JOURNAL of the
MASSACHUSETTS DENTAL SOCIETY
Summer 2007

Considerations for Treating the Patient with Scleroderma

JUST IMAGINE...

Yankee Dental Congress® 33

Boston Convention & Exhibition Center
January 30 – February 3, 2008
Exhibits, January 31 – February 2

The Best in Dentistry Under One Roof

EDUCATION • EXHIBITS • EVENTS • EDUCATION • EXHIBITS • EVENTS

Celebrity Entertainment

Sheryl Crow

FRIDAY
February 1, 2008

Tickets go on sale September 26, 2007, at 12 noon.

YDC HAS BOSTON'S BEST HOTEL CHOICES

Visit our Web site to view our housing blocks

PROGRAM HIGHLIGHTS

Bruce Bavitz, DMD, Oral Surgery
Hal Crossley, DDS, Pharmacology
Jennifer de St. Georges, Practice Management
Mel Hawkins, DDS, Pharmacology
Kenneth Koch, DMD, and Dennis Brave, DDS, Endodontics
Henry Lee, PhD, Forensics
John Molinari, PhD, Infection Control
Anthony Sclar, DMD, Implants
Jane Soxman, DDS, Pediatrics
Frank Spear, DDS, Restorative
Jon Suzuki, DDS, Periodontics
John Svirsky, DDS, Oral Pathology
. . . and many more of the best clinicians in dentistry!

DON'T MISS THESE NEW PROGRAMS

Las Vegas Institute of Advanced Dental Studies
Medical/Dental Forum—The first program of its kind!

New Date!

Housing & Registration Open September 26, 2007, at 12:00 noon EST

VISIT WWW.YANKEEDENTAL.COM

800-342-8747 (MA) • **800-943-9200** (Outside MA)

WHERE DENTAL PROFESSIONALS COME FIRST

YANKEE DENTAL CONGRESS℠

MASSACHUSETTS DENTAL SOCIETY

Executive Director
Robert E. Boose, EdD

Senior Assistant Executive Director, Meeting Planning and Education Programs
Michelle Curtin

Assistant Executive Director, Senior Policy Advisor
Karen Rafeld

Chief Financial Officer
Kathleen M. Boyce, CPA

Senior Director, Executive Office Operations
Lois Holt

Chief Communications Officer
Scott G. Davis

Director of Membership
Marc Kaplan, CAE

Director, Convention and Continuing Education Services
Marlene Petro

Director, Governmental Affairs and Grassroots Advocacy
Robert J. Alconada, MPA

Director of Sales
Shannon McCarthy

Director of Events and CR
Maryellen Geurtsen

Director of Continuing Education
Dorrey Powers

Manager, Membership Operations
Maggie Brown

Manager, District Membership Services
Ellen B. Factor

Manager, Exhibits and Operations
Stefanie Cunniffe

Manager, Community Relations and Dental Access
Michelle Sanford

Manager, Information Systems
Jesse Mirenda

Technical Support Specialist
Mike Foster

Accounting Coordinator
Miriam Miranda

Senior Coordinator, Allied Services and Continuing Education
Susan Karp

Exhibit Sales
Meghan Sullivan

Coordinator, YDC Registration and Catering
Lori Robinson

Volunteer Coordinator
Tammy Putney

Allied Program Coordinator
Alicia Wright

Scientific Program Coordinator
Jacqueline Joy

Exhibits Coordinator
Rachel Marks

Customer Relations Coordinator
Kate Maher

Scientific Program Assistant
Amy Jordan

ADMINISTRATIVE ASSISTANTS

Executive Assistant - Colleen Chase
Membership - Marsha Fisher
Membership and Cash Receipts Administrator - Barbara Morgan
Governmental Affairs & Communications - Andrea Dotterer
Meeting Planning - Arlene Haddad
Marketing - Julie Pearson
Special Projects - Jessica Robinson
Receptionist - Anne Morin

MDS FOUNDATION

Manager, Foundation Development for Access to Care Programs
Tara Brady

MAC Van Coordinator
Michael Henry

MDS INSURANCE SERVICES, INC.

Managing Director - George Gonser Jr.
Supervisor, Client Services - Robin Anastas
Client Services Analyst - Sarah Kulis
Client Services Analyst - Anna Karas
Administrative Assistant - Patricia J. Gunning

Massachusetts Dental Society

Two Willow Street, Suite 200
Southborough, MA 01745-1027
(508) 480-9797 • (800) 342-8747 • fax (508) 480-0002
www.massdental.org

OFFICERS

President	Andrea Richman, DMD PO Box 576, 18 Westford Road, Carlisle 01741, (978) 369-7967
President-Elect	Milton A. Glicksman, DMD 49 State Road, #101, Nauset Bldg., Dartmouth 02747, (508) 999-2234
Vice President	David S. Samuels, DMD 2 Stevens Street, Andover 01810, (978) 475-0567
Speaker of the House	Thomas P. Torrisi, DDS 60 East Street, #3000, Methuen 01844, (978) 681-7740
Secretary	Charles L. Silvius, DDS 34 Shirley Avenue, Revere 02151, (781) 286-3700
Assistant Secretary	Anthony N. Giamberardino, DMD 84 High Street, #304, Medford 02155, (781) 396-3800
Treasurer	Charles A. Gagne, DDS PO Box 367, 1A Hawthorne St., N. Grafton 01536, (508) 839-6464
Assistant Treasurer	David A. Schmid, DDS 435 Furnace Street, Marshfield 02050, (781) 837-1810
Immediate Past President	Alan S. Gold, DDS 515 South Street, Pittsfield 01201, (413) 443-3144
Editor	David B. Becker, DMD 34 Shirley Avenue, Revere 02151, (781) 286-3700
Assistant Editor	Arthur I. Schwartz, DMD 599 North Avenue, Door 9, Wakefield 01880, (781) 245-8811

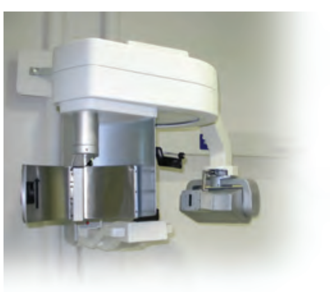
DISTRICT TRUSTEES

Berkshire	Michael Wasserman, DDS 54 Wendell Avenue, Pittsfield 01201, (413) 442-2052
Cape Cod	Anthony T. Borgia, DDS 441 Route 130, Sandwich 02563, (508) 888-8482
East Middlesex	Lisa Vouras, DMD 85 Woburn Street, Reading 01867, (781-944-4940
Merrimack Valley	Howard M. Zolot, DMD 114 Executive Park, 1538 Turnpike Street, North Andover 01845, (978) 687-7788
Metropolitan	James S. Cinamon, DMD 223 Walnut Street, #6, Framingham 01702, (508) 872-1422
Middlesex	Janis C. Moriarty, DMD 607 Main Street, Winchester 01890, (781) 729-7767
North Metropolitan	David B. Becker, DMD 34 Shirley Avenue, Revere 02151, (781) 286-3700
North Shore	John P. Fisher, DDS 18 Hawthorne Boulevard, Salem 01970, (978) 744-1209
Southeastern	Michel A. Jusseaume, DDS PO Box 3297, 1021 Main Road, Westport 02790, (508) 636-5111
South Shore	David B. Harte, DMD 480 Adams Street, Milton 02186, (617) 696-5257
Valley	Stephen W. McKenna, DMD 1285 Springfield Street, Feeding Hills 01030, (413) 786-4000
Wachusett	Roderick W. Lewin, DMD 100 Gibson Road, Ashburnham 01430, (978) 665-5897
Worcester	William R. Dennis, DDS 622 Main Street, Shrewsbury 01545, (508) 845-1156

JOURNAL

COVER

FEATURES



DEPARTMENTS

COLUMNS

HOW TO REACH US

All communication intended for publication should be addressed to Dr. David Becker, Editor, Journal of the Massachusetts Dental Society, Two Willow Street, Suite 200, Southborough, MA 01745. Opinions and statements by contributors indicate personal views of the authors and are not to be construed as expressing an official position of the Society.

FEEDBACK To contact our Editorial Department, call (800) 342-8747, ext. 260, or write to Melissa Carman, Journal of the MDS, Two Willow Street, Suite 200, Southborough, MA 01745, fax (508) 480-0002, or email *mcarman@massdental.org*.

QUESTIONS Send your questions to Journal of the MDS, Two Willow Street, Suite 200, Southborough, MA 01745, fax (508) 480-0002, or email *mcarman@massdental.org*. Include your name, address, and office phone number. We can't reply by mail, but we will publish as many questions as space permits.

ONLINE Remember to check out the Journal, now available online, at *www.massdental.org*.

EVERY DENTIST'S RESPONSIBILITY

The goal of the annual Washington Leadership Conference is to educate members of Congress about issues of importance to dentistry. Dentists from all over the country, representing the complete spectrum of professional interests and political positions (red state, blue state, and all the colors in between), come together to discuss these issues. The sessions tend to be very educational and sometimes very heated—it is enlightening to see how many diverse approaches exist to solve the same problems.

In past years, the important discussions were related to issues such as fluoridation, safety of amalgam, oral health education, manpower, and education. This year was different. The only topic of substance was access to care.

With the current federal administration's focus on issues other than dental care, it is exceptionally likely that dental access programs will be hurt by the budget process. Programs such as funding for general practice residencies, the Indian Health Service, and care for children, the elderly, and people with disabilities need very strong advocates. Organized dentistry has accepted this role.

Here in Massachusetts, we have additional concerns.

There are a number of issues before our state legislature relating to access to care. One of these has been introduced by the Massachusetts Dental Society to improve the delivery of care by creating a dental workforce that relies on a full dental team approach to diagnosis and treatment, with appropriate training for, and supervision of, nondentist personnel.

Opposing this is a proposal by the Massachusetts Dental Hygienists Association that attempts to destroy the dental team concept. This legislation would create a "public health dental hygienist" whose only qualification for certification would be one year of full-time clinical experience. This bill would also require dentists to accept Medicaid—in a manner as yet undefined—as a prerequisite of licensure.

The public health hygienist would be allowed to perform hygiene procedures, place sealants, and render "atraumatic"(*sic*) restorative therapy without supervision by a licensed dentist. This new class of care provider would also be eligible to be reimbursed directly by Medicaid or other third-party programs. Since the retail pharmacy chain CVS has recently announced that it is setting up "Minute Clinics" with nurse practitioners providing "basic medical care," how long before large chains follow suit and set up dental hygiene clinics?

We as a profession must be proactive. We have to lead by example and show the public and the state legislature that we are providing the dental care that is needed. Each of us must review our positions on becoming MassHealth providers (the program has been made more user-friendly, and now we, as providers, can choose the number of patients we wish to treat).

We should also volunteer to provide services in nontraditional reduced or no-fee settings to those without the means to currently receive care in traditional settings. The MDS Foundation Mobile Access to Care (MAC) Van, as an example, is a very public, high-profile way to show that the profession cares about providing services to children in need. Lawmakers must see us working to solve the problems that exist, or we will be forced to work under their regulations.

It bears repeating: We, as members of a caring profession, have to be proactive. The operative word is "caring." Do not assume that others will solve the problem for you. Think compassionately and act boldly. Your professional future is in your hands. ■

David B. Becker

Arthur I. Schwartz

JOURNAL OF THE MASSACHUSETTS DENTAL SOCIETY

Editor
Dr. David B. Becker

Assistant Editor
Dr. Arthur I. Schwartz

Editor Emeritus
Dr. Norman Becker

Managing Editor of Publications and Web Site
Melissa Carman

Manager, Graphic Design
Jeanne M. Burdette

Graphic Designer
Shelley Padgett

 ISSN: 0025-4800

The Journal of the Massachusetts Dental Society [USPS 284-680] is owned and published quarterly by the Massachusetts Dental Society, Two Willow Street, Suite 200, Southborough, MA 01745-1027. Subscription for nonmembers is $12 a year in the United States. Periodicals postage paid at Southborough, MA, and additional mailing offices.

Postmaster: Send address changes to: Journal of the Massachusetts Dental Society, Two Willow Street, Suite 200, Southborough, MA 01745.

Contributions: Please see page 35, contact the Communications Department, or visit *www.massdental.org* for author's guidelines.

Display ad closing dates: February 1, May 1, August 1, November 1. For more information, contact Rachel Marks, Exhibits Coordinator, at (508) 480-9797, ext. 259, or email *rmarks@massdental.org*.

Member Publication
American Association of Dental Editors

Letters to the Editor

One of the referral services the Massachusetts Dental Society provides to the public is the names of member dentists who will make housecalls, the Home Visit Referral Service. Unfortunately, the list of dentists who provide housecall visits is extremely short. I am contacted frequently by the families of nonambulatory patients needing dental care who have obtained my name from the MDS. I attempt to see as many of these patients who reside in my general area as possible. However, the limitations of my availability and the impractical distances that many of these patients live from my area leave a great number of needy patients without any options for receiving dental care. It is my wish to see more dentists partake in this much-neglected segment of dentistry.

