you volunteer in community and philanthropic activities outside of dentistry? If so, what are they and what drew you to them?
I coached Little League for more than nine years and had more fun doing that than with any other experience in my life. Beyond spending time with my son, coaching his friends and seeing these kids grow up was amazing.

What do you feel are the most important issues facing organized dentistry today?
One of the most important issues facing organized dentistry today is the continued imposition of insurance companies on how we treat patients. We must also be concerned about the potential shortage of dental educators that will seriously hurt our profession. Education is key to the future of our profession.

In one sentence, what would you say to a recent dental school graduate to convince him/her to get more involved in organized dentistry?
This is what you do, this is your profession; get involved and make things better.

WHAT IS YOUR FAVORITE . . .
Thing about the MDS? The Yankee Dental Congress and the people
Vacation spot? Kiawah Island, South Carolina
Part of your job? Using the microscope to see root canal anatomy. It sounds lame, but it is cool.
Dental procedure to perform? Endodontics (obviously)
Book? *Nine Bad Shots of Golf and What to Do About Them*
Sport to watch? Golf
Movie? *Caddyshack*
TV show? *Mad Men*
Way to unwind on the weekend? Walk the dog with my wife, and either golf or ski

Neela Gandhi, BDS, DMD

Residence: Chestnut Hill

Office Location: Brookline

Specialty: General Dentistry

Dental Education: University of Manchester School of Dental Medicine, UK (BDS); Tufts University School of Dental Medicine (DMD)

Number of Years in Practice: 16

Number of Years of MDS Membership: 4

When and why did you decide to join the MDS and be part of organized dentistry?
I joined the MDS right after graduation from the Dental International Program at the Tufts University School of Dental Medicine (TUSDM) in 2006. The MDS provides an excellent forum to help bring out the best in me professionally by enhancing my dental skills, enabling me to network with other dentists, and assisting the profession to deal with emerging issues.

Is involvement in organized dentistry important to you? If so, why?
Organized dentistry is a great platform for dentists to lobby for and promote common issues facing the profession in an ever-changing world. For example, the MDS was successful in lobbying for the bill that allows retired dentists who are willing to provide care at no cost in free-care clinics to qualify for a volunteer dental license. The MDS was also successful in getting a phase-out of Delta Dental's 5 percent discount over a period of three years.

Please describe the extent of your volunteer experience in dentistry.
I have been fortunate to have had extensive volunteer experience in organized dentistry. In 2007–2008, I was selected for the MDS Leadership Institute Program, which led to my role as a representative for the Council on Membership for the Metropolitan District Dental Society (MMDS). I have also assisted in the organization of the Charles River Study Club meetings for the MMDS and am currently vice president of the club. At the 2009 MDS House of Delegates, I was appointed by then MDS President Dr. David Samuels as a Member-at-Large on the District Reorganization Task Force, where I assisted in the development of a survey through the ADA that gave some idea of member satisfaction within districts in the Society. Also for the 2009–2010 year, I was a Guest Board Member of the MDS Board of Trustees, a program that provided me with a great opportunity to network with other Board members and learn about existing and emerging dental issues at the state level. I have volunteered at the Yankee Dental Congress as a room coordinator and presiding chair, and I am currently serving on the Scientific Committee for YDC 2013. I am also a member of the Inclusion Task Force, whose objectives are to get dentists from all diversities involved with organized dentistry. Lastly, on several occasions, I volunteered on the MDS Foundation Mobile Access to Care (MAC) Van, which traveled throughout the state to provide oral care to underserved children.

Is there one volunteer experience that stands out in your memory? One day/event/person that made you know it was worth volunteering your time and expertise?
During my tenure as representative for the MDS Council on Membership for the Metropolitan District, I helped to reduce the nonrenewal memberships by 37 percent in 2009. This was a gratifying experience, given that our country was in the middle of the financial meltdown and several dentists were finding it difficult to sustain their MDS memberships.

How has your volunteering impacted you on a professional and personal level?
Professionally, organized dentistry has provided me with an opportunity to network with other seasoned dentists and enhance my knowledge base. Being involved in organized dentistry has given me an opportunity to feel more a part of the profession and to see what happens outside the walls of my dental office. Personally, volunteering in organized dentistry has enabled me to become a better citizen by giving back some of my time to society, thus improving access to oral care for the underserved members of our society.

Do you volunteer in community and philanthropic activities outside of dentistry? If so, what are they and what drew you to them?
I am a member of the Newton-Needham Chamber of Commerce, where I help organize meetings for "Women in Networking" and "Small Business Seminar" series of events. I am also involved with the United India Association of New England, which organizes social and cultural events to bring the Indian diaspora together and promote diversity in the New England area.

What do you feel are the most important issues facing organized dentistry today?
As the dental profession continues to evolve, it is logical to assume that some of the threats facing organized dentistry include: inaccessibility to care for the underserved due to

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Deedee Gurin, DMD, MAGD

Residence: Boston

Office Location: Milton

Specialty: General Dentistry

Dental Education: Boston University Henry M. Goldman School of Dental Medicine (DMD), Forsyth (RDH)

Number of Years in Practice: 14

Number of Years of MDS Membership: 14

When and why did you decide to join the MDS and be part of organized dentistry?
As a dental student in the early 1990s, I was automatically enrolled in the Massachusetts Dental Society, but it was my mentors, Dr. Bill Leavitt and Dr. Rich LoGuercio, who encouraged me and really inspired me to become active in the organization. I saw firsthand the personal and professional advantages of being involved in organized dentistry.

Is involvement in organized dentistry important to you? If so, why?
Being involved in organized dentistry is extremely important to me. Not only have I found my own participation to be very rewarding, but I have also made it something of a mission to persuade my friends, colleagues, and staff to become involved. The MDS provides extremely helpful information on a wide spectrum of issues that are of interest to me, including the status of legislation affecting me and my practice, and it also advocates for dentists on a wide range of issues.

Please describe the extent of your volunteer experience in dentistry.
I am fortunate to have had a wide variety of very rewarding volunteer experiences as a dentist. I have been involved in the Child Identification Program (CHIP), in promoting dental health with Head Start, and in providing mouthguards and dental exams for participants in the Special Olympics here in Massachusetts. I have also had the opportunity to mentor dental students from Boston University. I was an assistant clinical professor there for 13 years, and I continue to volunteer in the Applied Professional Experience (APEX) Program, providing hands-on clinical experience to dental students twice a year.

I have also been to Nicaragua a number of times, working in small villages to educate people and promote basic dental hygiene. It is heartbreaking to see the amount of tooth decay and the general poor dental health of many Nicaraguans. I have found my work there to be tremendously rewarding. I have set up simple Swish and Spit Programs in the schools, leaving behind a year's supply of fluoride with the teachers in an effort to help children avoid more serious dental problems in the future. It truly has been a privilege for me to work with Project Stretch in providing this help to a country in such need.

In all honesty, though, perhaps my biggest volunteer commitment over the years has been with the MDS. Every year, I have attended the Yankee Dental Congress and have had progressively more responsibility for its success. I started as a room coordinator, and then served as presiding chair and co-chair. I attend numerous meetings with the MDS. I have also been involved with the South Shore District Dental Society (SSDDS), serving as program co-chair and now chair-elect, soon to become only the second female chair in the SSDDS's history.

Is there one volunteer experience that stands out in your memory? One day/event/person that made you know it was worth volunteering your time and expertise?
I believe it was when I received a postcard from someone who I helped while in Nicaragua that I realized the impact I have had on that one person, her family, and her village. It was very powerful.

How has your volunteering impacted you on a professional and personal level?
Being active in the MDS has had a tremendous impact on me, both professionally and personally. Being the sole dentist in my practice, I do not have many opportunities to talk with other dentists day to day, so this professional organization has introduced me to other dentists, many of whom have become close friends over the years. We meet regularly, both professionally and socially, and it has become a very positive support network in my life. I also rely on the MDS to keep me informed about important legislative measures and insurance regulations that may have a significant impact on my practice.

Do you volunteer in community and philanthropic activities outside of dentistry? If so, what are they and what drew you to them?
I keep very busy between my successful practice and my many volunteer activities within the dental profession. I am always eager to philanthropically support the efforts of others, though, and give generously to a wide range of organizations, including the American Cancer Society and the Jimmy Fund, among others.

Continued on page 18

Philip Howells, DDS

Residence: Northborough
Office Location: Northborough
Specialty: General Dentistry
Dental Education: University of Michigan
Number of Years in Practice: 26
Number of years of MDS Membership: 26

When and why did you decide to join the MDS and be part of organized dentistry?
In 1985, I was a new associate in Worcester. I was new to the area and did not know a soul. In fact, I joined a bowling league and worked as a waiter in the evenings just so I could meet some people. Dr. Joe Oakley took me to a local district meeting so I could meet other young dentists. I enjoyed the meeting, and a year later I found myself on a committee. I was hooked and have been involved ever since.

Is involvement in organized dentistry important to you? If so, why?
Through my early involvement in organized dentistry, I learned that the behind-the-scenes efforts of dentists at the district and state levels help enhance and protect our profession. In schools, volunteer clinics, church fairs, and other forums, there is so much that we, as dentists, have to offer to our communities.

Please describe the extent of your volunteer experience in dentistry.
I have gone into the Northborough schools to speak to the kids. I have also worked at the Child Identification Program (CHIP) clinics in our local mall and Northborough churches. I was one of many Worcester-area dentists who volunteered their services at the Quinsigamond Community College Dental Clinic. I was also fortunate to work on the MDS Foundation Mobile Access to Care (MAC) Van when it came to Worcester, and I have worked as a room coordinator and presiding chair at the Yankee Dental Congress.

Is there one volunteer experienced that stands out in your memory? One day/event/person that made you know it was worth volunteering your time and expertise?
One of my days volunteering on the MAC Van, I met a young 8-year-old boy with numerous decayed teeth. We had the time, so we restored seven teeth. He was an absolute joy to work with, and at the end of a long appointment and after multiple injections, he came up to me and gave me a big hug. I will never forget that day.

How has volunteering impacted you on a professional and personal level?
My experiences volunteering have been incredibly rewarding. There [was] no better feeling than coming off a shift on the MAC Van and remembering all those smiling faces. As a result of these experiences, I believe I am a more compassionate dentist and a better parent. You can't help but feel better about yourself after a day of volunteering. These positive feelings are a great comfort to me at work and at home.

Do you volunteer in community and philanthropic activities outside of dentistry? If so, what are they and what drew you to them?
I am very active in the coaching community in our town. I have coached soccer, basketball, girls' softball, and baseball for the past 20 years. I love working with the kids, and I believe they learn a lot about life on the courts and ball fields. I really enjoy being a part of that. I am an avid sports fan and love being an active part of my kids' lives.

What do you feel are the most important issues facing organized dentistry today?
I am concerned that many of our younger dentists are not connecting with organized dentistry. There seems to be a certain apathy when it comes to getting involved. The face of dentistry is changing as more young people from different ethnic backgrounds join the profession, and we need to work hard to find a way to make organized dentistry meaningful to these young dentists so they can help shape the future.

In one sentence, what would you say to a recent dental school graduate to convince him/her to get more involved in dentistry?
The one person who can best improve and protect the future of dentistry is you.