Housecall dentistry includes visits to people's homes, assisted-living facilities, nursing homes, hospitals, and similar sites. At times, I have even performed some simple services for patients while they sat in their cars in the parking lot behind my office. The services I have performed run the spectrum from minor denture adjustments to crown fabrication. There are some patients whom I have been visiting regularly for many years; some patients I visit only once. The variety of services one can provide during housecalls is determined by the dentist's comfort level and the portable equipment he or she has available to work with.

I have found patients and their family members whom I have treated during housecalls to be extremely appreciative of my efforts. Recently, I had the honor of visiting a college professor who was in hospice care at his home. He was afflicted with metastatic cancer. Despite the horrendous medical challenges he was dealing with, his only complaint was the inability to eat due to a jagged edge associated with a fractured tooth. I simply covered the jagged edge of his tooth with a glass ionomer material and he instantly felt better. After his death, his daughter called me and tearfully expressed her thanks for my making her father comfortable during his final days.

Decades ago, it was common practice for the family physician to visit patients at their homes when they were too ill to leave their beds. When we reflect on this old practice, we lament that there are no longer many doctors with that type of dedication to their patients. I suggest that dentists can obtain that level of respect from the public by making greater efforts to help patients outside our offices. This is particularly relevant at a time when our profession is viewed as being more concerned with financial gain than satisfying the needs of our patients.

Housecall dentistry is challenging. In the absence of the normal fixed office equipment, housecall dentists must be creative and flexible.

Anything at all that we can do for these nonambulatory patients is beneficial. I urge more dentists to contact the MDS and offer their names to be included in the Home Visit Referral Service. The rewards of providing such service will greatly surpass the efforts required to administer it.

Respectfully submitted,
Keith Asarkof, DMD
Lexington

Editor's Response: The Massachusetts Dental Society Home Visit Referral Service currently has 33 MDS members. If you would like to join the Housecall Referral list, contact Andrea Dotterer at the MDS at (800) 342-8747, ext. 271, or email **adotterer@massdental.org**.

Contact Us

Have a comment about a specific article or the Journal *in general? Send your Letters to the Editor to Melissa Carman, Managing Editor, Two Willow Street, Suite 200, Southborough MA 01745, fax (508) 480-0002, or email* **mcarman@massdental.org**.

FINANCIAL SERVICES CORNER

Editor's Note: The following is intended to be informational. You should consult with your financial advisor before investing. This article is brought to you by Eastern Dental Financial Services. Printed with permission from Liberty Publishing, Inc.

ESTATE STRATEGIES AND YOUR FAMILY BUSINESS

LIQUIDATING THE family business in order to pay estate taxes is often a grim reality for families of individuals who die without wills or estate plans. If you own a family business, you need to take steps now to help ensure that one of your most valuable assets will still be around for your children, grandchildren, and beyond.

The Facts on Family-Owned Businesses

The terms "family business" and "small business" can be misleading, especially when you consider the impact these businesses have on the U.S. economy. Of all small companies in the United States employing fewer than 500 people, 89 percent are owned by families. According to 2007 statistics from the Family Business Institute, 24.2 million family-owned U.S. businesses employ 82 million people, or 62 percent of the U.S. workforce.

It's natural to assume that many business owners would like to keep this kind of influence in their families. However, in reality, the situation is much different: Only a fraction of business owners who want their family business to remain in the family actually take steps to plan a formal succession, according to the Boston-based Family Firm Institute.

Why do so many business owners fail to act on their intentions? Because business continuation is often a difficult subject for family business owners to broach. In many cases, the subject of succession is avoided rather than approached. It is often a taboo topic.

Business owners may be reluctant to hand over something they spent much of their lives building. They may be forced to confront and resolve sibling rivalry and other unpleasant family disagreements. Sometimes owners will have greater difficulty grooming a family member for succession because of the overlap of family and business boundaries. Additionally, if the owners plan to rely on the family business for retirement income, they may worry about the business's success under new owners.

But the costs of not planning for the continuation of family businesses may be enormous. Often, companies without formal succession plans are courting disaster. Statistics reported by the Family Firm Institute show the following trends:

- More than 33 percent of family businesses survive into the second generation.
- Around 12 percent of family businesses are viable into the third generation.
- Only 3 percent of all family businesses operate into the fourth generation and beyond.

Survival Planning for Your Family Business

How can you make sure that your business avoids becoming one of these statistics? A sound solution is to establish an estate plan. Simply put, you need to do the following:

- Develop a formal management succession strategy and ensure that your business stays in the family after your death.
- Equalize your estate so that if you have children, you can make alternative bequests to those who do not want to be involved with the family business. At the same time, you can leave the business to the children who do.
- Guarantee that the business continues in an orderly manner after your death.
- Create a buy-sell agreement for family and nonfamily members who may own stock in your business.

As you can see, ensuring that your business lives on is a complicated issue that engenders many concerns, and care must be taken to make certain that all issues will receive open and honest discussion.

With the right estate planning team and the right succession plan in place, you can go against the statistics to maintain your company's success and guarantee your family's ownership for future generations. ■

EXPERIENCE THE JOY OF ONE-STOP SHOPPING.

Ah, the joy of finding all that you need in one place.

EDIC and its subsidiaries, EDIA and EDFS, save dentists time and money by offering all the insurance products and financial services they need all in one place. From malpractice insurance to retirement and estate planning, from office package to home and auto insurance, it's all here.

Moreover, EDIC insureds enjoy:

- Multiproduct discounts
- Knowledgeable, responsive customer service
- The convenience of one phone call for insurance service
- Products custom tailored to dentists' needs, without costly extras

Discover the joy of one-stop shopping for yourself.
Call EDIC for a free no obligation quote or visit our website www.edic.com for more information.

edic® EASTERN DENTISTS INSURANCE COMPANY
A Dental Society Risk Retention Group

EDIA® EASTERN DENTAL INSURANCE AGENCY

EDFS® EASTERN DENTAL FINANCIAL SERVICES

EDIC. Protecting dentists' future, enabling dentists' dreams.

EDIC is your complete insurance and financial planning resource.

- **Professional Liability Insurance**
- **Office Insurance**
- **Personal Insurance**
- **Financial Services**

Call us today at 1-800-898-3342
Visit us at www.edic.com.

ENDORSED BY MASSACHUSETTS DENTAL SOCIETY

ENDORSED BY RHODE ISLAND DENTAL ASSOCIATION

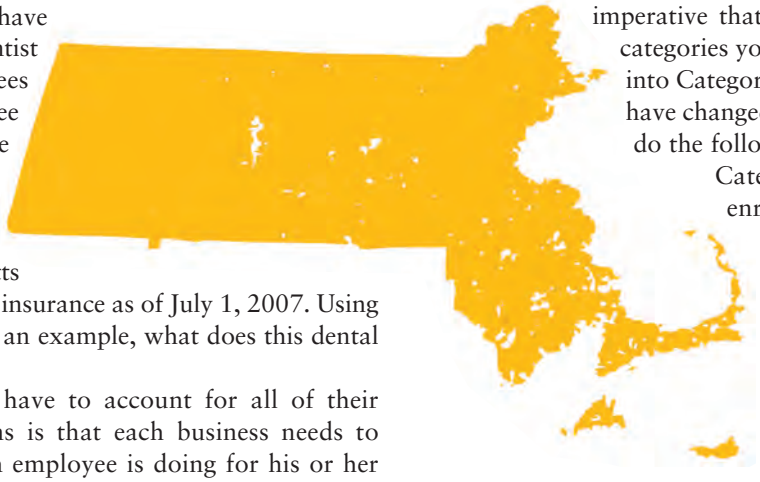
Eastern Dentists Insurance Company
200 Friberg Parkway, Suite 2002
Westborough, MA 01581
A dental society risk retention group.
The company By Dentists, For Dentists®

GEORGE GONSER, MBA
Mr. Gonser is the managing director of MDSIS.

HEALTH CARE REFORM— IT'S ALL ABOUT ACCOUNTABILITY

I WAS SPEAKING TO MEMBERS OF A DENTAL OFFICE RECENTLY, AND they told me that they have three employees who declined to take the office's health insurance because it was "too expensive" and they have 10 employees who are ineligible because they work less than the 35 hours required for eligibility in their office. The dentist asked me: "I don't have to concern myself in terms of Health Care Reform with these 13 employees, do I?"

In the past, I would have provided counsel to the dentist that since the 10 employees were ineligible and the three employees didn't want the insurance, the office would be okay. However, with the Massachusetts Health Care Reform Law, all Massachusetts residents need to have health insurance as of July 1, 2007. Using the above-mentioned case as an example, what does this dental office need to do to comply?



Simply put, businesses have to account for all of their employees. What this means is that each business needs to know, in writing, what each employee is doing for his or her own health insurance. The reason for the Health Care Reform mandate is to have all residents enrolled in a health insurance plan. Previously, people who were uninsured knew that they had a safety net: the uninsured pool, which would cover them if they needed care. Therefore, many people, an estimated 380,000 Massachusetts residents, decided not to get insurance. In the event the uninsured got sick or injured, they went to the hospitals, which are mandated to provide care to *all* people, and this care would be covered under the state's uncompensated care pool.

So, in effect, those with health insurance, carriers, and hospitals have been funding the care of these uninsured people. The cost of care at hospitals is very expensive. If an uninsured person went to the hospital with a sore throat or a headache, the cost to treat this condition was far more expensive than treatment at a doctor's office or clinic.

So Health Care Reform is here. What must a dental office do? First off, take an accounting of all of your employees. You will have four categories:

Category 1—Eligible insured. Meet office eligibility requirement and are enrolled in office group health insurance plan.

Category 2—Eligible spousal waiver. Meet office eligibility requirement but waive off the plan because they are covered by their spouse's plan.

Category 3—Eligible not insured. Meet office eligibility requirement but choose not to get office group health insurance plan for a variety of reasons. This group is considered uninsured.

Category 4—Ineligible. Do not qualify under the office eligibility requirement; either get insurance on their own, are covered by their spouse's plan, or are uninsured.

Regardless of the size of your business, it is imperative that you identify which of the four categories your employees fall into. If they fall into Categories 3 or 4, be aware that the rules have changed. The employee/dental office can do the following, based on the category:

Category 3 employees can either enroll in the group health plan offered through the office and subsidized by the office or get insurance through the insurance connector offered by agents such as MDS Insurance Services, Inc. (MDSIS). They will be required to utilize the Section 125 Plan to help pay for the insurance. Note that if enrolled under the dental office's health insurance plan, the employer, based on the terms set forth by the business, may subsidize some of the cost. If the employees obtain insurance through the connector, they must pay the entire premium themselves.

Category 4, uninsured employees, can get insurance directly through an insurance agent or the connector that fits their individual needs. They will not be eligible for subsidized insurance through the business, but depending on their income level, they may be able to receive subsidized insurance premiums through the connector or, if not eligible for subsidized insurance, can enroll in an individual connector insurance product offered by agents such as MDSIS.

As you can see by the information outlined above, you must be precise in the management of your health insurance benefits. It means that you have to account for all of your employees, from those who work one hour to those who work 50 hours a week. To do so will require a small investment in time and management, but the payoff is that you will document your office structure. Failure to do so can result in fines.

With the Health Care Reform Law, it is all about accountability. My recommendation is to get on it immediately. If you need help, contact MDSIS at (800) 821-6033. ■

TECHNOLOGY TODAY

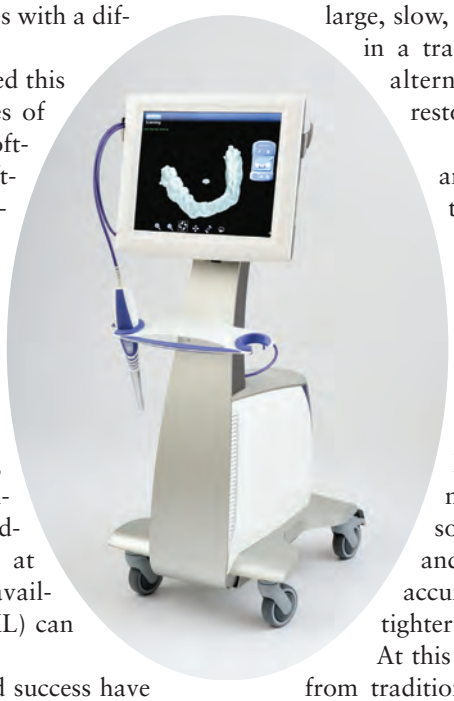
PAUL FEUERSTEIN, DMD

Dr. Feuerstein is technology editor of Dental Economics *and a general practitioner in North Billerica. He can be contacted by emailing* drpaul@toothfairy.com *or by visiting* www.computersindentistry.com.