WHAT IS YOUR FAVORITE . . .
Thing about the MDS? The Yankee Dental Congress
Word? Crisp
Vacation spot? Yellowstone National Park
Part of your job? Conversing with patients
Dental procedure to perform? Repair of broken anterior tooth with composite
Book? *1776*
Sport to watch? College football—Go Blue!
Movie? *Field of Dreams*
TV show? *Modern Family*
Way to unwind on the weekend? Golfing, skiing

Pat Machalinski, DMD

Residence: Arlington

Office Location: Arlington

Specialty: Endodontics

Dental Education: Boston University Henry M. Goldman School of Dental Medicine (DMD, AEGD, Endo)

Number of Years in Practice: 16

Number of Years of MDS Membership: 16

When and why did you decide to join the MDS and be part of organized dentistry?
I wish I had a more noble response—it was to attend the Yankee Dental Congress!

Is involvement in organized dentistry important to you? If so, why?
Involvement in organized dentistry is very important to me. I am responsible to give back to my profession. As well, I am responsible for the course that the future of dentistry will take.

Please describe the extent of your volunteer experience in dentistry.
I volunteered as a dental assistant when I was doing my prerequisites for dental school. When I was in dental school, I volunteered at Bridge Over Troubled Waters. Since I was in the endodontics program at Boston University, I volunteered as a CE instructor and now teach part-time in the endodontics department. I have volunteered at the Yankee Dental Congress in various capacities, and I volunteered on the MDS Foundation Mobile Access to Care (MAC) Van. I have also been on the MDS-PAC (Political Action Committee) Board for a number of years.

How has your volunteering impacted you on a professional and personal level?
Dr. Arthur Eddy, chair of the MDS-PAC Board, has had a profound impact on me. Dr. Eddy is very skillful at making sure that everyone is heard as he herds us toward accomplishment. He's led me to feel confident in taking action for the MDS-PAC. From him, I have learned how to interact with people.

Do you volunteer in community and philanthropic activities outside of dentistry? If so, what are they and what drew you to them?
I volunteer my efforts at my church and my daughter's school. Again, I feel responsible to help out.

What do you feel are the most important issues facing organized dentistry today?
Being united—I know we need to stand together to keep dentistry the best that it can be.

In one sentence, what would you say to a recent dental school graduate to convince him/her to get more involved in organized dentistry?
We need you, with your talents and your aspirations for dentistry; you will get more out of volunteering than what you put in.

WHAT IS YOUR FAVORITE . . .
Thing about the MDS? The members and the staff
Word? Cogent
Part of your job? Performing endodontic procedures
Dental procedure to perform? Endodontics on #19
Way to unwind on the weekend? Cook a big meal for friends and family

Viktoria P. Talebian, DMD

Residence: Swampscott

Office Location: Salem

Specialty: Orthodontics

Dental Education: Boston University Henry M. Goldman School of Dental Medicine (DMD and CAGS in Orthodontics)

Number of Years in Practice: 11

Number of Years of MDS Membership: 11

When and why did you decide to join the MDS and be part of organized dentistry?
The wonderful part of being an American Dental Association member is that your membership to the MDS is linked. As a student, I was a member of the student branch of the ADA, and so upon graduation it seemed natural to continue my membership. Being a part of organized dentistry allows me to feel a part of a body that really makes a difference in our profession.

Is involvement in organized dentistry important to you? If so, why?
There are so many aspects to organized dentistry that are of importance, but I especially enjoy the educational aspects. I have enjoyed serving on the Council on Dental Education and fostering positive relationships with the area dental schools, organizing educational programs for our members both at the Yankee Dental Congress and with the year-round offerings at the MDS through the Yankee Institute.

Please describe the extent of your volunteer experience in dentistry.
One of the most rewarding volunteer efforts that I have experienced was teaching in the postgraduate department of orthodontics at Boston University. I have also enjoyed leadership opportunities as program co-chair for the Women's Conference at YDC. Currently, I am serving as chair for the Council on Dental Education.

Is there one volunteer experience that stands out in your memory? One day/event/person that made you know it was worth volunteering your time and expertise?
Sometimes, those around you see something or recognize something in you that you may not see yourself. I felt this way the first time I was asked to co-chair a program at Yankee. When first approached, I was not certain if I had what it took to put a daylong event together. But the terrific staff at the MDS, a strong co-chair, and just tons of overall support made the effort worthwhile. The most rewarding experience is when one of the attendees comes up afterwards and says he or she really learned something.

How has your volunteering impacted you on a professional and personal level?
Giving back is something that my parents instilled in us at an early age. They taught by example, donating countless hours to a number of civic organizations. I am working with my children now on the importance of volunteerism. Last spring, we organized a Save the Crocs drive at their school. We donated 50-plus pairs of Croc shoes to area children who did not have safe summertime footwear. It was a win-win. My children were proud of themselves for a job well done, and they were happy for the kids they were helping. What a feeling!

Do you volunteer in community and philanthropic activities outside of dentistry? If so, what are they and what drew you to them?
The Rotary Club of Salem is an unbelievable organization. I have served in multiple leadership roles in the club, and last year was named Rotarian of the Year for service projects in literacy, leadership, and fundraising. I cannot begin to express the pride I feel in saying that I am a Salem Rotarian, for all that we do for this wonderful community.

In one sentence, what would you say to a recent dental school graduate to convince him/her to get more involved in organized dentistry?
Look at yourself and say, "How can my unique talents and skills be best used to strengthen my chosen profession in dentistry?" Once they are identified, use involvement in organized dentistry to let those talents shine.

WHAT IS YOUR FAVORITE . . .
Thing about the MDS? The staff. Wow, they do a fantastic job of keeping us informed and prepared. They make us look good. We could not ask for more.
Word? I have two: balance and gratitude
Vacation spot? My in-laws' place on the beach in Jupiter, Florida. Since having the kids, it is impossible to get there anymore, but once upon a time, it was the ultimate getaway. Panoramic vistas of palm trees, ocean, sand, and, unlike Swampscott, always warm.
Part of your job? It may sound quite basic, but I get excited when I see teeth move! Developing a plan and watching it take shape and come to life is like a little present every day. It's really fun.
Dental procedure to perform? Orthodontic deband. The day you take the braces off is the ultimate in satisfaction. The smiles and hugs are infectious.

Continued on page 18

Dr. Neela Gandhi, continued from page 13

government cuts in dental benefits for adults, such as the MassHealth Program; the transfer of the dental experience from the baby boomers to the young dentists entering the profession; and compliance with applicable laws, regulations, and standards codes of practice in dentistry.

In one sentence, what would you say to a recent dental school graduate to convince him/her to get more involved in organized dentistry?
There is strength in numbers; organized dentistry provides recent dental school graduates with a forum for advancing their professional development through initiatives in education, advocacy, and promotion of the highest professional standards.

WHAT IS YOUR FAVORITE . . .
Thing about the MDS? Professional development
Word? Networking
Vacation spot? Kenya
Part of your job? Resolving my patients' dental needs
Dental procedure to perform? Smile makeovers
Book? *Secrets*
Sport to watch? Tennis and football
Movie? *Avatar*
TV show? CNN programming
Way to unwind on the weekend? Swimming

Dr. Deedee Gurin, continued from page 14

What do you feel are the most important issues facing organized dentistry today?
I would have to say that dentistry has been impacted just as much by the recent economic downturn as any other profession or industry in this country. I am seeing it at every level, from businesses that are reducing dental coverage and increasing co-pays in order to cut costs, to patients who are deferring dental procedures because of financial difficulty. As an organization, the MDS has rightly kept its eye on the insurance industry and regulations, because that has an enormous impact on our business and our ability to provide the best possible dental care to our patients.

In one sentence, what would you say to a recent dental school graduate to convince him/her to get more involved in organized dentistry?
Quite simply, you must give to get back; everything I have put into volunteering in organized dentistry, I have gotten back a hundredfold.

WHAT IS YOUR FAVORITE . . .
Thing about the MDS? Collaboration
Word? It's not a word, but a quote by Walt Disney: "Around here, however, we don't look backwards for very long. We keep moving forward, opening up new doors and doing new things . . . and curiosity keeps leading us down new paths."
Vacation spot? Florida
Part of your job? Patient satisfaction!
Dental procedure to perform? Extractions
Book? *Nonviolent Communication*
Sport to watch? Football. Go Pats!
Movie? *The Princess Bride*
TV show? *Modern Family*
Way to unwind on the weekend? Long runs

Dr. Viktoria Talebian, continued from page 17

Book? *The Bi-Dimensional Technique* by Dr. Tony Gianelly
Sport to watch? Basketball. My fondest memories of adolescence are sharing chicken wings and laughs with my dad while watching the Syracuse Orangemen play on a weekend afternoon.
Movie? *Coming to America*—the oh-so-silly adventure of an African prince who comes to America to find his bride. If you are going to spend two hours sitting, the movie has got to make you laugh!
TV show? Who has time for TV? Seriously, other than the occasional episode of *Iron Chef* on the Food Network, I have not watched TV in more than three years.
Way to unwind on the weekend? As the mother of three children, the weekends are all about the kids. Depending on the season, you will find me on the soccer, football, or baseball field; on the slopes or at the beach; or at a dance, piano, or Girl Scouts activity. This past fall, we enjoyed many family hikes.

Summary of Current Consensus on the Effect of Smoking on Implant Therapy

TAYLOR N. SNIDER, MS
DAVID COTTRELL, DMD
HUSSAM BATAL, DMD

Mr. Snider is a doctorate of dental medicine candidate, Dr. Cottrell is an associate professor and director of residency training, and Dr. Batal is an assistant professor and director of pre-residency internship at the Boston University Henry M. Goldman School of Dental Medicine.

Abstract

Implant therapy has become a very predictable treatment option in the general population; however, there are certain factors that increase the risk of implant failure.[1-3] The 2008 National Health Interview Survey estimates that 24.8 million men and 21.1 million women are smokers. The literature regarding cigarette smoking and dental implants currently suggests that advising the patient to stop smoking completely is best, but if this approach is not tenable, then the patient should be warned of the increased risk of implant failure and postoperative complications.

Introduction

The health morbidities related to smoking are well publicized. Former Surgeon General C. Everett Koop, MD, ScD, believed that cigarette smoking is the chief preventable cause of death in our society. That sentiment has been upheld by his successors and is supported in the literature. Aside from the well-known pulmonary and cardiovascular effects of smoking cigarettes, the effects on wound healing are of critical importance for those clinicians placing dental implants. Nicotine increases blood viscosity via increasing platelet adhesion, which leads to poorer blood flow in areas of limited perfusion such as the gingival plexus.[4] In an in vitro study, Snyder et al. reports that nicotine negatively impacts the b-1 integrin subunit function by inhibiting translocation of this protein to the cell membrane of human gingival fibroblasts.[5] The nicotine levels used in this study corresponded to heavy cigarette smoking. The b-1 integrin protein is critical for binding of collagen and laminin, and thus defects in the protein will decrease fibroblast adhesion to themselves and to the extracellular matrix. This will inhibit cellular communication and will potentially delay wound healing. Smoking cigarettes also leads to early tooth loss. As early as 1997, Krall et al. suggested that smoking cigarettes more than doubles the risk of tooth loss, and that smokers also have a fourfold increase in edentulism over their lifetime.[6]

IL-1 polymorphism is a condition that affects 40 percent of the general population and may increase the risk of periodontitis due to an increase in the inflammatory cytokine IL-1.[7] This deleterious effect may be exacerbated by cigarette smoking.[8] This same gene polymorphism has also been shown to increase the risk of peri-implantitis.[9] The myriad harmful chemicals contained in cigarettes have yet to be individually studied with respect to their effects on the healing periodontium.[5] The outcome associated with several of the chemicals is known. For example, nicotine is a peripheral vasoconstrictor and inhibits nutrient- and oxygen-rich blood from getting to vascular sites. This can potentially delay wound healing. Smoking has also been positively linked to periodontal conditions such as gingivitis and periodontitis. A recent review article found that most studies report smoking to increase the risk of periodontal disease twofold to

sixfold.[10] Bergstrom, comparing a total of 133 smokers and 242 nonsmokers ranging in age from 20 to 69 years, underscored that varying the definition of the disease can change the findings drastically.[11] Statistically speaking, if an inclusive disease parameter, such as 1 percent of pockets probing at least 5 mm, existed, then the odds ratio of losing one's implant was 2. If a more exclusive parameter, such as the requirement of 15 percent of pockets to probe a minimum of 5 mm, was present, then the odds ratio skyrocketed to greater than 12. This finding also lends itself to the conclusion that those with more generalized periodontitis are in the greatest jeopardy of losing their implant. This supports other studies showing that the amount of clinical attachment loss is a dose-dependent phenomenon with regard to smoking.[12]

Findings

Most studies found that implant success was decreased by cigarette smoking. According to a recent retrospective study, cigarette smoking and attendance to regular periodontal checkups were the only statistically relevant factors in a group of 475 patients followed over 10 years. Patients treated for mild to severe periodontal disease had more implants fail, but not enough to be statistically significant.[13] In a cross-sectional study of 109 patients, 354 of 372 implants were still in function. Interestingly, every patient who both had lost an implant and had periodontitis also smoked. The prevalence of implant loss in smokers versus nonsmokers was 15.3 percent versus 2 percent. Of the patients with current periodontitis (defined as at least two teeth with a probing depth of at least 5 mm, bleeding on probing, and radiographic bone loss of at least 6 mm), a quarter of them had lost an implant compared to only 3.8 percent of the cohort without periodontitis.[14]

Sverzut et al. found in a retrospective study sample of 650 patients who had had 1,628 implants inserted that no statistically significant difference existed between implants placed in smokers versus nonsmokers. The percentage of implants lost was 2.81 percent in the nonsmoking group and 3.32 percent in the smoking group.[15]

In a recent meta-analysis of the literature, Strietzel et al. reported that smoking is a significant risk factor for implant failure and for the failure of site-augmenting procedures such as bone grafting.[16] Lindquist et al. also reported a dose-effect relationship between smoking and peri-implant marginal bone loss over a 10-year period.[17] It has also been shown that smoking cigarettes increases the risk of peri-implantitis.[9]

Figure 1. Exposed threads in a heavy smoker.

The exact mechanism by which cigarette smoking diminishes the efficacy and duration of clot formation is still being debated. One proposed mechanism is that the warm airflow dislodges the clot, precipitating dry socket. Another is that the chemicals contained in cigarettes dissolve the clot. In particular, hydrogen cyanide, carbon monoxide, and ammonia are all known cytotoxins that could potentially lead to the degradation of the clot.[4] In addition, a study by Fouad and Burleson found that those patients who smoked a water pipe after oral surgery had dry socket incidence similar to that of cigarette smoking.[18] With this result, it seems reasonable that sucking on the cigarette itself may be the main reason for clot loss, with the harmful chemicals contributing to the deleterious effects. Interestingly, Fouad and Burleson's study also found a significantly increased incidence of pain with smokers who smoked on the first day of surgery as opposed to those who smoked on the day after.

Several studies have shown that perhaps using a surface-modified implant in smokers could have a higher success rate.[19,20] The most compelling evidence found was a 2008 retrospective study performed by Balshe et al. in which 593 patients receiving 2,182 smooth-surface implants were compared to 905 patients receiving 2,425 surface-modified implants. Interestingly, smoking was only shown to be associated with implant failure in the group receiving smooth-surface implants. The poorest survival rates were for smooth implants placed in the posterior maxilla of smokers.[21]

The amount of cigarettes smoked also has an effect on the prognosis of implant placement. DeLuca et al. found that implants failed earlier if an individual smoked more than 15 cigarettes a day as compared to individuals who smoked 6 to 14.[22] Several studies report similar results between the number of cigarettes smoked per day and the results of implant placement and concomitant procedures.

Discussion

Smoking remains a relative contraindication to implant placement. It can be concluded that in addition to many factors—such as site of implantation, bone quality, and periodontal status prior to and after implantation—cigarette smoking does have a negative impact on the success of implant placement. Clinicians should obtain a history of the patient's smoking

Table 1. Considerations and Effects of Smoking and Implant Placement

Consideration	Effect
Implant failure	Increased
Implant failure in grafted sites	Increased
Marginal bone loss	Increased
Anatomical location	Increased risk of failure in maxilla vs. mandible
Implant surface	Decreased failure in rough surface vs. machined
Peri-implantitis, mucositis	Increased
Incidence of failure of grafting procedures (GBR, block grafts)	Increased
Synergetic conditions with smoking	History of periodontitis, IL polymorphism
Dose effect of smoking	Increased with >10 cigarettes/day or more than 10-year smoking history
Effectiveness of smoking cessation	Helpful, if done prior to procedure and continued after healing is complete

"It should also be kept in mind that speaking to the patient for as little as three minutes about stopping smoking can be successful, and that patients are likely to be affected by speaking with a health care professional about smoking cessation."

habits, including both the duration and severity of the smoking habit. The patient should be advised that the literature provides ample evidence that smoking cigarettes during the implantation process will make their implant more likely to fail. Patients currently smoking should be advised to stop completely; however, if this is not acceptable to the patient, then, at the very least, smoking should be refrained from in the days immediately prior to and following any surgery, such as bone grafting or implantation. Furthermore, the patient should be apprised that smoking will increase the chance of postoperative complications such as periimplantitis and will increase the overall chance of early failure. As early as 1996, Bain reported that stopping smoking one week prior to surgery and until eight weeks following implantation leads to success rates as high as those enjoyed by nonsmokers.[23]

Informing the patient of this increased success could act as a springboard to quit smoking permanently if he or she can be convinced to stop for eight weeks after implantation. It should also be kept in mind that speaking to the patient for as little as three minutes about stopping smoking can be successful, and that patients are likely to be affected by speaking with a health care professional about smoking cessation.[24,25] ■

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Figure 1. Maxillary and facial defect.

Trigeminal Neurotrophic Ulcerations: An Unusual Manifestation of Trigeminal Neuralgia

MATTHEW J. JACKSON, DMD, MSD
PAMELA B. JACKSON

Dr. Matthew Jackson is a consultant in maxillofacial prosthodontics at the Massachusetts Eye & Ear Infirmary, Brigham & Women's Hospital, Massachusetts General Hospital, and Beth Israel Deaconess Medical Center, and an assistant professor at the Boston University Henry M. Goldman School of Dental Medicine. Ms. Jackson is a doctorate of dental medicine candidate at Tufts University School of Dental Medicine.

Trigeminal neuralgia, also known as tic douloureux, generally involves individuals over 50 years of age, especially in the sixth and seventh decades of life. This condition is found more often in females than males, in a 3:2 ratio. It is a chronic pain malady involving the trigeminal (fifth cranial) nerve and is usually evoked by a minor or trivial stimulus. This neuralgia may involve the ophthalmic (V1), the maxillary (V2), or the mandibular (V3) division and can be found to affect either individual or multiple nerve tracts. It predominantly manifests unilaterally, with only 4 percent of the population experiencing a bilateral presentation. Additionally, there appears to be no genetic link for this condition.[1,2]

Figure 2. Intraoral view of maxillary palatal defect.

The manifestation of trigeminal neuralgia is sudden, sporadic, or shock-like facial pain, lasting from as little as a few seconds to as much as two minutes, involving both physical and mental debilitation. The etiology is not completely understood, but is thought to involve a blood vessel that presses on the cranial nerve as it leaves the brainstem. Over time, the pressure causes wearing away of the myelin sheath, which protects the nerve. This may be seen during the aging process when the vessels lengthen and rest against the nerve, compressing and pulsating. Ultimately, the result is loss of the myelin covering of the nerve. Differentially, a disease process such as multiple sclerosis can cause the deterioration of the myelin sheath.

Diagnosis can be difficult because of the similarity of symptoms of other pain syndromes, such as post-herpetic neuralgia, cluster headaches, or even direct injury to the trigeminal nerve. A careful work-up is required, involving a thorough medical history and examination, presentation of symptoms, and neurologic evaluation. Radiographic modalities can be useful to rule out tumors and disease processes, as well as be indicative of any blood vessel complications.

The symptoms of trigeminal neuralgia can vary and are usually sudden, often unilateral, and of a variable duration spanning from seconds to minutes per episode. This discomfort may ultimately be experienced for days, weeks, months, and even years. Triggering mechanisms can be as minor as a vibration, toothbrushing, or chewing. However, rarely are these symptoms experienced during sleep. Furthermore, the neuralgia has been divided into two types: Type 1 is sudden, intermittent, or stabbing, while Type 2 is constant, aching, or burning in nature.

Generally, treatment is surgery, medicine, or a combination of the two. Medically, anticonvulsants and tricyclic antidepressants are prescribed. Opioids and standard analgesics appear not to be effective for sharp recurrent pain. Unfortunately, most of these drug types have significant side effects. If pharmacological therapy proves unsuccessful, surgical options can be employed, with the understanding that they are nonreversible and can result in long-term effects of numbness and functional loss. Such options may include rhizotomy, balloon compression, glycerol injection, and microvascular decompression, among others. All therapies of this nature usually leave permanent damage. Other treatments may include acupuncture and biofeedback.

Other medical conditions and syndromes may involve trigeminal neuralgia. Parry-Romberg syndrome is one such entity.[3] This is a rare disorder affecting predominantly females, usually involving the left side of the face where there is a slow but progressive atrophy or deterioration of the skin and soft tissues. The tissue involved is generally between the nose and upper corner of the lip (nasolabial fold), progressing to the angle of the mouth, areas around the eye, brow line, ear, and neck. Intraorally, this syndrome includes manifestations on the tongue, fleshy part of the roof of the mouth, and gums. Furthermore, trigeminal neuralgia and even seizures have been found to be associated with this syndrome.

Although the case report presented here does not follow a set pattern of specific symptoms, there are many similarities with other brain tracts, leading to this severely debilitating situation. In this instance, the clinician was obligated to attempt to find as much information about the patient and problem in order to treat and rehabilitate her.

Figure 3. Interim obturator prosthesis.

Figure 4. Facial prosthesis.