A RESTORATION REVOLUTION

The American Revolution officially began in the town of Lexington, MA, in 1775. A dental revolution is now occurring in the same town, where Brontes Technologies has quietly been working for more than three years on a digital scanner—resembling an intraoral camera—which will soon replace impression trays and impression materials. Thoughts of this technology conjure up visions of CEREC, which has been around for 20 years, but this revolution comes with a difference in both technology and workflow.

CEREC, which was completely redesigned this year, uses a camera that takes static pictures of teeth; these pictures are reconstructed by software to make 3-D virtual models. The software then designs a restoration on the computer screen and sends that image to a small milling machine in the office. The latest software has taken away a lot of the confusing design tools and completes the restoration in minutes. This allows the practitioner to fabricate a finished restoration at the same visit the tooth has been prepared, eliminating temporaries and a second visit. Currently, the restorations are limited to single units, although multiple units can be made in a quadrant at the same time. Sirona has hinted at three-unit bridges as larger blocks become available, since the new milling chamber (MC XL) can handle these.



CEREC's 20 years of clinical studies and success have proven that the process does work, provided the practitioner follows good preparation designs and specific technical rules. This process, however, is not for every restoration. Although the materials are stronger than stacked porcelain or pressed ceramics, they may not be durable enough for the requirements of some practitioners. Nevertheless, according to Sirona, the 10-year success rate for inlays averages between 93 percent and 95.5 percent, and over seven years, the rate is 97 percent for premolars and 94.4 percent for molar full crowns. Still, despite the ease of use and single-visit restorations, many practitioners are looking for another high-tech alternative.

A few new companies have taken the front end of the CEREC idea and found a method of acquiring a digital impression that will allow traditional lab work to fabricate crowns and bridges. Brontes Technologies and New Jersey-based Cadent are the first to explore this idea in the dental world. These companies use an intraoral "wand" that creates a 3-D image similar to that of CEREC. The difference is that an actual model can be fabricated from these scans and then sent to your favorite dental lab. However, this oversimplification deserves a bit of clarification.

The main distinction from CEREC is that these systems create a physical model and use dental laboratories to fabricate the restorations. Some restorations can be constructed traditionally while others can use CAD/CAM machines, which are quite large, slow, and costly and are not designed to be placed in a traditional dental office, and thus are not an alternative to the one-visit, in-office CEREC restorations.

Brontes has spent its energies on perfecting and simplifying the digital impression/acquisition process so that digital quadrants and full arches can become a reality. The digital file can be sent to machines that can fabricate actual models that dentists and labs are quite familiar with. These "model-making machines" are actually 3-D printers that work similarly in concept to a laser printer—instead of black toner, plastic powder or liquid is layered and fused together by lightning-fast, computer-controlled lasers. The software can actually mark margins, ditch dies, and construct sectioned models that fit together accurately, more like a jigsaw puzzle and surely tighter than die cuts made with a saw blade.

At this point, a dental lab can use methods ranging from traditional waxups to CAD/CAM copings such as Lava, Procera, Everest, Cercon, and the like. These copings can be milled out of blocks of ceramic or titanium, and since they are presintered or precast, they are stronger than the traditional copings that practitioners have been using. Also, since the model is digital and the fabrication is digital, the castings should be highly accurate. That is a bold statement, but any laboratory technician will report that the quality of the traditional, day-to-day impressions received contain many of questionable accuracy—the digital impressions are simply correct. The ultimate will be going directly from the digital scan to the CAD/CAM coping with no model in between to be scanned.

Cadent has already begun selling its product this year and Brontes is in final testing. Brontes, which was founded by a couple of mechanical engineers from the Massachusetts Institute of Technology who realized they could use a stereo video camera to create 3-D images, was acquired by 3M ESPE in October. The acquisition positions the small Lexington start-up as a major force in dentistry. ■

The 6th Annual MDS Foundation

Golf Tournament & Spa Day

Despite the inclement weather, the MDS Foundation's 6th Annual Golf Tournament at Willowbend Country Club in Mashpee was the most successful fundraiser yet, raising nearly $53,000 for the Foundation. This year's outing also included the first-ever Spa Day, where 12 participants engaged in activities such as massage, Pilates, and a golf or personal training lesson. Initiated by the Women's Leadership Task Force, the Spa Day was an opportunity for women dentists and nongolfers to become more involved with the Society's fundraising programs.

Golfers had several opportunities to win prizes during the tournament. James McDonough, son of Jim McDonough, DDS, of Wollaston, sunk a 20-foot putt to win the Putting Contest, sponsored by the Middlesex District Dental Society. Trans-Atlantic Motors in Hyannis sponsored the Hole-in-One Contest featuring a chance to win a 2007 Volvo S80. Janice Spada, DMD, won the Longest Drive Contest, while Ted Lee, DMD, Dennis O'Toole of Carlin, Charron & Rosen, George Gonser of MDS Insurance Services, and Nick Mozzicato of Solmetex won the Closest to the Pin Contests.

After the tournament, a live and silent auction, which began online a month before the event, was led by Richard LoGuercio, DDS, chair of the MDS Foundation Board, and Andrea Richman, DMD, MDS president. Attendees were able to bid on Red Sox tickets, rounds of golf at exclusive clubs, Boston Bruins luxury box seats, hotel stays, sports memorabilia, and more.

The tournament would not have been a success without the help of the MDS Foundation Golf Committee and its chair, Michael Seidman, DDS. A special thank-you to the event's major sponsors: Gentle Dental Associates and MDS Insurance Services. In addition, the following District Dental Societies generously contributed to the Tournament:

Berkshire	$200	South Shore	$1,000
Cape Cod	$1,000	Southeastern	$2,500
Merrimack Valley	$1,000	Valley	$1,000
Metropolitan	$1,000	Wachusett	$1,000
Middlesex	$1,500	Worcester	$1,000
North Metropolitan	$500		

All proceeds benefit the MDS Foundation, which is dedicated to improving access to dental care for the underserved and enhancing educational opportunities for those who wish to pursue a dental career. The Foundation most recently launched the Mobile Access to Care (MAC) Van program, which provides free dental treatment to needy children under the age of 18 throughout Massachusetts and a referral system that helps these children find a "dental home" for any treatment they need after the MAC Van leaves the area.

Tournament Winners

Best Ball of Four: 1st Place Gross
Michael Seidman, DDS, Daniel Varallo, DMD, Michael Anastasi, and Fred Jewett

Best Ball of Four: 2nd Place Gross
John Caravolas, DDS, Efrain Ruiz, DMD, Donald Burgoyne, DDS, and Wayne Fick

Best Ball of Four: 1st Place Net
Greg Clark, Andrew Lavigne, Gary Cowan, and Brian Macaluso, of Boston Park Plaza Hotel

Best Ball of Four: 2nd Place Net
Martin Katz, DMD, John Lasker Jr., DMD, Francis Shea, DMD, and James Showstack, DDS

Best Ball of Four: 3rd Place Net
Jeffrey Slone, DDS, David Wolf, DDS, Chris Choate, and George Gonser of MDS Insurance Services

Scramble: 1st Place
James Masterson of Align Tech, Lou Donato, Christian Villaroel, and Tony Crovo of Nobel Biocare

Save the Date!

MDS Foundation 4th Annual Wine Tasting
Friday, October 26, 2007 • The Lighthouse of the Seaport Hotel
Register at **www.mdsfoundation.org/events**

143rd Annual Session

The 143rd Massachusetts Dental Society House of Delegates Annual Session was held on May 11, 2007, at the Westin Waterfront in Boston, right next door to the Boston Convention and Exhibition Center, new home of Yankee Dental Congress. Andrea Richman, DMD, was inducted as MDS president, succeeding Alan S. Gold, DDS.

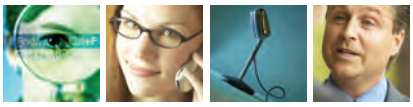
Other officers elected and taking the oath of office for the 2007–2008 term were: Milton A. Glicksman, DMD, president-elect; David S. Samuels, DMD, vice president; Charles L. Silvius, DDS, secretary; Anthony N. Giamberardino, DMD, assistant secretary; Charles A. Gagne, DDS, treasurer; and David A. Schmid, DDS, assistant treasurer. Additionally, Thomas P. Torrisi, DDS, was inducted as Speaker of the House, replacing James B. Nesti, DMD, who stepped down from that position. Two new trustees were also inducted: Lisa Vouras, DMD, was elected trustee of the East Middlesex District, replacing Dr. Giamberardino; and Howard M. Zolot, DMD, was elected trustee of the Merrimack Valley District, replacing Dr. Samuels. There were also four new Guest Board Members elected: Kelly M. Bouchard, DMD; Sandra J. Crowley-Le, DMD; Mary Jane Hanlon-Rogers, DMD; and Justine Tompkins, DMD.

MDS Officers for 2007–2008. Back row (left to right): Dr. Anthony Giamberardino, Dr. Robert Boose (MDS executive director), Dr. Charles Gagne, Dr. Charles Silvius, Dr. Thomas Torrisi. Front row (left to right): Dr. Alan Gold, Dr. Milton Glicksman, Dr. Andrea Richman, Dr. David Samuels.

At the House session, the delegates approved eight resolutions, including one encouraging all MDS members to join the MassHealth dental program. Jetta Bernier, executive director of Massachusetts Citizens for Children, received the 2006 Allard Award, which the Council on Access, Prevention, and Interprofessional Relations (CAPIR) bestows on an individual who heightens awareness of abuse and neglect, as well as issues relating to domestic violence.

Fifty-Year Member Practitioners

Hersch C. Altman, DMD
Robert E. Baker, DMD
Herbert Beeders, DMD
Eugene A. Beliveau, DDS
Robert L. Berman, DDS
Charles D. Broe Jr., DDS
Barry M. Brooks, DDS
Daniel J. Burgess, DMD
Richard E. Caliri, DDS
Joseph V. Cognata, DMD
Neil Cohen, DDS
Stanley R. Cohen, DMD
Adrian J. Costanza, DDS
Joseph A. Croteau, DDS
Richard M. Cushner, DDS
Alan K. DerKazarian, DMD
Norman H. Diamond, DMD
Ronald R. Diodati, DMD
Harold M. Faigel, DDS
Eugene F. Fredey, DMD
Joseph P. Garvey, DDS
Joseph J. Giovino, DDS
Charles J. Glovsky, DMD
Charles J. Grady Jr., DMD
Thomas A. Grady, DMD
Joseph M. Haggerty, DMD
Rene J.N. Hamel, DDS
Melvyn H. Harris, DMD
Lemuel W. Higgins, DDS
Donald G. Hodder, DDS
Carl E. Hunter, DMD
Joseph F. Kenneally Jr., DMD
Peter N. Kondon, DMD
Philip E. Koski, DDS
Earle J. Legge, DMD
Stuart M. Lehman, DMD
Roderick W. Lewin, DMD
Henry V. Listenik, DDS
Edward J. Lyons Jr., DMD
Dwight R. Magovern, DMD
Agisilaos P. Manickas, DMD
Maurice H. Martel, DDS
Leonard F. Mirabele, DDS
John E. Modestow, DDS
Robert B. O'Donnell, DMD
Walter J. Powers Jr., DMD
John N. Reichheld, DMD
Louis A. Rigali, DDS
Robert F. Rozene, DMD
Robert M. Sainato, DMD
Robert M. Segal, DMD
Donald J. Senna, DDS
Philip B. Sibilia, DDS
Edward Smookler, DMD
John E. Spillane, DDS
John F. Sullivan, DMD
Joseph J. Swirbalus, DMD
Paul R. Szlyk, DMD
James P. Toyias, DMD
Silvia E. Valdmanis, DMD
Irving E. Weinshel, DMD
Paul Wylan, DDS
S. Jerome Zackin, DMD



VIEWPOINT

WILLIAM R. DENNIS, DDS
Dr. Dennis is an MDS Trustee and maintains a general practice in Shrewsbury.

HOW TO MAKE MASSHEALTH WORK FOR YOU

"Social consciousness, moral obligation, and taking charge will lead to doing what is right. This is character. This is leadership."
—H. Norman Schwarzkopf, General, U.S. Army (Retired)

LIKE THE SUN RISING, A SOLUTION TO THE ACCESS-TO-CARE problem in Massachusetts is on the horizon. The state legislature and the media are starting to see the issue more clearly than ever. Doral Dental USA has been hired not just to serve as the third-party administrator for MassHealth in the state, but also to manage some of the problems and issues that have kept providers from joining MassHealth. The Commonwealth has increased the fees for procedures performed on children, and a coalition of concerned parties, including the Massachusetts Dental Society, is advocating for increased fees for adult care. Most importantly, regulations have been eased to allow for providers to customize a program to fit MassHealth into their practice. We must not allow this opportunity to pass without action.