Case Report

A 71-year-old female presented who had been diagnosed with trigeminal neuralgia in 1982 at the age of 34. These symptoms persisted, and in 1984 she underwent a left-side nerve block. The only effect of this treatment was loss of feeling to the eye. Also, symptoms developed in the temporomandibular joint (TMJ) and TMJ disc. A rib graft was done to reconstruct the TMJ and mandible. In 1987, the left trigeminal nerve was cut and symptoms improved temporarily.

Ultimately, the above procedures were not effective and symptoms returned. By 2005, the trigeminal neuralgia was compounded by ulcerating lesions and continuous unstoppable compulsive picking. A "picking syndrome" evolved with self-induced destruction of facial and intraoral anatomical form and structures. In 2009, the patient underwent a facial flap repair of the region involved, but her picking symptoms persisted with loss of the surgically repaired area. She was then referred for prosthetic rehabilitation of the oral and facial structures.

Her medical history is significant for trigeminal neuralgia with neurotrophic ulcerations, anxiety, a pacemaker, hypothyroidism, glaucoma, cataracts, and chronic obstructive pulmonary disease (COPD). Presently, her medications include famotidine, Lasix, Novolog, Flovent, Spiriva, Tilade, Ventolin, amitriptyline, Nexium, Premarin, Rhinocort, lorazepam, carbamazepine, Pilopine cream, oxycodone, Seroquel, fludrocortisone, sertraline, and Lyrica. She has allergies to penicillin, sulfa drugs, and latex.

On extraoral examination, she was missing her left upper lip; part of her nose, including the left nares and bridge; and her left cheek up to the infraorbital region beneath her eye. (See Figure 1.) Intraorally, the left hard palate and maxillary sinus were missing. (See Figure 2.) This was supposedly caused by the incessant picking habit precipitated by her trigeminal neuralgia. As a consequence of this extensive defect, she had nasal/extraoral regurgitation of food and liquids, unintelligible speech, and a severely compromised swallowing mechanism.

Her residual dentition was very poor. A facial prosthesis was recommended, as well as an interim obturator prosthesis. An obturator fabricated to the residual facial anatomy and the

Figure 5. Interim obturator in position before facial prosthesis placement.

Figure 6. Facial and intraoral prosthesis, closed position.

Figure 7. Facial and intraoral prosthesis, open position.

buccal contour of the interim obturator was inserted (see Figure 3), followed by a facial prosthesis (see Figure 4), which included the upper lip, left cheek, and nose. Her facial appearance significantly improved, her speech became intelligible, the swallowing mechanism was restored, and nasal reflex of food and liquids was resolved. (See Figures 5–7.) Her husband was instructed on how to insert, place, and remove the prosthesis involved with her rehabilitation.

Discussion

This patient who developed trigeminal neuralgia 30 years ago and who underwent all conventional treatment regimens was still refractory to treatment. With the development of ulcerations, the situation became complicated with the onset of a compulsive picking syndrome.

Unfortunately, this situation was not resolvable and led to extensive facial and intraoral destruction unilaterally on her left side following the innervation of V5. Ironically, while never proven, the margins of her defect describe the outline of Parry-Romberg syndrome.

Most often, the picking syndrome is characterized by repetitive picking leading to extensive damage. The patient usually focuses on a specific existing condition, such as a mole or freckle, scabs, or ulcerations, and the picking mostly occurs at some location of the face. It may even be imaginary. In this case, it appears to be precipitated by the neurologic and ulcerative process, associated with chronic discomfort. Compulsive skin picking can be a conscious response to anxiety or depression, but it is most frequently done as an unconscious habit.[4] When this occurs, it is preceded by a high level of tension with a strong itch or urge and a feeling of relief or pleasure after picking. Generally, compulsive picking is treated with cognitive behavioral therapy.

In this particular case, the apparent etiology was and still is today trigeminal neurotrophic ulcerations. Understandably, depression or high anxiety is predictable with chronic trigeminal neuralgia. The associated destructive aspect makes normality and quality of life severely compromised. Surgical repair was unattainable. However, maxillofacial prosthetic facial and intraoral reconstruction provided proper oral function and restoration of appropriate anatomical facial form. These prosthetic procedures are noninvasive and completely reversible. ■

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An Interview with Dr. Spencer N. Frankl

Dean of the Boston University Henry M. Goldman School of Dental Medicine, 1977–2007

CHARLES B. MILLSTEIN, DMD, MPH

Dr. Millstein is the historian of the Massachusetts Dental Society, as well as an endodontist with a practice in Cambridge.

Introduction

In 1991, the Boston University Henry M. Goldman School of Graduate Dentistry—now known as the Boston University Henry M. Goldman School of Dental Medicine (GSDM)—stated its mission: ". . . to provide superior education to dental professionals throughout their careers, to pursue advanced basic and clinical research in oral medicine, and to offer outstanding health care services to the community within a respectful and supportive environment. We accept responsibility for our role in shaping the future of dental medicine and continuously seek innovations in education, science, technology, and health care management."[1]

Although numerous individuals were associated with compiling this document, Dr. Spencer N. Frankl, the dean, was responsible for the final version. He passed away on October 20, 2007, but he participated fully to develop many of the school's goals implicit in the above statement.

In 1993, Dr. Frankl granted me an interview at the school. His words recounted how the institution began as a graduate school of dentistry and then successfully moved in a new direction. The central core became a thriving, large, urban, private undergraduate school of dental medicine which encompassed the graduate school.

Working closely with then Boston University President Dr. John Silber, as well as the deans of the medical and public health schools, Dr. Frankl oversaw the school's transformation. By reaching out to both the university at large and the surrounding community, he strengthened existing alliances and expanded the services the school could offer.

In the seminal article "Creating a School Without Walls and Building a Learning Organization: A Case Study," Dr. Frankl, along with Michele Gibbons-Carr, PhD, defined how the school survived at a perilous moment in graduate education when others were closing.[2] By becoming an organization that changed and innovated based on continuous learning, GSDM learned from industry trends, patients, students, staff, faculty, and other key stakeholders, and then successfully translated that into effective action. The results included developing a solid undergraduate curriculum, acquiring a quality staff, expanding the physical facilities, and obtaining funding from the United States government.

The following is an edited transcription of my 1993 conversation with Dr. Frankl.

Q: After graduating from Temple University School of Dentistry in 1958, why did you seek further training at Tufts University School of Dental Medicine?

A: When I was a junior in dental school, I began to develop an interest in pediatric dentistry. In the middle 1950s, it looked like the future of dentistry lay in the area of prevention, and so I explored the possibilities of an internship in pediatric dentistry. There were approximately a half-dozen programs throughout the country, and I chose to go to the Children's Hospital Medical Center in Washington, D.C. I spent a wonderful year there and was able to develop my clinical skills as a practitioner and form good relationships with both the dental and the medical staffs. It confirmed my choice that pediatrics, with its many possibilities, should be my field of concentration.

Working with the special needs and compromised medical patients allowed me to know exactly what I wanted for my

professional life and to see the possibilities of pursuing a career in academic dentistry. I then began to investigate the possibility of pursuing an advanced degree in pediatric dentistry at one of the approximately eight university-affiliated programs. The three most prominent were in Boston, Ann Arbor [Michigan], and Lincoln [Nebraska]. After evaluating them, I applied and was accepted at both Ann Arbor [University of Michigan School of Dentistry] and Boston [Tufts University School of Dental Medicine]. The decision to pursue the program in Boston centered on one primary principle. The program at Ann Arbor was very strong clinically, but it was not hospital-based and did not have the emphasis on child development and psychology that I felt was necessary. I decided to go to Tufts University and enroll in the program there for my master's degree.

Fortunately, the program was in its early development and I was able to build my own curriculum. I spent about 50 percent of my time at the Medford campus because of the two major programs that were taught there. First, the psychology department was world-renowned because former President Leonard Carmichael had been professor of psychology. I wanted to work with psychology Professor Zella Luria, the wife of Salvador Luria, a Massachusetts Institute of Technology Nobel Prize winner. I also chose to study with Evelyn Goodenough Pitcher, director of the Eliot-Pearson School, who had worked extensively at the Gesell Institute of Yale University. These two women were very important factors in my education. I began the dissertation for my thesis in the area of child development and child psychology. Specifically, my thesis dealt with parental separation from the child during the dental experience. One of the reasons I explored this subject was that most texts in pediatric dentistry at that time said that the parents should never be present with the child in the dental operatory. Whenever I would see a statement like "never" or "always," I would question that premise. Partially because of my work and that of many others, we have recognized that parenting with the child during the dental experience can have a very positive effect within certain parameters.

In addition, when I was at the Tufts University Medical Center campus, I spent most of my time at the Boston Floating Hospital for Infants and Children, where I was able to rejoin my colleagues in pediatrics in a variety of ways. The Cleft Palate Institute allowed me to work in a multidisciplinary system to care for the special patient. I was very fortunate that both of my experiences in Washington and Boston complemented one another.

Q: When did you first meet Dr. Henry Goldman, and why did you join the Boston University staff in 1964?

A: I first met Henry in late 1963, but I had heard of Henry Goldman, who was truly one of the darlings of the dental profession. When I completed my program in 1961, I joined the faculty at Tufts University, where the opportunities available to me were outstanding. The program was just beginning, they were accepting graduate students, and I had established some very fine relationships with the hospital personnel. I had the chance to educate not only the predoctoral students, but the graduate students, as well. My experience with the predoctoral students served me well later in my academic career.

In 1963, there were very few pediatric dentistry programs existing throughout the country. I was approached by three individuals who offered me the next step in my career. In mid-1963, Dean Charles A. McCallum Jr. of the University of Alabama School of Dentistry was looking to change the program in pediatric dentistry. I was about to go to Alabama but had also been contacted by Dr. Lester Burket, dean of the University of Pennsylvania School of Dental Medicine, to initiate a department of pediatric dentistry.

At the same time that those two offers were pending, I received a call from Henry Goldman, who stated that there was no department of pediatric dentistry [at BU] and he wanted to develop all of the specialties of dentistry. He asked me to move from Tufts University to Boston University. I was very conflicted, because these were truly outstanding offers, and I had a desire to remain at Tufts because I had received a wonderful education and spent three good teaching years there. But I felt that my future was with Henry and with the challenge of being able to initiate a new department. So I moved from Tufts to Boston University.

Dean Spencer Frankl reviewing dental molds in a clinic setting.

Q: Can you define the concept of mentoring, and what Dr. Goldman, as a mentor, meant to you?

A: Well, that's a very complex question. I was very fortunate to have had multiple mentors in my educational experience. Henry was special in that category, of course, because he grew to become my nonbiological father. He entrusted me with a great many responsibilities and I became more and more a confidant. Henry, with his determination and confidence, had a wonderful vision of what he wanted to do with the school. One cannot help but gravitate to an individual like that, and also be able to inculcate some of those principles into one's own personality. Henry was a major force in the development of my career in academic dentistry and, later, administration. He laid the foundation of my future and that of the school.

Q: How would you describe the School of Graduate Dentistry that you went to 30 years ago?