Launched earlier this year, the MDS Foundation Mobile Access to Care (MAC) Van has been doing an admirable job of raising awareness of the access issue and helping hundreds of children who otherwise would not have received treatment, but it is not the sole solution to the access problem. Related volunteer efforts provide some care to needy children as well, but these really are just making a dent. Doral is also not the solution to the problem, but enrolling in Doral is the start to helping us all find a solution. Doral has shown me, as an existing participant, that it has a remarkable understanding of the access-to-care issue as well as the knowledge and ability to deal with the logistics, paperwork, and patient-related issues that in the past were the demons that chased providers away.

The solution to the access-to-care problem lies with us, the dentists. We, as health care professionals, need to take a long, hard look inward. We have both a moral obligation and a social responsibility. Pause and think about it. The access problem is *our* problem. We need to act. I don't think it is a question of whether or not to be a MassHealth provider. The solution to the problem is here if we all register as providers.

The limitations of the MassHealth program of yesterday are what may be keeping some members from signing up as providers today. But customizing participation to meet practice goals and control financial impact is now possible with the new regulations and with Doral's help. Specifically, you can take as many or as few patients as you'd like. This is the key to the solution of the access problem. By understanding this, we all can be comfortable signing up and staying in the program for the long run.

But if you have refrained from becoming a provider until now, it is crucial that you avoid those demons from years past. Understanding how to get started treating MassHealth patients without getting swamped in a quagmire of phone calls and red tape is essential. For starters, let Doral come into your office to assist you with the paperwork, walk you through the system, teach your staff how to use the Web site, and explain to them the provider manual. Let Doral set up a provider profile for you.

When other providers were dropping out years ago, I customized my approach to the MassHealth program. Now, years later, I'm finding that what I have been doing is actually "the new MassHealth." Consider these suggestions when developing your initial plan to join MassHealth:

- Determine how many patients you are willing to see. Once you have signed up, you have the option to open and close your panel at any time. It is very easy and almost instantaneous to open and close your panel. You can also change the number of patients you are willing to treat at any time. It is all up to you.
- Set your profile on the Doral Web site to cover your zip code and maybe one or two adjacent zip codes.
- Don't start seeing patients without reading the manual from Doral and understanding coverage. Contact Doral if you have any questions or if something isn't clear.
- The prior authorization paperwork is still a headache, but Doral is working on it. Avoid it whenever possible.
- See triaged patients, at least to start, to help you get your feet wet. Triaged patients can come from the MAC Van, the senior citizen coordinators in your community, community-based programs, the Special Olympics Special Smiles program, special needs resource people, and Doral coordinators. Doing this helps you avoid the cold phone calls that come from an open panel while you learn to navigate the system.
- Adopt a "take-five program," where you agree to see five children and/or families to start. When those five kids or families are treated and moved to your recall system, then take five more and keep going until you want to stop. General dentists can treat five kids and get them on the recall system in the same amount of time as treating one adult who needs some kind of prosthetic care.
- Specialists can customize their programs by signing up with a closed panel and then sending a letter to their referring general dentists, informing them that they are willing to be a provider for triaged MassHealth patients from them.

Customization, triage, and Doral are all key to your successfully and seamlessly incorporating MassHealth into your practice. A little success of this kind in all our practices will help solve the access-to-care problem. And little by little, we'll start to make that dent a little bit bigger. ■

Massachusetts Dental Society — At Your Service

EBI Consulting

EBI Consulting has been the MDS's recommended carrier for dental office waste pick-up and disposal since 2002. The endorsement from the MDS came after a thorough review by the MDS and an extensive regulatory review process conducted by an independent company. The MDS program with EBI allows members, with just one call, to properly dispose of fixer, developer, lead aprons, fluorescent bulbs, scrap amalgam, used amalgam separator filters/cartridges, as well as hydraulic fluids and other materials generated during office renovations/relocations. Members are not required to sign long-term contracts and special pricing has been negotiated by the MDS on behalf of members. For information or to schedule a service call, contact EBI at **(800) 786-2346**, ext. 1835.

SolmeteX™

Founded in 1994, SolmeteX is dedicated to the development and manufacture of specialized technology for the safe and economic removal of heavy metal contaminants, including amalgam, from wastewater. From its Northborough, MA, headquarters, SolmeteX provides leading-edge, advanced products, systems, and expert support to a wide range of medical and dental offices in the United States and abroad. SolmeteX's Hg5 and Hg10 units are specifically designed for dental offices to remove amalgam waste particles from dental office wastewater. To learn more about the Hg units, contact SolmeteX at **(800) 216-5505** or **solmetex.com**.

Lands' End Business Outfitters

Lands' End clothing is great for work because it's comfortable, stylish, and made to last. And as an ADA/MDS member, you will receive a 10 percent discount on your apparel order and your dental practice logo application fee. In addition, all orders are guaranteed, even after your logo has been applied! Giving your dental office a consistent, professional look has never been easier to do, thanks to Lands' End® Business Outfitters. Visit **ada.landsend.com** or call **(800) 990-5407** today to place an order or request a catalog.

EDFS Eastern Dental Financial Services

Eastern Dental Financial Services is a specialty practice designed and built to provide financial planning services to MDS members. EDFS offers independent, objective financial advice based on a consultative approach. Advisors will earn your trust the same way you earn the trust of your patients every day by providing the best objective advice possible based on experience and expertise. Trust is the cornerstone of each client relationship; you can work with an advisor to better manage your financial lives. For more information, contact EDFS at **edic.com** or at **(800) 898-3342**.

Tel-A-Patient — The Words That Work

Are you ready to educate and motivate patients and build your practice? Tel-A-Patient Message On-Hold, the #1 on-hold message system in dentistry, is endorsed by the MDS and the ADA Member Advantage program. With targeted, customized messages, you can transform on-hold music or dead silence into a positive, entertaining, and informative experience for your patients. Give your patients a compelling reason to stay on the line and learn more about your care and services—call Tel-A-Patient today at **(800) 553-7373** or visit **telapatient.com** for more details.

Mall — Massachusetts Dental Society

Earn cash back rebates on everyday online purchases made at the MDS Mall. Shop at more than 400 online retailers including Staples, Barnes & Noble, Macys, Brooks Brothers, Orbitz, and DisneyShopping.com. The MDS Mall is a free service to members, their staff, and families. Plus, cash rewards on purchases are sent automatically to you on a quarterly basis; it's that simple! Take advantage of special offers, money-saving discounts such as free shipping, and start earning cash back today at **http://shop.mds.mallnetworks.com**.

For more information about MDS Business Services, visit ***massdental.org/atyourservice*** or call **(800) 342-8747**.

Scleroderma and Dentistry: Every Dentist Is a Scleroderma Specialist

DAVID M. LEADER, DMD
Dr. Leader is a member of the Medical Advisory Board of the National Scleroderma Foundation's New England Chapter and an assistant clinical professor of general dentistry at Tufts University School of Dental Medicine. He maintains a private practice in Malden.

Abstract

Scleroderma is an autoimmune, rheumatoid factor-positive disease that may be localized or systemic, affecting the skin, lungs, kidneys, and cardiovascular system. Dental effects include xerostomia, microstomia, idiopathic resorption of tooth and bone, oral effects of medications, erosion and decay caused by gastroesophageal reflux disease (GERD), and poor oral hygiene due to physical and emotional effects of the disease. All dentists have the knowledge and ability to treat those suffering with scleroderma.

Background

As a speaker for the National Scleroderma Foundation, I meet and correspond with many of its members, people who live and struggle with scleroderma daily. Some relate a common story. They suffer with an unknown malady for months or years. Finally, a physician makes the diagnosis of scleroderma. At the patient's next dental appointment, he or she alerts the dentist to this new diagnosis. Some dentists say that they do not know how to treat patients who have scleroderma. The dentist instructs the patient to find another dentist who specializes in the care of patients with such diseases. Unfortunately, patients may have difficulty finding such a dentist.

The real tragedy of this situation is that all of these patients' dentists are oral health specialists competent to care for the dental needs of patients with scleroderma. By turning patients away, these dentists are creating barriers to care that need not exist.

Epidemiology

Scleroderma is an autoimmune disease with a high positive rheumatoid factor. Other rheumatoid diseases include lupus erythematosus and rheumatoid arthritis. Epidemiologists estimate that scleroderma affects about 300,000 Americans. According to National Scleroderma Foundation statistics, 80,000 to 100,000 have systemic sclerosis, while 200,000 to 220,000 have localized disease. Scleroderma is more common among women, African Americans, and the 25- to 55-year-old age group.

Localized scleroderma is more common and less severe. The survival rate for those with the localized disease is much better than for those with systemic sclerosis. Localized scleroderma includes CREST syndrome, morphea, and linear scleroderma. CREST is an acronym for the clinical components of the syndrome: Calcinosis (dermal calcium deposits), Raynaud's phenomenon (an arteriole contraction condition that causes peripheral blood supply to diminish with exposure to cold), Esophageal dysmotility (loss of pliability in the esophagus), Sclerodactyly (hardening and tightening of the skin of the fingers and toes), and Telangiectasia (collection of dilated blood vessels).

Raynaud's phenomenon affects 95 percent of those with systemic sclerosis.[1] Conversely, only a small percentage of those with Raynaud's phenomenon have scleroderma. Characteristically, fingers and toes will become painful and change color upon exposure to cold. There may be a biphasic (normal to white and back to normal) or triphasic (normal to white to blue and back to normal) color change. The triphasic change is characteristic of more serious disease.[2] Daniel Furst, MD, a rheumatologist and member of the National Scleroderma Foundation's Medical Advisory Board, reports that Raynaud's phenomenon affects the lungs by tightening blood vessels. The effect of Raynaud's phenomenon on the lungs can be serious and irreversible. Patients with Raynaud's phenomenon should be evaluated by their physicians and treated early. If patients delay treatment until their respiratory symptoms start to become noticeable, the opportunity for successful management is lost.[3]

Gastrointestinal effects of scleroderma are very common, affecting 75 percent to 90 percent of those with systemic sclerosis.[4] Esophageal dysmotility is likely to cause GERD. Dentists may be the first to diagnose GERD in their patients, particularly if the dentition exhibits significant erosion. If suspecting GERD, question the patient about his or her current gastrointestinal condition. When evaluating a patient with erosion, keep the following description of the symptoms of GERD in mind.

The acid, while tracking back into the food pipe, can sometimes irritate vocal cords and go into the lungs, causing hoarse voice and symptoms of asthma (wheezing and shortness of breath). Some clinical studies have even suggested that the acid going into the lungs may cause lung inflammation in scleroderma. In addition, weakening of the esophageal muscles themselves results in less efficient "milking" of the food down the esophagus, and at times, food can even get temporarily stuck in the esophagus and patients may need to vomit to clear the esophagus. Reflux can also cause symptoms of choking, chest pain, difficulty swallowing, and acid taste in the mouth.[5]

In scleroderma, telangiectasias, which are collections of enlarged superficial blood vessels, characteristically occur on the face, upper trunk, and hands. Telangiectasias may occur intraorally and may cause bleeding.

Morphea is a localized patch of scleroderma that may not spread or foreshadow a more generalized disease.[6] Morphea sometimes goes undiagnosed and often does not require treatment. Linear scleroderma appears like a deepening scar or furrow that may appear to be a knife wound. There is a special name for linear scleroderma of the forehead, coupe de sabre (literally "strike of the sword"). Linear scleroderma may become quite disfiguring. Fortunately, microsurgical techniques are available to return much of the patient's healthy appearance.[7]

Systemic sclerosis affects skin, lungs, the cardiovascular system, the genitourinary system, and the gastroesophageal tract. While scleroderma's effect on the skin is pathognomonic, it is scleroderma's effect on the lungs and the kidneys that usually proves fatal. Patients with systemic sclerosis live in constant discomfort due to the many effects of their disease.

Dental Effects of Scleroderma

Orofacial effects of scleroderma include xerostomia, microstomia, myofacial dysfunction, idiopathic resorption of tooth and bone, oral effects of medications, loss of self-cleansing ability of the oral musculature, oral erosion and decay due to GERD, and impaired oral hygiene due to depression and loss of manual dexterity.

Xerostomia

About 70 percent of patients with scleroderma have xerostomia.[8] Drying may be due to patients' inability to close their lips together, causing constant mouth breathing. There may be concomitant Sjögren's syndrome (drying of all exocrine glands, primarily lacrimal and salivary glands) often seen with rheumatoid factor diseases. Additionally, more than 400 common medications cause xerostomia as a side effect, including many medications taken to treat scleroderma and its symptoms.

Xerostomia allows the patient's level of oral flora to rise. Patients with xerostomia have an increased risk of tooth decay and oral infections, especially candidiasis. Denture wearers are more prone to irritation and denture stomatitis (due to a chronic erythematous form of candidiasis) when they have xerostomia. When candidiasis results from xerostomia, treatment with nystatin oral suspension may be preferable to nystatin pastilles or clotrimazole troches.