A: Thirty years ago, we had no facilities. The School of Graduate Dentistry grew initially from the department of

Dean Spencer Frankl (center) performs the ribbon cutting at a ceremony to mark the opening of the School of Graduate Dentistry at 930 Commonwealth Avenue.

stomatology at the [BU] medical school. Because the medical school was short of space, we used outdated clinical facilities and lecture space in the surrounding area. However, we didn't mind because there was such a dedication and commitment to education. We had a faculty who were passionate about what they were doing. Henry brought together individuals who wanted to accomplish a great deal in their specialties and forged a very strong School of Graduate Dentistry. He was very wise and gave all of the department chairs the opportunity to demonstrate their talents. They grew to be very strong and earned a great deal of national recognition. I remember once in the late 1960s, when two department chairs and I served simultaneously on the examining boards of our specialties. We were making a major impact nationally and internationally because we were always a global university. This is the key to Henry's prominence, particularly when he initiated the program at the Beth Israel Hospital in Boston and developed his continuing education program.

Henry and I began to think in terms of future growth, so we had discussions with the Architect's Collaborative in Cambridge. Henry's vision was particularly focused on the postdoctorate program. He and I had begun thinking about what lay ahead for the school and other programming. We were not looking short term, but long term. Around 1969, we built our ground floor and the first three floors to house the School of Graduate Dentistry. The foundation of the school was constructed so that it would allow an addition of three or four floors. We had a very significant opening of the school in 1969, which gave a fresh burst of energy to the faculty, students, and staff.

After the school was constructed and we had been in the facility for about a year, Henry and I began discussing the next phase of growth. We spoke about the possibility of developing a predoctoral program. It's interesting that the genesis of Boston University was the antithesis of many other schools in the country. It really began as an institution for continuing education and, from there, to post-doctoral programs. We outlined the advantages and disadvantages of undergraduate education. I pointed out was that there was a big difference between educating men and women who had already earned their DMD or DDS degrees and who desired graduate studies or continuing education, and neophyte students. It also posed some organizational problems because specialty education requires a great deal of focus along departmental lines. Now we would have to establish a broader-based education.

After the second review of the advantages and disadvantages, we included the faculty and department chairs. Even though there was some minor reluctance and resistance, we had a fairly good meeting regarding the importance of developing a predoctoral program. I think that all of the individuals at that time saw the wisdom of going in this direction. There had already been inquiries from the Council on Dental Education as to what our future plans were going to be. After a series of meetings with the Council, we decided to initiate the predoctoral program. At that time, the federal government was giving a great deal of support to undergraduate dental education, so we did get federal funding. But it was primarily through Henry's great fundraising and philanthropy that we were able to raise the bulk of the funds for the school.

Henry and I had a slight parting of the ways concerning the development of the predoctoral program. He felt that we should accept candidates with a four-year baccalaureate degree who could do the DMD program in three, not four, years. That would mean that the students would be going to school three calendar years and would study 12 months of the year. However, it would require a very large increase in faculty. Even though it would be agreeable to the students, the faculty would never get time off.

After a great deal of discussion, we proceeded with that format. In 1972, we took our first predoctoral class. During that period of time, whenever a new program was initiated, the Commission on Dental Accreditation [CODA] would come to the institution and evaluate the program on a yearly basis. In 1975, the meeting was held, and it was felt that the school would not get full approval with a three-year program. After we received a preliminary report, I told Henry that I felt the appropriate thing to do was to move to a four-year program. He agreed, because the report pointed out issues that both of us felt were valid. So I flew off to Chicago that summer, met with members of CODA, and identified the particular problems we needed to change. They gave us full approval at that time and we graduated our first DMD class in 1976.

Q: Can you talk about your transition to dental school administration?

A: By 1975, I had spent 12 years at the school establishing the Department of Pediatric Dentistry. In my 10th year as chair, Henry appointed me associate dean, and I assumed more of the administrative

responsibilities. I really enjoyed my tenure as chair, and at the present time, there are about 350 graduates of our program. It was with a certain degree of ambivalence that I resigned my chairmanship and assumed the role of associate dean. At that time, Henry, at age 65, would retire. He asked me whether I was interested in being a candidate for the deanship. I was faced with the possibilities of assuming leadership of two other schools. Having spent most of my professional career at Boston University, I told Henry that I would, in fact, be a candidate. Ultimately, in 1977, I did become dean of the school. From 1977 to the present time [1993], I have been pleased with the kinds of changes that have occurred.

Q: What is the mission of the dental school?

A: The mission of the dental school is excellence in academics, in research, and in clinical care. An institution must, on an annual basis, analyze to see if it is achieving that mission.

In 1977, as a new dean, I faced some formidable administrative tasks. During the first three years, I spent a great deal of my time in a management, rather than leadership, role. In the transition, moving from solely graduate studies to predoctoral studies, there had to be multiple foci. A great deal of attention was given to curriculum development, which is one of the most critical parts of dental education. It is constantly undergoing a metamorphosis because of the addition of new scientific knowledge from research and clinical laboratories. A very critical aspect of achieving excellence is being open to change and being ready to incorporate it into the course studies.

There are two critical phases in the evolution of a school. First, the school must be aware of its internal environment, which includes curriculum, students, faculty, and patients. Next, the external environment is what is happening in the outside world, which encompasses people and social and cultural changes, as well as technological changes. I've always been a firm believer that if an institution has a harmonious internal environment, it can deal with the external environment. One must view change not as something to be feared, but as an opportunity. I think that's been one of the things that has allowed us to achieve our mission.

I also think that it is critical for a dental school to be an integral part of the total university. We've always had strong links with our School of Medicine from which our school grew. Originally, we were the Department of Stomatology, and we shared the basic sciences with the School of Medicine. Our research in the Department of Oral Biology has been critically helped by our alliance with this school. Another continuing relationship exists with the School of Public Health, which is part of the School of Medicine. We have also reached out to the School of Management because we are instituting programs to measure management and continuous quality improvement. We have developed programs with the School of Engineering, particularly in the areas of bioengineering and material design. Recently, we've approached the School of Theology because we're revising our ethics curriculum.

It would be helpful to our mission to ensure a level of scholarly activity by the faculty that identifies its commitment to research. I think research is an absolutely critical phase of an institution's evolution. Later on this year, we're going to add approximately 20,000 square feet of research space, particularly for the Department of Oral Biology. Also, we will have a new center for advanced medical research to be shared by the School of Graduate Dentistry and the School of Medicine.

A dental school has to be aware of who its consumers are and make certain that it serves them. It has various constituents, such as students, patients, faculty, and staff. It is also funded by the National Institutes of Health and is a member of the American Dental Association and the American Association of Dental Schools.

For example, four years ago we developed a general health program for the employees and staff of Boston University. The college constructed a new building located on the main campus and has instituted a dental benefit for the faculty and the staff. Together, we can enable the [dental] school to become an integral part of the fabric of the university. Dental schools that maintain this type of perspective will be successful in achieving their mission.

Celebrating the 25th Anniversary of the Henry M. Goldman School of Graduate Dentistry in 1988 are (left to right): Dr. Spencer N. Frankl; Mrs. Dorothy Goldman; Dr. Henry M. Goldman, dean emeritus; and John Silber, then president of Boston University.

Q: Can you describe Boston University President Dr. John Silber's working relationship with Dr. Goldman, and now with yourself?

A: That's an interesting question. In my 30 years at Boston University, I have served under four presidents: Harold C. Case, Arland Christ-Janer, Calvin B. T. Lee, and John Silber. During their tenures, the dental school went out of its way to establish good relationships with the administration. We made sure that the university knew how we made our commitment to the community around us. Our services include taking care of dental needs in the surrounding population that include the disadvantaged or homeless and working at the Boston City Hospital. Similarly, we are partnering with the city of Chelsea, where Boston University is involved in overhauling its educational system. We've always demonstrated our commitment to the total university.

Dr. Silber came here in 1971, and I've been very fortunate that, in my tenure as dean, I've been able to work with him. Henry had a very close relationship with John Silber, which continued because of my relationship with Henry. From the time that he arrived to the present, the university has blossomed under his leadership, which is built on the concept of excellence.

Q: How important is a commitment to continuing education for your graduates?

A: That's a critical part of the mission of the school. When a man or woman graduates a predoctoral or a postdoctoral program and receives a degree or certificate, that's really where his or her

Current GSDM Dean Dr. Jeffrey Hutter with former Dean Dr. Spencer Frankl in 2003.

education begins. If you want to be a true professional, you need a lifelong commitment to education. The changes that are occurring in the profession, science, and technologies require this. Our school tries to develop continuing education that allows the dentist to remain current.

Q: What is the future for the undergraduate and postgraduate student here and abroad?

A: I happen to feel that we live in very exciting times where rapid changes are occurring and some of the technological and scientific developments are extraordinary. Computers are revolutionizing the profession, both in the area of record-keeping and the potential for a paperless record system. The use of computers in areas of patient care and computerized restorations is exciting. Digitized radiography, new materials, and biochemical and physiological testing will enable the dentist to be seen as an oral physician.

Demographic changes occurring nationally and internationally require that our students be trained in the medical sciences. As a result, the dental and medical professions are drawing closer to one another. We live in a very small world where [technologies] allow us to communicate worldwide. They're going to be able to allow us to teach and deliver care more effectively.

Q: Do you have any closing thoughts on this interview?

A: Yes, this interview makes a valuable contribution that we are providing for generations to come (i.e., institutional memory). It's important for present and future students to see and understand the evolution of the parent institution, how it grew and developed, and where it was at this particular point in 1993. ■

Author's Note

Because Dean Frankl believed strongly in the power of mentoring and ensuring smooth transitions, he worked closely with Dr. Jeffrey Hutter, who became the third dean of the dental school and the first Spencer N. Frankl Professor in 2008.[3]

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MDS Year In Review

- Yankee Dental Congress 35 attracts more than 26,000 attendees and offers "Live Dentistry" on the Exhibit Hall floor for the first time
- The Wall of Wines at YDC 35 raises nearly $17,000 for the MDS Foundation
- The redesign of WORD OF MOUTH makes its debut
- The Council on Membership proposes a new Member Welcome Program
- The MDS *Call to ACTION* featured in a TV campaign and in a new radio commercial, with free airtime donated by radio stations across Massachusetts
- The MDS selects Officite as affinity partner for website design, hosting, and online search engine solutions, and negotiates relationships with companies to offer reduced rates on automated external defibrillators (AEDs)
- Ten new dentists recognized as "Ten Under 10" honorees
- The MDS website introduces new pages devoted to dental-related community service opportunities, and laws and regulations
- Facebook and Twitter pages are added to the Society's communications vehicles to members and the public
- Dr. and Mrs. Roderick Lewin join the MDS Foundation's Founder's Society
- The MDS mourns passing of former Trustee Dr. June Lee
- More than 80 members attend Beacon Hill Day at the State House in Boston
- Ninth annual MDS Foundation Golf Tournament held at the Blue Hill Country Club in Canton
- The MDS Foundation launches new grant program
- Dr. Alan DerKazarian named new chair of the MDS Foundation, succeeding Dr. Richard LoGuercio
- Dr. John Fisher is installed as MDS president; Dr. Charles Silvius is elected president-elect; Dr. Paula Friedman is elected vice president
- The MDS House of Delegates approves six resolutions, including the creation of the Greater Boston Pilot Group, which meets during the year
- Four new Guest Board Members selected
- Past President Dr. Milton Glicksman appointed to the Board of Registration in Dentistry (BORID)
- The MDS joins "Tooth Day" event at Fenway Park
- Dr. Raymond Martin named general chair of YDC 2013
- The MDS succeeds in eliminating Delta Dental's 5 percent discount; the State Division of Insurance approves new fee methodology; the MDS develops economic tool to help forecast impact of new fee methodology
- Governor Deval Patrick signs into law "An Act Relative to Certain Temporary Registrations and Volunteer Dentistry," sponsored by the MDS
- New BORID regulations go into effect; the MDS hosts a series of 12 informational sessions on new regulations attended by more than 1,500 members and their staffs
- The Standing Committee on Communications launches a new statewide radio campaign on the importance of dental exams for students starting school
- The MDS Foundation Mobile Access to Care (MAC) Van is sold to the Central Pennsylvania Institute, with proceeds going to the MDS Foundation
- The MDS Leadership Institute begins its fifth year by welcoming a new class
- The Society mourns passing of former Trustee and Officer Dr. Daniel Mahoney
- Former MDS President and current First District Trustee Dr. Robert Faiella announces candidacy for ADA president-elect
- Dr. Robert Leland, former chair of the MDS Council on Membership, is elected chair of the ADA Standing Committee on the New Dentist
- Dr. Michael Wasserman announces his candidacy for MDS vice president
- The MDS launches a new Grassroots Plan
- Publications and programs produced by the MDS Communications Department are recognized with more than a dozen local and national awards in 2010, including a Golden Apple Award by the ADA
- The Standing Committee on Communications launches a transit advertising campaign in Boston, Worcester, and Springfield to promote the MDS "Find a Dentist" service
- Seven dentists honored as 2010 William McKenna Volunteer Heroes

Case of Multiple Keratocystic Odontogenic Tumors

ROBERT RETI, DDS
PAULA NAVARRO, MD
KALPAKAM SHASTRI, DDS
DANIEL OREADI, DMD

Dr. Reti is a resident in the oral and maxillofacial surgery department at Tufts University School of Dental Medicine, Dr. Navarro is a resident in the department of pathology at Tufts Medical Center, and Dr. Shastri is a former assistant professor and Dr. Oreadi is a current assistant professor in the oral and maxillofacial surgery department at Tufts University School of Dental Medicine.

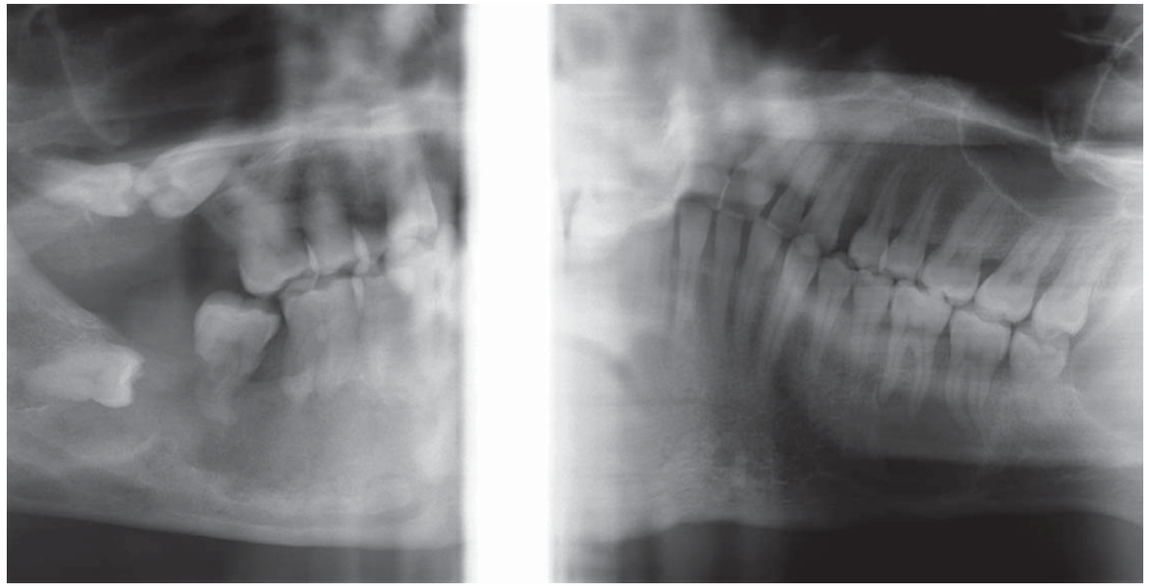


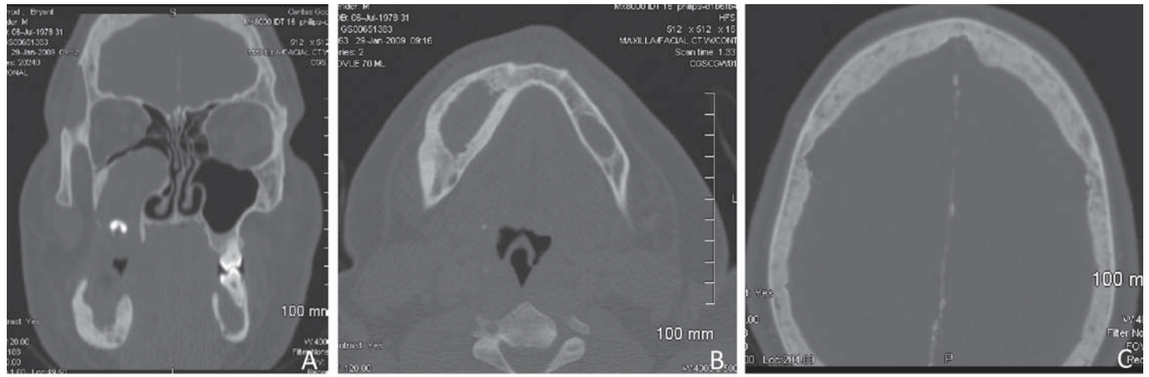
Figure 1. Initial radiograph with multiple radiolucencies and displacement of teeth and inferior alveolar nerve.

History

The patient, a 31-year-old African American male, was referred by his general dentist to the oral and maxillofacial surgery department at Tufts University School of Dental Medicine for evaluation and management of multiple radiolucencies in the mandible and maxilla noted on a panoramic radiograph. The patient's medical background was significant for obesity, hypertension, which was controlled with hydrochlorothiazide, and osteoarthritis of the right knee. Social background was positive for current smoking (smoking cessation was offered and declined) and social alcohol use.

Examination

On clinical examination, the patient presented as a morbidly obese male in no acute distress. He denied any fevers, chills, or nausea. The extraoral examination noted a mild swelling on the right side of his face. Mild ocular hypertelorism with frontal and temporal bossing was evident. The patient retained full range of motion of his neck, with no noted cervical lymphadenopathy. Multiple enlarged nevi with regular borders were noted on exposed arms, but the patient denied any history of skin lesions. The thyroid gland was appreciated with normal size. The intraoral examination was negative for any purulent drainage, parulis, or mobility of teeth. The dental exam was insignificant. There was no tooth mobility or significant dental work noted. His neurosensory function was intact. The oropharynx was clear with the uvula midline. The floor of the mouth was soft, nontender, and non-distended. The remainder of the head-and-neck examination was inconsequential.



Figures 2a–2c. CT scan showing extent of lesion and calcified falx cerberi: Figure 2a shows extent of maxillary right lesion into sinus, Figure 2b shows extent on mandibular lesions, and Figure 2c shows calcification of interhemispheric falx.

Radiographs

A panoramic radiograph was obtained but, due to the patient's size, the diagnostic quality of the image was reduced. (See Figure 1.) Multiple suspicious radiolucent lesions were identified in the ramus of the left mandible and in the body of the right mandible, causing displacement and uneruption of tooth #32. A large radiolucency was noted in the upper-right posterior maxilla extending to the maxillary sinus with displacement of teeth #1 and 2.

A computerized tomography (CT) scan of the head and facial bones was ordered for further evaluation. (See Figures 2a–2c.) Diffuse dural calcifications were seen, including interhemispheric falx cerebri, tentorium, and lateral convexities. There were multiple large expansile and lytic lesions in the upper-right maxilla, mandibular body, and ramus of the left mandible bilaterally. Of note, the lesion in the right maxilla extended into the right maxillary sinus and had displaced teeth #1 and 2.

The patient was brought to the operating room for marsupialization of right maxillary and bilateral mandibular cysts, as well as removal of teeth #1, 2, 17, 31, and 32. (See Figure 3.) The specimens were sent to the surgical pathology department at Tufts Medical Center for examination.

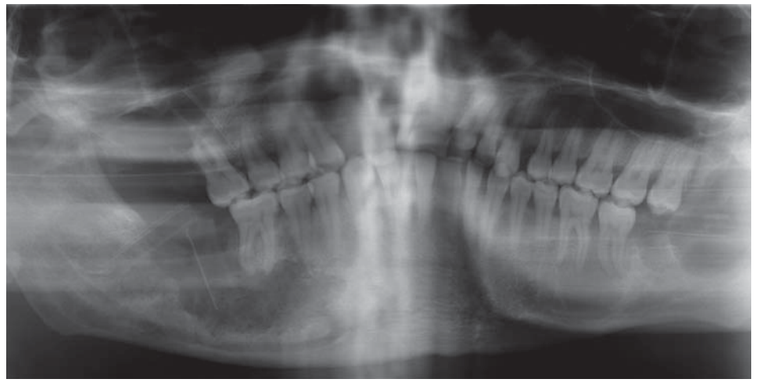
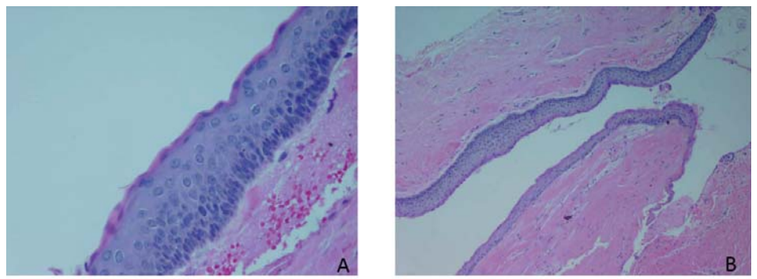


Figure 3. Postoperative radiograph with drains in place.



Figures 4a–4b. Histological examination. Figure 4a is a high-power view of the epithelial lining showing the epithelial layer with a consistent thickness of 6–8 cells. Luminal epithelial cells show a corrugated parakeratotic surface. Figure 4b is a low-power photomicrograph showing a cyst lined with stratified squamous epithelium of uniform thickness. Desquamated keratin can be seen within the cyst lumen.

Microscopic Examination

Histological examination demonstrated a thin, friable wall lined with a thin uniform layer of stratified squamous epithelium. (See Figures 4a–4b.) This epithelium was devoid of rete ridges and separate from the fibrous connective tissue wall. The basal layer consisted of a palisaded row of hyperchromatic cuboidal cells. A corrugated layer of parakeratin was also evident.