The standard histological test for xerostomia is a minor salivary gland biopsy of the labial mucosa. An easy diagnostic test that may be performed in a dental office is to instruct the patient to chew on a small piece of paraffin for five minutes. Measure the amount of saliva the patient expectorates in that time. Less than 5 ml of saliva in five minutes of chewing is diagnostic of xerostomia.

Treatment of xerostomia is symptomatic. The patient may stimulate salivary function by sucking on sugar-free hard candies or chewing sugar-free gum. Increasing water intake is also very useful. Prescribe soothing mouthrinses and toothpastes, such as Biotene products. Artificial saliva products such as Salivart aerosol and Oasis mouthwash and spray are isotonic solutions with moisturizers and can be very soothing. Artificial saliva does more than just wet the mucosa; it lubricates the tissues and helps keep them moist. Prescribe paste adhesives for denture wearers to improve retention.

In some cases, patients with xerostomia benefit from taking pilocarpine, 5 to 10 mg, three times a day. Pilocarpine can help those who still have some functional salivary gland tissue. Pilocarpine's major side effect is sweating, and the dentist must be aware of possible drug interactions. Prescribe pilocarpine with care and be sure to follow up. Another medication, cevimeline, is well tolerated and effective. Prescribe 30 mg of cevimeline three times a day. Expect maintainable results after two weeks of treatment with either drug, although it may take up to 12 weeks to reach the full effect.

Microstomia

Microstomia is a hallmark of systemic sclerosis. Thickening and tightening of the skin around the mouth makes the orifice smaller. The patient has difficulty opening and eating. Dental care becomes more difficult as microstomia increases.

Physical therapy is a very effective treatment for microstomia. One exercise is to cross the wrists at chest height, hook the thumbs inside lubricated lips, and work the lips with the thumbs for several minutes. Another classic exercise is to stretch the muscles of mastication using

tongue blades. Make a stack of tongue blades that supports the incisors when the mouth is open as far as possible. Then, tie the blades together with a rubber band. Now, slide another blade or two into the stack. The increase in the girth of the stack will hold the incisors a millimeter or two farther apart. Leave the thicker stack in place for several minutes. In a few days, the patient will find that he or she has effectively increased the diameter of his or her orifice—and hence comfort level.

Dentists should use every technique available to increase their patients' comfort during treatment. Use a rubber dam when possible. Use small-head handpieces and pedo-length burs. Shorten regular-length burs. Use the smallest-size impression trays, and cut down the sides of the impression trays when necessary.

Myofacial Dysfunction

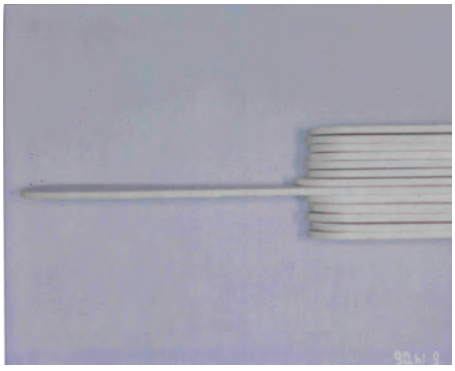
Tightening of the facial skin, fascias, and musculature may cause myofacial pain syndrome or temporomandibular joint dysfunction. In addition to the usual treatment (restoring occlusion with prosthetics and bite planes, medication, rest, and biofeedback), physical therapy is helpful to improve skin resilience and joint mobility.

Idiopathic Resorption

Idiopathic tooth resorption is an uncommon condition that causes tooth loss by autoimmune resorption of tooth substance internally or externally. There are not many studies relating idiopathic resorption to scleroderma. However, when large groups of scleroderma patients gather, there are usually a few with a history of this problem. Scleroderma patients should have more frequent radiographic surveys to look for effects of idiopathic resorption and xerostomia.

Tooth resorption should be treated early. The condition may progress rapidly and may affect one tooth or many. Resorption may continue after operative or endodontic treatment. Some dentists will not provide major treatments to teeth in this condition.

Many scleroderma patients will exhibit resorption of the angle of the mandible. This does not appear to cause symptoms. Its etiopathogenesis is not understood, but may be due to increased pressure from fibrosis.



A stack of tongue blades secured with a rubber band can be a helpful tool in treating patients exhibiting microstomia.

Inserting a stack of tongue blades for several minutes a day as part of physical therapy will help increase the diameter of the patient's mouth.

Oral Effects of Medications

Physicians prescribe several medications to treat the symptoms of scleroderma. Many of these medications have oral health effects. Because treatment regimens can change frequently, ask your patients to update their medication lists regularly. Dentists should be aware of patients' medications and their oral health effects. Help the patient by prescribing symptomatic relief and by advising the medical doctor of any problems that may affect the patient's quality of life or health.

For example, physicians may prescribe cyclosporine or D-penicillamine to treat skin fibrosis. Stomatitis is a common side effect. The dentist should treat this symptom. If stomatitis seems to be causing the patient to lose excessive weight, the patient should consult with his or her physician regarding the seriousness of this side effect.

Calcium channel blockers such as nifedipine (Procardia) and amlodipine (Norvasc) relax blood vessels and are a common treatment for Raynaud's phenomenon. Gingival hyperplasia may result from their use. This is an example of a side effect that is relatively easy to treat even though it can be a nuisance. Attempt to control hyperplasia with excellent home care and frequent professional prophylaxis. Perform a gingivectomy as necessary.

Patients may approach their dentist with concerns about change in taste sensation. Dysgeusia or taste change may result from xerostomia, denture wear, diet, and age-related changes. More than 200 medications cause dysgeusia. Penicillamine, enalapril (Vasotec), metronidazole (Flagyl), and clarithromycin (Biaxin) are common offenders. Medications may affect taste by damaging taste buds, interacting with taste buds, causing xerostomia, and being secreted in the patient's saliva.

GERD

Another common effect of scleroderma is GERD, which may cause enamel erosion and may increase the patient's rate of tooth decay. Often, dentists are the first to diagnose GERD. Confirm the diagnosis by asking the patient relevant history questions: Do you have frequent heartburn? Chest pain? Sinusitis? Hoarseness? Do you wake with a sore throat, but feel well otherwise? Do you wake with a sour taste? The combination of positive physical signs (dental disease) and affirmative answers to any of the above questions warrants referral to the patient's physician for confirmation and treatment. One side effect of GERD, Barrett's esophagitis, may lead to esophageal cancer. Treatment will prevent this life-threatening condition. Treatment for GERD is symptomatic and includes nutritional counseling and acid-reducing medication.[9]

Psychological Effects of Scleroderma

Scleroderma is a chronic illness that affects well-being and shortens the life span. The inexorable progression of the disease demoralizes patients. There are unique aspects of scleroderma that lower self-image. People with scleroderma speak of how their appearance in the mirror no longer matches their mental self-image. Tightening lips drawn over teeth do not approximate, robbing them of the ability to kiss, thus depriving them of the ability to show affection for their loved ones. Their face may become less pliable or flexible, even masklike or wooden, robbing them of their facial expressiveness.

Depression is a hallmark of scleroderma. In the face of depression, many patients will ignore their oral health until they reach a crisis. This lack of attentiveness thus causes a spiral of increasing poor oral health, self-image, and depression.[10]

Dental Treatment

In the Office

Often, people suffer with symptoms of scleroderma for years before they receive a diagnosis. Additionally, other diseases and conditions have signs and symptoms in common with scleroderma. All patients benefit from patience, understanding, and a thorough knowledge of their condition. Begin by taking a complete medical history. Allow time for discussion of the information on the history form, and review questions that require additional insight.

Be sensitive to the patients' comfort. Front desk staff may remind patients who have Raynaud's disease that dental offices tend to be cool, so these patients might want to bring gloves and a blanket. Dental offices could also have a throw or quilt available for temperature-sensitive patients.

Teach patients who have microstomia to use physical therapy to increase their maximum opening. Allow them time to do their exercises in the office immediately before their treatment. Use shorter burs—either pediatric-size burs—or shorten the shanks of longer burs. Use a mouth prop and a rubber dam. If premedicating with a muscle relaxant, be sure to obtain informed consent at an earlier time.

Physical therapy is helpful in treating a patient exhibiting microstomia. Have the patient cross the wrists at chest height, hook the thumbs inside lubricated lips, and work the lips with the thumbs for several minutes.

When treating patients with scleroderma, the most important tools you can use are sensitivity, patience, and ingenuity.

Impressions are more difficult to obtain when the patient has microstomia. Use the smallest tray that fits or a custom tray. Lubricate the sides of the tray.

Resilient denture bases may be important for some patients with microstomia. The resilient base allows the patient to squeeze the sides of the denture together during insertion. Many patients with microstomia respond so well to physical therapy that denture fabrication and wear may proceed normally.

Home Care

Excellent home care is essential for patients with scleroderma. Loss of dexterity and depression are factors that limit the patients' ability to care for themselves. Introduce patients to oral care products that are appropriate for their condition. While it is possible for dentists and hygienists to customize toothbrushes to aid patients who have lost dexterity due to arthritis or sclerodactyly, there are many prefabricated adaptive toothbrushes available. The Dex-T-Brush is a very inexpensive manual brush with a wide flat handle that is easy to grasp from various angles. The Benefit Plus is another inexpensive manual brush with a fat handle and bristles arranged to brush all surfaces of the teeth at once. Electric toothbrushes are another good recommendation for patients with limited grasping ability and loss of dexterity. The fat, round handles and automated motion will help many patients regain the ability to care for themselves.

Interdental cleaning by hand with floss may not be possible for many scleroderma patients. Floss forks are a common adaptation. Reach Access Flosser is a handle that holds preloaded floss bows at a convenient angle. However, the handles of the floss fork or Access Flosser may not be wide enough for scleroderma patients. These devices can be customized with anything from tray acrylic to duct tape to help patients who need a wider handle. Oral B and Water Pik manufacture power-flossing devices. The thicker handles and vibrating action of the Oral B Hummingbird or reciprocating action of the Water Pik Power Flosser are very good adaptations for scleroderma patients. Both are inexpensive and easy to use.

Prescribe fluoride as needed. Professional fluoride applications, prescription rinses and toothpaste, trays, and gels are all useful.

Conclusion

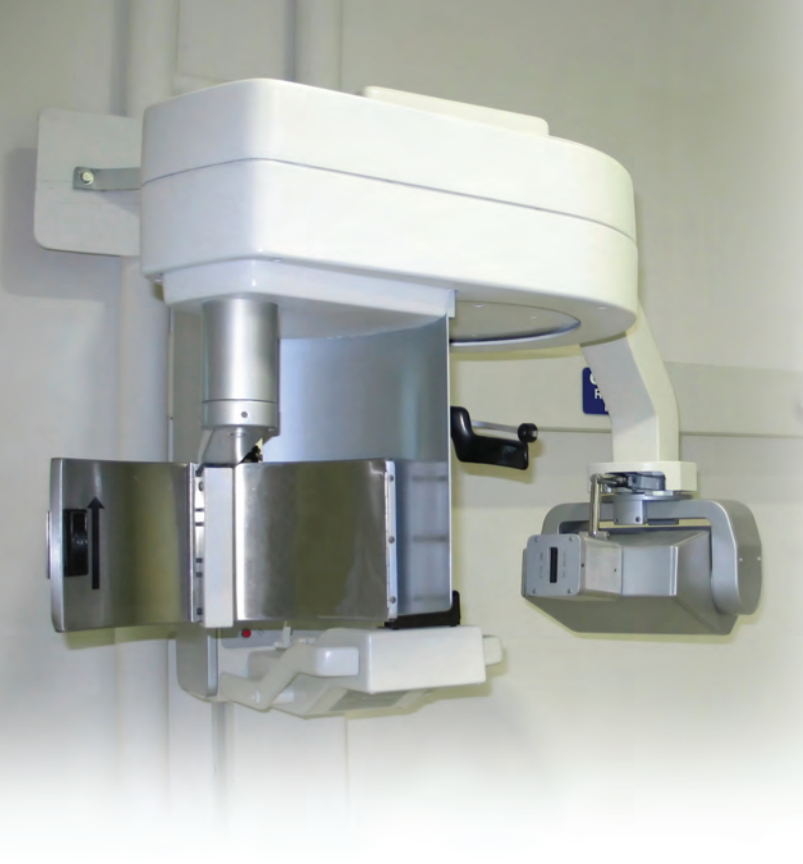
All dentists have adequate training to treat any patient who has scleroderma. Begin with a thorough health history and examination. Use all the tools available—physical therapy, mouth prop, rubber dam, and shorter burs. When treating patients with scleroderma, the most important tools you can use are sensitivity, patience, and ingenuity. ■

Acknowledgments

The author thanks Michael Kahn, DDS, head of oral pathology at Tufts University School of Dental Medicine, for assistance with editing, and Jeffrey Shmase, communications manager of the National Scleroderma Foundation, for assistance in researching this article.