Differential Diagnosis

Odontogenic cysts
Ameloblastoma
Keratocystic odontogenic tumors (KCOT)

Diagnosis

Odontogenic keratocysts (keratocystic odontogenic tumors) associated with nevoid basal cell carcinoma syndrome (NBCCS)

Discussion

NBCCS was first described in 1894 by Jarisch and White highlighting the presence of multiple basal cells.[1] It was not until 1960 that it received its better-known eponym, Gorlin-Goltz syndrome, after Drs. Gorlin and Goltz established the triad of multiple basal cell carcinomas (BCCs), keratocystic odontogenic tumors (KCOTs) in the jaws, and bifid ribs.[1]

The prevalence of the syndrome is about 1 in 60,000 and it does not appear to have predilection for gender or race.[1,2] NBCCS is an autosomal dominant inherited disorder with high penetrance; however, 40 percent of cases result from new mutations. Alterations in the tumor suppressor gene Patched (PTCH) has been identified as the main culprit in NBCCS.[1] Changes in PTCH have also been observed in isolated BCCs (without any connection to the syndrome), medulloblastoma, and KCOT, all of which have manifestations in this syndrome.

The clinician is usually alerted to the syndrome when more than one KCOT is found in the maxilla or mandible of a young individual during routine radiographic examination in the first decade of life or if multiple BCCs are found on an individual less than 30 years of age. To confirm a diagnosis, either two major features or one major feature and two minor features must be present. (See Tables 1 and 2.) The major features are the presence of pigmented basocellular carcinomas, multiple KCOTs, palmar and/or plantar pits, and ectopic calcifications of the falx cerebri.[1–4] More than 100 minor features have been described; some of the more prominent are cardiac or ovarian fibroma, macroencephaly, kyphoscoliosis, cleft palate, medulloblastoma, mandibular prognathism, hypertelorism, frontal and biparietal bossing, meningioma, fibrosarcoma, rhabdomyosarcoma, short fourth metacarpal, strabism, spina bifida occulta, pectus excavatum, high-arched eyebrows and palate, and hypogonadism in men.

The need for early diagnosis is based on the susceptibility of this group of patients to neoplasms, including basal cell carcinomas and medulloblastoma. If a diagnosis is not made early, the symptoms increase in severity with age and can become destructive. Additionally, early diagnosis allows the patient to be directed to the appropriate specialists for management and often affords conservative therapies.

KCOTs represent 3 to 15 percent of odontogenic cysts and are present in more than 75 percent of NBCCS cases.[1] These tumors are relentless, due to biological aggressiveness associated with a high rate of recurrence. KCOTs in the absence of the syndrome most often occur in the posterior mandible, but when associated with NBCCS, appear throughout the jaws. It has been shown that KCOTs, when associated with NBCCS, show a higher number of satellite nests of tumor, more solid areas of epithelial proliferation, and odontogenic epithelial rests within the fibrous capsule than found in the sporadic type. This observation may have a relationship with the higher recurrence rate of KCOT associated with the syndrome (63 percent) than in the nonsyndromic cases (37 percent).

Although the syndromic type recurs more often, these tumors behave similarly in terms of local aggressiveness. A recent study examining the immunohistochemical analysis of KCOTs using differentiation and proliferation markers, proliferating cell nuclear antigen, and protein 53 showed no correlation between the expression and the type of KCOT.[6] For this reason, the surgical treatment plan may not be influenced by the association with NBCCS. Surgical treatment options for KCOT in NBCCS parallels those for sporadic KCOT, which include marsupialization, enucleation, and curettage with or without adjuvant treatments, including cryotherapy or Carnoy's solution application and resection in the setting of repetitive recurrences.[1] The clinician must consider that, due to the earlier onset of these tumors with NBCCS, they may be associated with a tooth follicle (KCOT dentigerous type); in such cases, marsupialization and orthodontic guidance should be considered first, if possible.

Table 1. Major Clinical Features of Nevoid Basal Cell Carcinoma Syndrome (NBCCS)

- Multiple basal cell carcinomas
- Keratocystic odontogenic tumors
- Palmar/plantar pits
- Calcified falx cerebri
- Enlarged calvaria
- Rib abnormalities (bifid/splayed/missing or fused ribs)
- Kyphoscoliosis
- Pectus excavatum
- Hypertelorism

Table 2. Morbidities/Pathologies Associated with Nevoid Basal Cell Carcinoma Syndrome (NBCCS)

- Ovarian fibrosarcomas
- Medulloblastomas
- Mental retardation
- Meningiomas
- Craniopharyngiomas
- Pseudocysts of phalanges
- Epidermoid cysts
- Fetal rhabdomyomas

Non-melanotic skin cancer is the most frequently diagnosed type of malignancy in the United States, with an incidence of 232.6 per 100,000 in the white population and 3.4 per 100,000 for African Americans.[7] BCCs make up one-third of all cancers and are the most common cutaneous malignancy. Eighty-five percent of lesions occur on the skin of the head and neck, and the dental clinician may be the first to identify a suspicious lesion during a routine head-and-neck exam. Common areas of occurrence include the periocular areas, eyelids, nose, malar region, and upper lip.

All patients with NBCCS should see a dermatologist for regular skin examinations so that suspicious nevi can be investigated. The number of BCCs can range from one to hundreds, and can have a wide spectrum of clinical presentation. The lesions are peculiar in the case of NBCCS, as they will appear in areas that are exposed to the sun, such as the face and neck, as well as areas that are not exposed, such as the trunk.[3] BCCs associated with NBCCS tend to have a less aggressive progression as compared to those derived from sun damage, and so a period of observation is recommended prior to any treatments.[1]

Fulminant multiple basal cell carcinomas can lead to disfigurement and, ultimately, disability. Only selective removal of those BCCs should be performed if signs of ulceration, enlargement, crustation, and bleeding (indicative for transformation to an aggressive behavior) are present. Sun protection is vital to reduce the chance and number of skin cancers developing, but even complete protection will not prevent all basal cell carcinomas from developing. Early patient education regarding signs of skin cancer is highly recommended.

In addition, it is important that clinicians attempt to reduce exposure of these patients to radiation.[5] BCCs tend to form in the area of radiation exposure (e.g., from dental X-rays or in areas of radiation treatment for medulloblastoma).

Conclusion

It is important for the general practitioner to be aware of the signs and symptoms of NBCCS as they appear early on during childhood and adolescence. The first sign is most often the appearance of multiple KCOTs found incidentally during routine examination. Early diagnosis is critical, as it may allow for more conservative treatment, identify associated pathologies, allow for genetic counseling, and, most importantly, direct the patient to the appropriate specialists. As there is no cure, treatment involves therapeutic management of the syndrome's clinical manifestations. Guidelines for follow-up include annual cerebral magnetic resonance imaging (MRI) scans between ages 1 and 7, biannual neurological exams, panoramic X-rays every 1 to 1.5 years (although the trend is now to obtain MRIs), annual skin exams, and cardiac exams as the signs and symptoms dictate. Although many individuals will require multiple surgical procedures, the prognosis is excellent. Frequent follow-up should allow the majority of these patients to expect a full lifespan with a high quality of life. ■

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MEDIAN RHOMBOID GLOSSITIS

Typically presenting as a well-demarcated "rhomboid" area of erythema anterior to the circumvallate papillae of the mid-dorsal tongue, median rhomboid glossitis (MRG) occurs in up to 1 percent of the population.[1] MRG is classically described as a focus of symmetrical filiform papillary atrophy and may exhibit either a smooth or a lobulated surface architecture.

Historically, MRG was presumed to represent a developmental anomaly; however, due to the frequency of candidiasis associated with this lesion, contemporary literature suggests a likely contributing factor to be chronic fungal colonization. *Candida albicans* has been shown to preferentially colonize the posterior dorsal aspect of the tongue in a percentage of otherwise healthy individuals.[2] Additionally, the tongue is positioned against the palate at rest, during swallowing, and for the formation of certain vocal sounds. This constant irritation, coupled with a hospitable environment for candidal colonization, has been suggested as an underlying etiology for the development of this lesion.[3–4] Further, erythematous candidiasis of the palate—known as a so-called "kissing lesion"—secondary to intimate contact between median rhomboid glossitis and the hard palate has been described.[5–6]

Median rhomboid glossitis showing characteristic central papillary atrophy in the midline of the posterior dorsal tongue.

Asymptomatic lesions of MRG do not require treatment; however, in instances where the patient is symptomatic, empirical treatment with clotrimazole troches may lead to either complete or partial resolution of the lesion. Habitual placement of candies or breath strips on the tongue may create a similar depapillated area, although the change predominantly occurs on the middle third of the dorsal tongue (midline or lateral location). Careful history taking usually helps determine the underlying cause. An unclear etiology or an element of suspicion may warrant a biopsy for definitive diagnosis. ■

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ADVERTISER INDEX

3-D Imaging and Dental Implants

ARUNA RAMESH, BDS, DMD, MS, DIP. ABOMR
RUMPA GANGULY, BDS, MS, DIP. ABOMR
Dr. Ramesh is an associate professor and Dr. Ganguly is an assistant professor in the oral and maxillofacial radiology department at Tufts University School of Dental Medicine.

Figure 1. The implant marker on a diagnostic stent facilitates assessment of bone height above the nerve canal and checks angulation of the proposed implant with respect to the available bone.

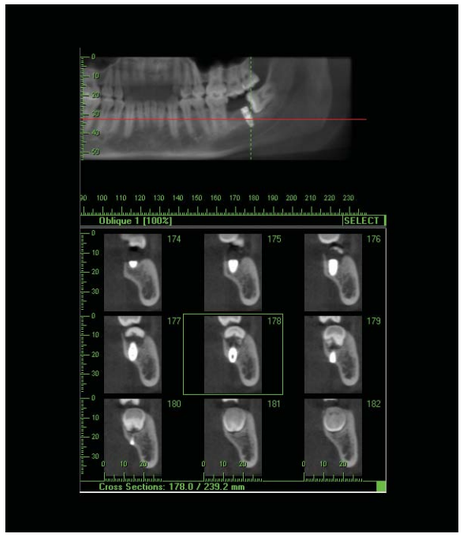

Figure 2. These 3-D images and CBCT cross-sectionals for the same implant site show placement through the undercut. This information is obviously missing on the 2-D images.

Dental implants have become a prevalent choice for treating partial and complete edentulism. Imaging of the proposed dental implant site is vital for implant treatment planning. Traditionally, conventional radiographs (periapical and panoramic) have been used for this purpose. Although periapical radiographs are able to assess the health of bone in the proposed site, the information is limited as the 3-D anatomic details are imaged on a 2-D medium, resulting in superimposition of anatomic structures. This does not allow the clinician to evaluate relationships of adjacent vital structures and cross-sectional morphology. Panoramic radiographs serve as an excellent tool for reviewing the maxillofacial region; however, due to magnification of structures, double image formation, and distortion—especially with improper patient positioning—measurements made on these radiographs tend to be inaccurate. The much-needed cross-sectional information is also lacking with these radiographs.

The two most relevant 3-D imaging modalities for implant treatment planning are conventional computed tomography (CT) and cone beam computed tomography (CBCT). The limitations of conventional CT include high radiation exposure to the patient and high cost. CBCT is a newer technology specifically designed for the maxillofacial region with much-reduced radiation exposure and affordable cost to the patient. CBCTs have been used for more than a decade for obtaining 3-D views of proposed implant sites.