References

1. Wallace D. Raynaud's phenomenon. National Scleroderma Foundation 2004.
2. Reilly A, Snyder B. Raynaud's phenomenon. Amer J Nurs 2005 Aug;105(8):56-65.
3. Furst D. Raynaud's phenomenon. Lecture delivered at the National Scleroderma Foundation Annual Conference; 2006 Jul 29.
4. Khanna D, Furst D. Digestive system (gut, gastro-intestinal) involvement in scleroderma. Scleroderma Voice 2004; 4:14-9.
5. Ibid.
6. Friedman A. Morphea. Scleroderma Voice 2001;3:21, 26.
7. Shulman R. Microsurgery can correct facial deformities. Scleroderma Foundation Newsline, Summer 2000.
8. Wood R, Lee P. Analysis of the oral manifestations of systemic sclerosis. Oral Surg Oral Med Oral Pathol 1988;65(2):172-7.
9. Ali DA, Brown RS, Rodriguez LO, Moody EL, Nasr MF. Dental erosion caused by silent gastroesophageal reflux disease. JADA 2002 Jun;133(6):734-7, 768-9.
10. Wood S. Losing face: the personal and social impact of scleroderma-related facial changes, part 1. Scleroderma Voice 2002;2:14-16,18.



Panoramic Radiographs: A Screening Tool for Calcified Carotid Atheromatous Plaque

ARUNA RAMESH, BDS, DMD, MS, DIP ABOMR
TARUNJEET PABLA, BDS, MS, DIP ABOMR
Dr. Ramesh is head and assistant professor and Dr. Pabla is assistant professor of oral and maxillofacial radiology in the department of general dentistry at Tufts University School of Dental Medicine.

Stroke is the third leading cause of death in the United States, according to a 2005 National Center for Health Statistics report.[1] Atherosclerotic plaque in the cervical carotid artery accounts for a major proportion of strokes and also leads to billions of dollars in direct and indirect costs annually.[2,3]

The carotid bifurcation area, which is a likely site for atherosclerotic plaque accumulation, is well within the field of view of a diagnostic panoramic radiograph. Panoramic radiographs are the most frequently used extraoral images in private dental practices.[4-6] It is only logical to use this widely available diagnostic tool to screen for calcifications in the cervical carotid arteries. If this oral and maxillofacial manifestation of a systemic disorder is identified during routine dental care and the patient is referred for appropriate follow-up and management, it would help reduce morbidity and bring significant savings in overall health care costs associated with atherosclerosis.

Case Report 1

A panoramic radiograph was obtained in a 60-year-old male as part of a routine dental screening. The panoramic radiograph shows an area of calcification inferior and posterior to the angle of the right mandible (see Figure 1). This area corresponds to the region of carotid artery bifurcation in the neck at the level of the third and fourth cervical vertebrae. The calcification represents atheromatous plaque along the walls of the artery. The patient was on medications for diabetes, hypertension, and hypercholesterolemia. Subsequently, a cone-beam CT scan was obtained for evaluation of implant sites. The CT images revealed additional areas of calcification intracranially in the internal carotid artery within the cavernous sinus (see Figures 2a and 2b). This patient was referred to his primary care physician for evaluation of cerebral circulation and resultant end-organ effects.

Case Report 2

A panoramic radiograph was obtained in an 86-year-old female as part of a routine dental screening. The panoramic image also showed areas of calcification inferior and posterior to the angle of the mandible, bilaterally (see Figure 3). The patient was on medications for hypertension and hypercholesterolemia. This patient was also referred to her primary care physician for further workup and management. ■

If this oral and maxillofacial manifestation of a systemic disorder is identified during routine dental care and the patient is referred for appropriate follow-up and management, it would help reduce morbidity and bring significant savings in overall health care costs associated with atherosclerosis.

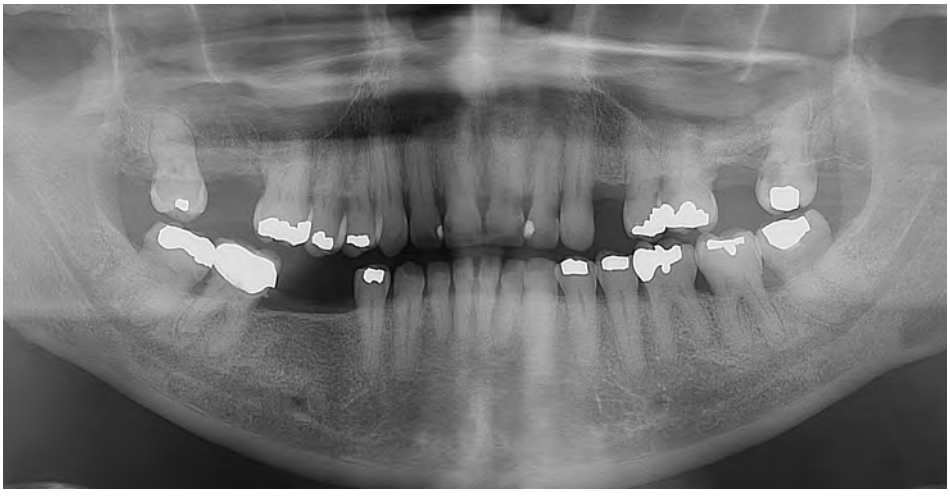


Figure 1. Panoramic radiograph of a 60-year-old male shows an area of calcification inferior and posterior to the angle of the right mandible.

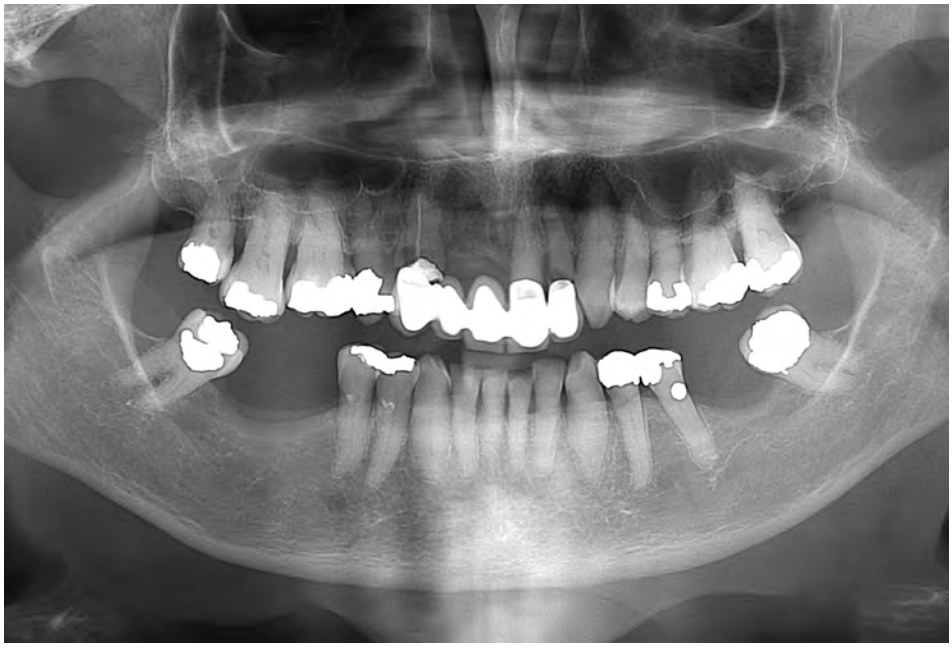
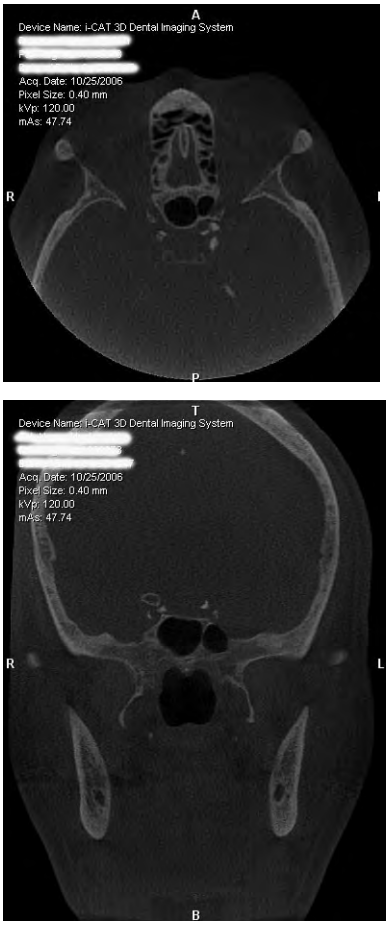


Figure 3. Panoramic image of an 86-year-old female shows areas of calcification inferior and posterior to the angle of the mandible, bilaterally.



Figures 2a and 2b. A cone-beam CT scan reveals additional areas of calcification intracranially in the internal carotid artery within the cavernous sinus.

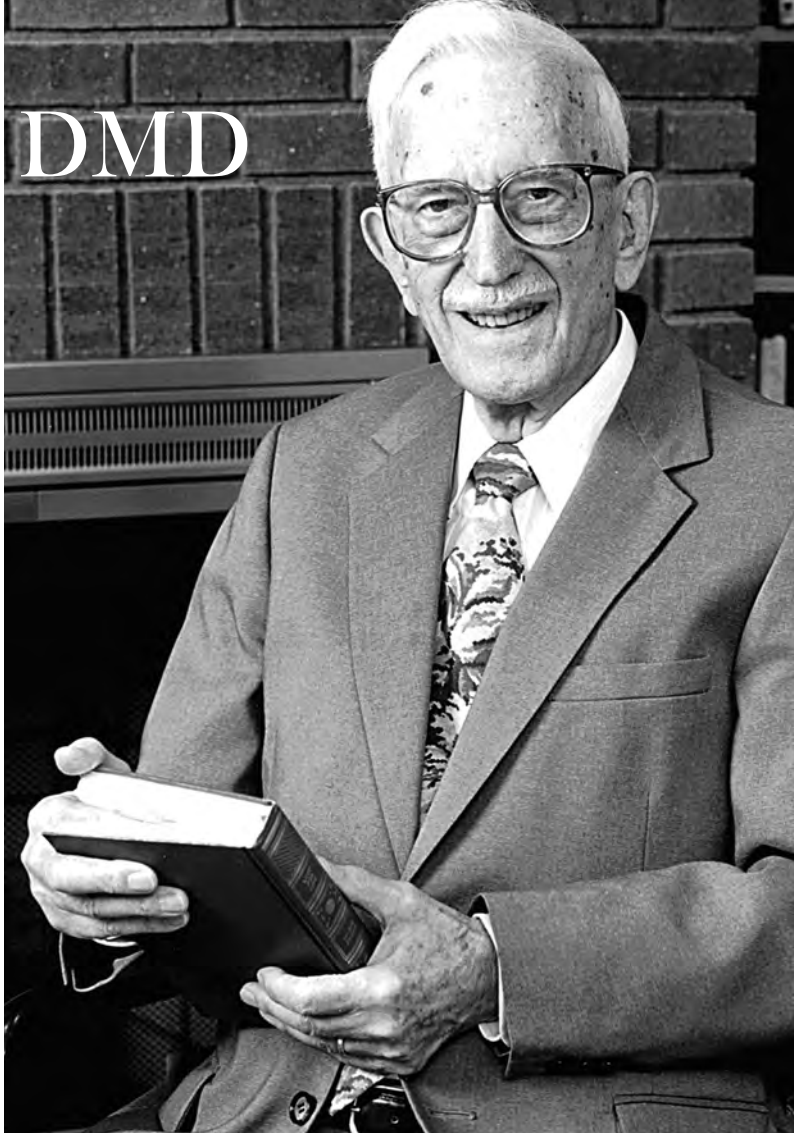
References

1. Anderson RN, Smith BL. Deaths: leading causes for 2002. National vital statistics reports; 53(17). Hyattsville (MD): National Center for Health Statistics; 2005.
2. Matchar DB, Duncan PW. Cost of stroke. Stroke Clin Updates 1994;5:9-12. Bethesda (MD): National Institute of Neurological Disorders and Stroke (NINDS). Brain basics: preventing stroke. NIH Publication No. 94-3440-b.
3. Taylor TN, Davis PH, Torner JG, Holmes J, Meyer JW, Jacobson MF. Lifetime cost of stroke in the United States. Stroke 1996 Sep;27(9):1459-66.
4. American Dental Association Council on Dental Materials, Instruments, and Equipment. Recommendation in radiographic practices: an update. JADA 1989;118:115-7.
5. American Dental Association (Council on Dental Benefit Programs, Council on Dental Practice, Council on Scientific Affairs), US Department of Health and Human Services (Public Health Service, Food and Drug Administration). Guidelines for the selection of patients for dental radiographic examinations; 2004.
6. Badder JD, Shugars DA. Need for change in standards for caries diagnosis—epidemiology and health services research prospective. J Dent Edu 1993;57:415-21.

J. Murray Gavel, DMD

Bridging Research and Practice

JENNIFER KELLY
Ms. Kelly is associate vice president of the Forsyth Health Foundation in Boston.



Few dentists have left as lasting a legacy as the late J. Murray Gavel, DMD. Today's practitioner can learn a great deal by emulating Dr. Gavel's approach to dentistry. An examination of his life also provides a snapshot of how the profession has changed and matured. As the 14th Annual Dr. J. Murray Gavel Lecture approaches, this article takes a look back at his life.

Dr. Gavel began his career in 1928 as a general practitioner. At that time, most of today's specialties did not exist. However, Dr. Gavel's true "specialty" was embracing continuing education and bringing clinical rigor to his dental practice. Although he did not retire until he was 85, Dr. Gavel, who passed away in 1999 at the age of 99, remained excited and challenged by the changes occurring within his chosen vocation.

He believed continuing education was—and is—the key to providing the best dentistry for patients. According to his former student Erling Johansen, DMD, PhD, a former dean of Tufts University School of Dental Medicine (TUSDM), this passion for education continued throughout Dr. Gavel's career. "When he was 80 years old, someone asked Dr. Gavel why he still took continuing education courses," says Dr. Johansen. "Dr. Gavel replied that he wanted to apply the latest knowledge to patient care."

In addition to practicing dentistry for 65 years, Dr. Gavel served as chair, dean, and trustee at TUSDM; vice president of the American Dental Association; president of the International College of Dentists; president of the Pierre Fauchard Society; and trustee of the Forsyth Institute. He chaired the Metropolitan District of the Massachusetts Dental Society in 1948 and served as president of the Society in 1949.

A Lifetime of Discovery

Dr. Gavel was born in Kemptville, Nova Scotia, on May 18, 1900. His family moved to the United States when he was 10 years old. Although his formal education ended in 1923 when he graduated from what was then called the Tufts College Dental School, he set off on a lifetime of learning that should serve as an example to today's practitioner.

In many ways, Dr. Gavel was ahead of his time. When he entered Tufts in 1920, Dr. Gavel had simply a high school education behind him. Today's applicant to TUSDM also has a bachelor's degree and has taken a rigorous scientific course load to prepare for the dental education.

When Dr. Gavel began his practice, the pulley-driven dental drill revolved at a maximum speed of 3,500 revolutions per minute (rpm). Modern dental drills can rotate up to 500,000 rpm, and they generally use burs made of carbon alloys and diamond chips.

From 1939 to 1941, Dr. Gavel assisted in the longitudinal growth study of healthy children at the Harvard School of Public Health. This study was a coordinated research effort encompassing a variety of fields within human biology and medicine with the goal of gaining a more precise understanding of human development and its relation to the health problems of children. Dr. Gavel and other health professionals were part of a team that evaluated how a child's environment may affect overall growth and development. His work also informed an early study on the eruption and growth of permanent teeth. Dr. Gavel brought dental health into the equation of overall health long before it was the norm.

As a practitioner, Dr. Gavel cared for some of Boston's best-known citizens, including Leonard Carmichael, president of Tufts and later secretary of the Smithsonian Institution; Earl Tupper, the inventor of Tupperware; and Samuel Proger, MD, a key architect of the New England Medical Center.

Dr. Gavel demonstrated his commitment to research and education by acting as a trustee for the Forsyth Institute, one of the leading independent dental research organizations. Holding this position from 1967 to 1997, he was one of the Institute's longer-serving board members. According to Forsyth President Dominick DePaola, DDS, PhD, Dr. Gavel represented an ideal trustee for an oral health and biomedical science research organization.

"By all accounts, Dr. Gavel had a passion for bringing the benefits learned in the lab and clinic to the dental practice. He shared Forsyth's vision for communicating and applying breakthroughs in oral health and disease prevention," says Dr. DePaola.

During Dr. Gavel's tenure as a trustee, dental research greatly informed dental practice. When he joined the board, research focused primarily on the ability of bacteria to adhere to a specific target tissue, which revolutionized both dental and medical professions in explaining why different areas of the body attract certain types of organisms.

Honors and Accomplishments

Dr. Gavel took a leadership role in many prestigious organizations. In 1953, he presided over the American Academy of Dental Science. As a regent of the First District of the International College of Dentists (USA Section) from 1958 to 1964, Gavel represented the ICD on an extended tour of the Far East. He was an ideal candidate for inaugurating the Massachusetts Chapter of the Academy of General Dentistry (AGD) in 1971. The AGD's stated mission—to serve the needs and represent the interests of general dentists and to foster their continued proficiency through quality continuing dental education in order to better serve the public—is similar to Dr. Gavel's personal goal.

According to Roy Rinkle, DDS, chair of the Gavel Lectureship Endowment Fund, Dr. Gavel was also vital to the survival of the Academy of General Dentistry. "At one point, Dr. Gavel helped the Academy of General Dentistry stay afloat by, along with another colleague, providing its budget for a year," says Dr. Rinkle.

Throughout his career, Dr. Gavel received recognition from colleagues, including the Milwaukee Research Group Distinguished Professional Service Award; Tufts Distinguished Service Award; an honorary Doctorate of Laws from Tufts; the Northeastern Dental Society Outstanding Dentist Award;

Forsyth Hosts 14th Annual Dr. J. Murray Gavel Lecture

The 14th Annual Dr. J. Murray Gavel Lecture will be held at the Forsyth Institute on November 5, 2007. The lecture is open to the public.

According to J. Steven Tonelli, DMD, chair of the Gavel Lectureship Planning Committee, Dr. Gavel believed in providing an educational opportunity for all dentists. "We hope to emulate that with the lectureship," says Dr. Tonelli. "Each year, we invite a speaker who represents the ideals of Dr. Gavel in the areas of dentistry, medicine, academia, or research and who has had a significant impact on the health of the public."

Since its inception in 1994, the lectureship's presenters have included some of the most notable scientists in the field, such as Judah Folkman, MD, of Children's Hospital in Boston; Robert Langer, ScD, of MIT; and Deborah Greenspan, BDS, DSc, of the Oral AIDS Center at the University of California, San Francisco.

The Gavel Lectureship Committee conducts a survey of U.S. dental school deans, asking them to name speakers who would be of interest to the dental profession. The 2007 Gavel Lecture keynote speaker will be Jonathan Garlick, DDS, PhD, a professor in the department of oral and maxillofacial pathology as well as director of the division of cancer biology and tissue engineering at Tufts University. Dr. Garlick established the Center for Integrated Tissue Engineering (CITE) at Tufts as a resource for experimentation in 3-D human tissue models. He originally developed these models to study the pathogenesis of a variety of oral and skin diseases, including early cancer development.

For more information or to register to attend the Gavel Lecture, please contact Salwa Muhammad at **(617) 892-8397** or email ***smuhammad@forsyth.org***.

Dr. J. Murray Gavel believed that continuing education was the key to providing the best dentistry for patients.

the Etherington Award; and the Fauchard Gold Medal, which is awarded annually by the Pierre Fauchard Academy to a person who has made outstanding contributions to the progress and standing of the dental profession.

Today, Dr. Gavel's accomplishments are perpetuated through programs that bring together his great passions: education and clinical practice. Dr. Gavel's vision for dentistry is kept alive through the following programs: the Dr. J. Murray Gavel Center for Restorative Dental Research at Tufts University School of Dental Medicine; the Massachusetts Academy of General Dentistry J. Murray Gavel Memorial Lecture; and the Annual Dr. J. Murray Gavel Clinical Research Lecture at the Forsyth Institute.

According to Dr. Rinkle, "[Dr. Gavel] had a special talent for integrity, clinical accomplishments, research and innovation, and lifelong learning. Every aspect of his life was permeated by his love for his fellow man." ■

Dr. Roy Rinkle (left) presenting Dr. J. Murray Gavel a gift of appreciation at the second annual Dr. J. Murray Gavel Clinical Research Lecture in 1995.

please join us

for the 4th Annual

MDS Foundation Wine Tasting

$175 PER PERSON includes valet parking, food, and wine.

Friday, October 26, 2007
7:00 – 10:00 p.m.
The Lighthouse at the
Seaport Hotel in Boston

REGISTRATION

Online: www.mdsfoundation.org
Phone: Andrea Dotterer
(800) 342-8747, ext. 271
Email: adotterer@massdental.org

MDS FOUNDATION

SOMETHING TO SMILE ABOUT

Thank you for your generosity in helping to expand dental auxiliary and access-to-care programs, including the Mobile Access to Care (MAC) Van Program.

MDS Foundation 2006–2007 Annual Giving Campaign

Please make your annual contribution by filling out a donation form or donate online at ***www.mdsfoundation.org.***

Donor list compiled May 2006–May 2007.

$10,000 or more Dr. William T.G. Morton Society *†

Named for the Massachusetts dentist who performed the first public demonstration of ether as an anesthetic in dental surgery, 1846.

Dr. Robert E. Boose
Dr. Randall L. Davis, PC
Dr. Najmeh Farokhi
Dr. Sara L. Filstrup
Dr. David J. Fiorillo
Dr. Cheryl M. Hills
Dr. Seema Z. Jacob
Dr. Edward E. Ratcliffe
Dr. Neil J. Twomey
Dr. Cathleen E. Wallent
Dr. Alan K. DerKazarian
Dr. Roderick and Mrs. Donna Lewin
Gentle Dental Associates
Dr. Joseph B. Capua
Dr. Michael Chang
Dr. Scott J. Fitzgerald
Dr. Robert P. Girschek
Dr. David A. Goldberg
Dr. Mohammed H. Golparvar
Dr. Rami F. Jradeh
Dr. Robert Kelleher
Dr. Jonathan D. Millen
Dr. Stephanie T. Payne
Dr. Jay L. Pivor
Dr. Sigal Revah
Dr. Richard M. Rothstein
Dr. Stanley J. Rozanski
Dr. Jan A. Sapak
Dr. Samuel M. Shames
Dr. Leendert P. Van De Rydt
Dr. Ronald G. Weissman

$5,000–$9,999 Dr. Ira A. Salmon Society *†

Named for the first President of the Massachusetts Dental Society, 1864.

Dr. Robert A. Faiella
Dr. Charles A. Gagne
Dr. David B. Harte
Dr. Raymond K. Martin
Dr. James and Mrs. Mary Thiel

$1,000–$4,999 President's Club*

Dr. Ronald M. Chaput
Dr. John P. Fisher
Dr. Milton A. Glicksman
Dr. Alan S. Gold
Dr. Constantinos A. Levanos
Dr. Richard LoGuercio
Dr. Robert E. Losert
Dr. and Mrs. John P. Pietrasik
Drs. Thiel, Rubin, Wang & Staff, in honor of colleagues and friends

$500–$999 Platinum Donors

Dr. Sara S. Bachman
Dr. Arthur A. Daniels Jr.
Dr. Nicholas M. Dello Russo
Dr. Augustino T. Forcucci, in memory of Dr. Richard Forcucci
Ms. Linda Karas, Karas Tours
Dr. Stephen W. McKenna
Ms. Marlene Petro
Dr. and Mrs. Paul A. Raymond
Dr. Andrea Richman
Dr. David A. Schmid
Dr. Jeffrey A. Slone
Dr. Edward Swiderski

$250–$499 Gold Donors

Dr. David B. Becker
Dr. John C. Carvalho
Dr. James S. Cinamon
Dr. Melvin I. Cohen
Mr. Jack Eiferman, Esq.
Dr. Shepard S. Goldstein
Dr. Abraham W. Haddad
Dr. Michel A. Jusseaume
Dr. Mary H. Kreitzer
Mr. and Mrs. Edward P. Lopes
Dr. Nicholas A. Perrotta
Dr. David S. Samuels
Dr. John J. Sexton
Dr. Charles L. Silvius
Dr. Michael S. Swartz
Dr. Thomas A. Trowbridge

*Receive discount tickets to special events. †May be either a single contribution or cumulative over five years.