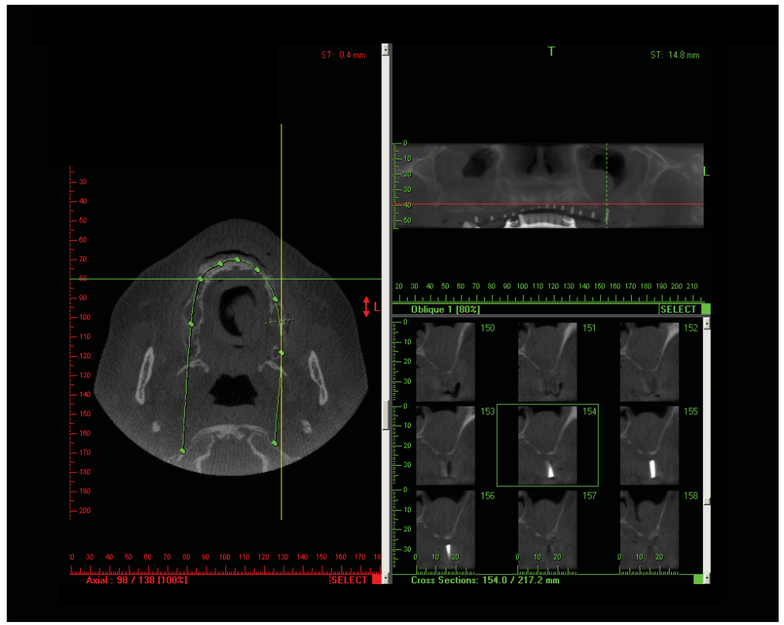

Figure 3. Cross-sectional slices show discontinuation in the floor of the maxillary sinus. Note that this region is a proposed implant site.

Many practitioners who have been placing implants for years do not understand the need for 3-D imaging. Their question is, why do we need cross-sectional information for placement of dental implants? Assessment of an implant site with 3-D imaging allows measurement of available bone in all three dimensions, the third dimension being the information about the width of bone available. Despite the fact that one can measure the height of available bone on traditional 2-D radiographs, these radiographs do not allow the clinician to determine the orientation of the long axis of bone. This information is vital, as the implants are required to be placed along this long axis to avoid perforation of cortical plates.

The use of a diagnostic stent with implant markers for proposed implants during acquisition of the CBCT scan can help in initial planning of the angulation and length of implant required to engage the available bone. (See Figure 1.) Any osseous undercut present in the proposed site will also be evident on the cross-sectional images, allowing the clinician to avoid placement of implant through the undercut area and minimize postsurgical complications. (See Figure 2.) Osseous morphology, such as knife-edge ridges, developmental variation, trabecular pattern and density, and cortical integrity, can be easily evaluated on the cross-sectional slices. (See Figure 3.) Most importantly, proximity of the proposed implant to the adjacent vital structures, such as the inferior alveolar canal or the floor of the maxillary sinus, can be easily visualized and the height of bone can be measured using the measurement tools.

The CBCT data can be imported into a third-party software (SimPlant™, Facilitate™, NobelGuide™, Anatomage™) to plan the surgical and prosthetic components of implants. This interactive virtual placement of implants allows the clinician to plan the implant surgery and its restoration, avoiding complications. Finally, the information from the treatment planning can be transferred into the fabrication of a surgical guide with metal sleeves serving as drilling guides for the clinician.

With all these advantages, the CBCT as a diagnostic modality and prerequisite for surgical guide will impact the success rates of dental implants. ■

Have a Question or Comment?

To contact our editorial department, write to JOURNAL OF THE MASSACHUSETTS DENTAL SOCIETY, Two Willow Street, Suite 200, Southborough, MA 01745, or email Managing Editor Melissa Carman at ***mcarman@massdental.org***.

NORMAN BECKER, DDS, EDITOR EMERITUS

Periodontal Regenerative Therapy

ANTON SCULEAN, EDITOR

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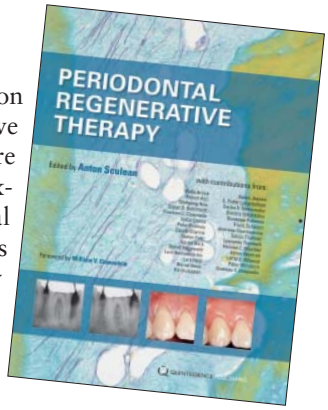

To quote the editor, Dr. Anton Sculean, "Today, regenerative periodontal therapy can only restore a fraction of the original tissue extent and the complete periodontal restoration may still be regarded as a dream." This statement perfectly summarizes this textbook's aim, which is to aid dental students, clinicians, and clinical researchers in understanding the fundamentals of periodontal regenerative therapy. Using the talents of a gathering of outstanding clinicians and educators, Dr. Sculean presents the current best approaches in the treatment of osseous and soft-tissue defects.

In 18 chapters, the contributors cover the most important aspects related to anatomy, wound healing, regenerative materials, surgical techniques, and clinical applications of regenerative procedures. Using text, drawings, clinical photographs, and illustrations, this book presents a comprehensive overview of the use of regenerative techniques in periodontology.

Clinical Dental Medicine 2020

NAIRN H. F. WILSON, EDITOR

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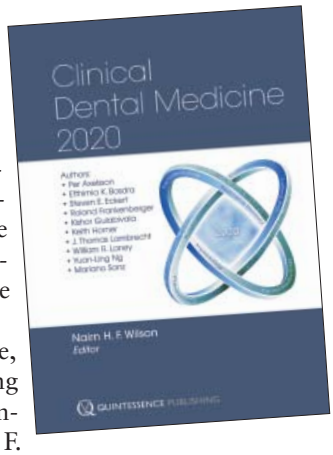

From the preface of this text: "This book was commissioned as one of the initiatives to mark 60 years of publishing by Quintessence. It provides authoritative commentaries by international opinion leaders on the state of the art and science of dentistry and looks forward, scoping anticipated developments in the major areas of clinical practice."

Beginning with Chapter One, "Dentistry Today," and completing the cycle with Chapter 11, "Dentistry Tomorrow," editor Nairn H. F. Wilson has assembled a wide array of contributors to discuss the disciplines of prevention, radiology, restorative dentistry, prosthodontics, periodontology, endodontology, implant dentistry, orthodontics, and oral surgery. Starting with history, then examining present-day status and functions, and anticipating future possibilities, each contributor presents a lecture-type treatise of his or her field, bearing in mind that clinical practice is becoming more specialized and that dentistry today is a complex health care science. This text is not only educational, but also fun to read.

Dental Practice: Get in the Game

MICHAEL M. OKUJI, EDITOR

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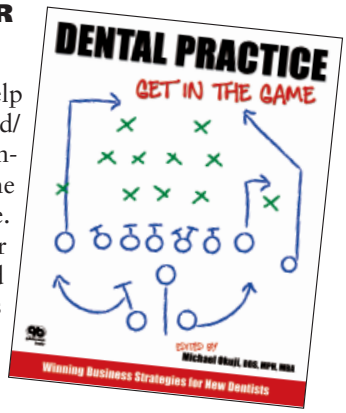

The goal of this text is to help the senior dental student and/or anyone planning for the beginning of a practice to understand the "game plan" of having a practice. It is not intended to substitute for legal, accounting, insurance, and commercial advice. Rather, it is meant to provide pertinent information that will equip students and graduates with the tools for understanding basic business concepts in order to be able to ask the appropriate questions. And with the help of many contributors, editor Dr. Michael Okuji has done this clearly and done this well.

With the aid of personal histories, the contributors cover such topics as career paths, job searches (including associate positions), purchasing a practice, starting a new practice, insurance (both personal and professional), communication, basic finances, dental regulations compliance, and basic business plans.

At first glance, it might appear that the material is overwhelming, but as one gets into the material and with the help of the individual experiences being told, many valuable and thought-provoking ideas are presented. This book isn't just for beginners, though. The more experienced practitioner will find information within the text that may help clarify and explain some of the actions we now do by rote. ■

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ART OF DENTISTRY

ANONYMOUS
A letter from a grateful patient to his dentist and dental office staff

FROM THE OUTSIDE LOOKING IN

Dr. Smiley Sealants
20 Primary Way
Gummy Smiles, MA

Dear Dr. Sealants,

Please express my thanks to the kind hygienist who diligently endeavored to return my oral cavity to its optimal health. Also, please let the much-beleaguered employees of your facility know that now, at 11:30 p.m., I am finally able to go to bed. I have brushed, flossed, rinsed, rinsed with mouthwash, painted my mouth with some strange substance that is supposed to relieve my previously minor tooth sensitivity, then repainted my mouth because it says to use it twice daily and, at 11:27 p.m., I chose not to set my alarm for 11:59 to ensure the second application occurs in the same calendar day.

I have also used a gum agitator (not really needed tonight), scraped my tongue (twice . . . the second time to get rid of the glycerin and amorphous silica that I applied for a second time to get rid of my aforementioned tooth sensitivity yet somehow got all over my tongue), and then flossed again to get rid of all the new detritus that had accumulated between my teeth in the previous 78 minutes of tooth and gum care.

Once I was sure that nothing short of rinsing with bleach would get my mouth any cleaner, I stuck a wad of my kid's Play-Doh in my mouth, hoping that when it dried I would have an urgently needed mouthguard. This is needed, of course, to prevent any "clenching" that may take place during sleep, exercise, or any other time when I might actually have to breathe. Sometime later, after regaining consciousness and having my saintly spouse pry the dried Play-Doh from my mouth with a crowbar (don't ask), I realized that the entire process (minus the Play-Doh part) would need to be repeated, lest I risk sleeping with nary more than a speck of dust in my nearly hospital-sterile aperture.

So, after repeating the entire process again (minus the Play-Doh), I thought I was finally ready for bed. Alas, how silly of me. I had nearly forgotten the most important part! I still had to spray (yes, spray) some never-before-tried-by-anyone-in-your-office's substance into my mouth to prevent my gums from drying during the course of the night, when, while sleeping, I was also supposed to remember to not "clench" my teeth. (Somewhere along the way, sleeping became harder than working . . . and one wonders why people resist going to the dentist. How foolish.)

Thanks for making me the experimental subject. And I quote Ms. Sulcus, your premier hygienist, "Mr. Tartar, I'm gonna give you something some sales rep dropped off today. We've never tried it, but he promised it'll work great." Big confidence booster there. Thanks. So, after 47 sprays ("Up to 60 Sprays a Day!" says the bottle) of this liquid that I'm convinced came from Revere Beach and was mixed with windshield washer fluid, I was finished.

By the way, have any of you read the warnings on the back of the package? I had time to as I sprayed. Quite an accomplishment, actually—reading, spraying, reading, spraying, cleaning my glasses, spraying again, etc. Seriously, read 'em. Thanks, but I think I'll stick to the dry gums. High fever, nausea, vomiting or . . . dry gums. Yeah, tough choice.

So anyway, just as I thought I was done and ready for bed, I read the label one more time: "Lather, rinse, repeat."

I can't thank you and your staff adequately for your efforts on behalf of my oral health.

Sincerely,
Hardley Tartar