$100–$249 Silver Donors

Dr. Nily Abramovitz
Dr. William J. Adams Jr.
Mr. Robert J. Alconada, MPA
Dr. William M. Auffinger
Dr. Michael J. Bane
Drs. Stephen J. Black and John P. Blatz Jr., Massasoit Dental Associates
Dr. Diane M. Bonanni
Dr. Alfred M. Bongiorno
Ms. Kathleen Boyce, CPA
Dr. René R. Bousquet
Ms. Tara M. Brady
Dr. Philip B. Conti
Dr. Casey B. Cook
Dr. Richard J. Cote
Dr. Michael G. Curtin
Dr. Edward M. D'Eramo
Dr. Phuong T. Dao
Dr. Michael C. Davis
Mr. Scott G. Davis
Mr. Stephen A. Delello, Eastern Dental Financial Services
Dr. Mary C. DeMello
Dr. Steven C. Demetriou
Ms. Lois Dennis
Dr. William R. Dennis
Dr. Betsy Disharoon
Dr. Mark J. Doherty
Dr. Robert J. Esdale
Dr. D. Lawrence Fadjo
Dr. Vincent P.A. Failla
Dr. Maurice J. Fitzgerald
Dr. Paul D. Fitzgerald
Dr. Norbert P. Fraga
Dr. Robert Garber
Dr. Raul I. Garcia
Ms. Maryellen Geurtsen
Dr. Anthony N. Giamberardino
Dr. Philip F.M. Gilley Jr.
Dr. John L. Giunta
Mr. George W. Gonser Jr.
Dr. L. Michael Gouveia
Dr. Carl S. Gulrich
Dr. Michael H. Gusar
Dr. Katherine A. Haltom
Dr. Mary Jane Hanlon-Rogers
Dr. Charles P. Hapcook, Eastern Dentists Insurance Co.
Dr. John A. Herzog
Ms. Lois M. Holt
Dr. Charles E. Hoye
Dr. David M. Hoye
Dr. Barry M. Jaye
Dr. Joseph M. Kelly
Mr. Ralph Kimball, LaVigne Inc.
Dr. Emma J. Koukol
Dr. Iman S. Labib
Dr. June Warren Lee
Dr. David P. Lustbader
Dr. Shibly D. Malouf Jr.
Dr. Linda A. Maykel
Ms. Shannon McCarthy
Dr. Kevin J. McNeil
Dr. Eugene Mickey
Ms. Valerie J. Miller
Dr. William E. Miller
Mr. Jesse Mirenda
Dr. Janis C. Moriarty
Dr. Paul T. Murphy
Dr. Ronald B. Orr
Dr. Nicholas A. Perrotta
Dr. Ralph P. Pollack
Ms. Dorrey J. Powers
Dr. Thomas B. Puschak
Dr. Zori Rabinovitz
Dr. Philip E. Richardson
Dr. Michael A. Rubin
Dr. Samuel P. Sawyer
Dr. Arthur I. Schwartz
Dr. Francis X. Shea
Dr. Michael C. Sheff
Dr. R. Scott Smith
Dr. Jeanne P. Strathearn
Dr. Theodore J. Thibodeau
Dr. Kevin F. Toomey
Dr. John W. Torchia
Dr. Thomas P. Torrisi
Dr. Frank T. Varinos
Dr. Lisa Vouras
Dr. Michael Wasserman
Dr. Robert J. Watson
Dr. Carrie C. Webb
Dr. Hans Peter Weber
Dr. Kevin Wells
Dr. Benjamin A. White
Dr. Martin A. Wohl
Dr. Richard A. Zuppardi

Memorial and Tribute Donations

May 1, 2006 - April 30, 2007

In Memory of Gene Gisley, uncle of Marlene Petro
Drs. David Becker, Norman Becker & Charles Silvius
Dr. Robert E. Boose
Scott G. Davis
Dr. Milton A. Glicksman
Lois M. Holt
Drs. William and June Lee
Massachusetts Dental Society

In Memory of Dr. David J. Baraban
Drs. James Thiel, Michael Rubin & Tina Wang

In Memory of Elizabeth Brady
Drs. David Becker, Norman Becker,
Charles Silvius and Todd Belf-Becker

In Memory of Dr. William H. McKenna
Dr. Robert E. Boose
Dr. Roderick W. Lewin
Dr. David A. Schmid
Dr. Tina L. Wang
Massachusetts Dental Society

In Memory of Barbara Ghilain
Dr. Norman Becker
Dr. David B. Becker
Dr. Todd Belf-Becker
Dr. Charles L. Silvius

In Memory of Samuel Goodman
The Becker Family: David, Jackie, Todd & Kate

In Memory of Terry Spellman
Massachusetts Dental Society

In Memory of Dr. Arthur Adelson
Mildred Alpert
The Aronson Family: Steven, Ronna, Jennifer & Scott
Susan and Joel Bloom
Rhona and Steven Brand
Jeffrey and Jan Brown
Richard and Gail Constant
Myra and Ken Fraidin
The Freeman Family
Frederick and Paula Geller
Audrey and Albert Helzner & Family
Deborah Oshry Herzog
Harold S. Hoch
Lee and Sharon Jacobs
June M. Kruger
Chip Marcus and Group at Wachovia Securities
Sally Miller and Family
Angela Nannini and Thomas Ducibella
Claire Oshry
George and Miriam Oshry
The Penedo Family: Marci, Gus, Jeff & Missy
Ann Reeves
Melvyn and Marilyn Rubin
Dr. Arthur C. Sandler
Abigail Schwartz
Selma Sherr and daughter
Elizabeth and Jason Sobol
Ellen and Rick Steinberg
Deborah Stone
Dr. and Mrs. Sidney Strome
The Trompeter Family
Susan P. Wein
Nelson and Joan Zide

In Appreciation of Colleagues and Friends during the Holiday Season
Drs. James Thiel, Michael Rubin, Tina Wang & Staff

In Memory of Arline Broadbent, mother of Dr. Janis Moriarty
Dr. David B. Becker
Dr. Robert E. Boose
Dr. David A. Schmid
Dr. Charles L. Silvius

In Honor of the Birthday of Dr. John Herzog
Dr. Robert E. Boose

In Memory of Kathleen Alizzeo, wife of Dr. Peter Alizzeo
Massachusetts Dental Society

In Memory of Mrs. Ruth Fiore
Dr. Enrico F. DeMaio and Family

In Memory of Donald J. Dillon, father of Sean V. Dillon
Dr. Robert E. Boose
Massachusetts Dental Society

In Memory of Dr. Melvin Cohen
Dr. Norman and Barbara Becker

In Honor of Dr. David Schmid during the Holiday Season
Laurie A. Pasakarnis and Staff of Dr. Schmid

In Honor of Colleagues and Friends during the Holiday Season
Dr. Charles A. Gagne

In Honor of Dr. Robert E. Boose during the Holiday Season
Marc Kaplan, CAE

In Honor of Colleen Chase and Family during the Holiday Season
Jack and Dianne Evans
Nancy Ulrich

In Memory of Marilyn Cicero
Drs. David Becker, Norman Becker, Charles Silvius
& Staff

In Memory of Alphonso Maiellano
Dr. David B. Becker and Jackie Belf-Becker

In Memory of Dr. Sumner Sapiro
South Shore District Dental Society

In Memory of Charlotte Reims
Dr. David A. Schmid

In Memory of Gertrude Hartman, mother-in-law of Dr. Richard LoGuercio
Dr. David A. Schmid
Massachusetts Dental Society

In Memory of Dr. Joseph DiStasio
Dr. Michael P. Arrigo
Drs. David Becker, Norman Becker & Charles Silvius
Massachusetts Dental Society
North Metropolitan District Dental Society

In Memory of John Alconada Jr., father of Robert J. Alconada, MPA
Dr. and Mrs. John P. Fisher
Dr. David A. Schmid

In Memory of Joan Hansen
Dr. David A. Schmid

In Memory of Dr. Joseph B. Connolly
Dr. David A. Schmid

In Memory of Dr. Richard Forcucci
Dr. Robert E. Boose
Dr. James S. Cinnamon
Dr. Augustino T. Forcucci
Dr. David A. Schmid
Massachusetts Dental Society
South Shore District Dental Society

In Memory of Ruth Taylor
Dr. Robert E. Boose

In Memory of Sue Boynton
Dr. Richard LoGuercio

In Memory of Jane B. Rosen, mother of Larry Rosen, CPA
Massachusetts Dental Society

Best Wishes on a Full Recovery from Surgery for Dr. Richard LoGuercio
Dr. and Mrs. Milton A. Glicksman
Dr. David A. Schmid

In Memory of Idelle Kosofsky
Dr. and Mrs. David B. Becker & Family
Dr. and Mrs. Norman Becker

In Memory of Frank Englert
Betty Jane Mulcahy

In Memory of Charles W. Veysey, father of Michelle Curtin
Drs. David Becker, Norman Becker & Charles Silvius
Dr. James S. Cinamon
Dr. Alan K. DerKazarian
Dr. Robert A. Faiella
Dr. and Mrs. John P. Fisher
Dr. Milton A. Glicksman
Marc Kaplan, CAE
Dr. Stephen W. McKenna
Marlene Petro
Dr. Andrea Richman
Dr. Thomas P. Torrisi
Dr. Robert C. Williams
Massachusetts Dental Society

In Honor of the Marriage of Edwina Drummond to Dr. Robert E. Boose
Robert J. Alconada
Dr. and Mrs. Joel J. Alpert
Dr. and Mrs. David B. Becker
Dr. René R. Bousquet
Kathleen Boyce, CPA
Derek and Tara Brady
Colleen Chase
Randall F. Cooper
Lindsay J. Crapser
Stefanie Cunniffe
Michelle Curtin
Scott G. Davis
Stephen A. Dellelo,
Eastern Dental Financial Services
Dr. William R. Dennis
Dr. and Mrs. Alan K. DerKazarian
James and Jeannie Drummond
Jack Eiferman, Esq., and Fern Fisher
Dr. Robert A. Faiella
Dr. and Mrs. John P. Fisher
Dr. and Mrs. Charles A. Gagne
Maryellen Geurtsen
Dr. Anthony N. Giamberardino
Dr. and Mrs. Milton A. Glicksman
Dr. and Mrs. Shepard S. Goldstein
George W. Gonser, Jr., MDS Insurance Services
Dr. David B. Harte
Lois M. Holt
Dr. and Mrs. Michel A. Jusseaume
Linda Karas, Karas Tours
Deborah and Steve Levin
Dr. Roderick W. Lewin
Dr. Richard LoGuercio
Jim Mason and Sandy Burrus
Shannon McCarthy
Dr. and Mrs. Stephen W. McKenna
Dr. and Mrs. Kevin J. McNeil
Jesse Mirenda
Dr. Janis C. Moriarty
Marlene Petro
Dorrey Powers
Karen Rafeld
Dr. Andrea Richman
Dr. and Mrs. Michael A. Rubin
Dr. David S. Samuels
Dr. David A. Schmid
Dr. and Mrs. Arthur I. Schwartz
Chuck and Roberta Shelingoski
Dr. and Mrs. Charles L. Silvius
Dr. Jeffrey A. Slone
Dr. Jeanne and Michael Strathearn
Dr. and Mrs. James N. Thiel
Dr. Thomas P. Torrisi
Dr. and Mrs. Michael Wasserman

5th Annual MDS BEACON HILL DAY

More than 80 MDS members from across the state participated in the 5th Annual Massachusetts Dental Society Beacon Hill Day by traveling to the State House in Boston to meet with their elected officials. Among the various issues attendees discussed with their legislators was the MDS dental workforce bill—S. 1216–An Act Relative to Dental Auxiliaries. MDS members also expressed concern and reservations about a competing bill that would allow dental hygienists to practice in public health settings without the supervision of licensed dentists.

Senator Harriette L. Chandler (D-Worcester) delivered the keynote address and highlighted several of the accomplishments the legislature has made in addressing the access to care issue. Sen. Chandler, who is the chief sponsor of the MDS dental workforce bill and co-chair of the legislature's Oral Health Caucus, urged MDS members to stay involved in the legislative process and communicate on a regular basis with their legislators.

To further highlight the Society's work on the access issue, the MDS Foundation Mobile Access to Care (MAC) Van was parked outside the State House. Legislators and their staffs were invited to tour the Van and receive additional information on the Society's efforts to expand and enhance access to care for all of the Commonwealth's residents.

Commonly Encountered Radiolucencies and Radiopacities of the Jaws

VIKKI NOONAN, DMD, DMSC
SPENCER KEMP, DDS
Dr. Noonan is assistant professor of oral and maxillofacial pathology and Dr. Kemp is assistant professor of oral and maxillofacial pathology at Boston University School of Dental Medicine.

Radiolucencies and radiopacities of the jaws are frequently encountered during the course of routine radiographic examination. Understanding when such radiographic features indicate a need for biopsy and histopathologic examination is important for appropriate patient management.

Radiolucencies can be subclassified by clinical presentation based on location and radiographic appearance. A systematic approach to evaluating radiographic features of an area of radiolucency ensures a more focused differential diagnosis. An effort should be made to assess the borders of a lesion to determine whether or not the lesion is well corticated, has ill-defined boundaries, and has either a unilocular or a multilocular appearance. Additionally, the location of the radiolucency can be used to further characterize the lesion and shape the differential diagnosis.

Radiolucencies are best divided into two categories: lucencies that are associated with teeth, and lucencies that are apparently removed from odontogenic structures. Radiolucencies associated with teeth carry unique differential diagnoses based on the relationship between the lucency and the associated tooth/teeth. Tooth-associated radiolucencies typically present in either a pericoronal or a periradicular location. While exceptions do occur, it is generally recognized that pericoronal radiolucencies 2.5 mm or less in greatest dimension may represent follicular tissue, and those that are larger than 2.5 mm in greatest dimension or those lesions associated with pain or cortical expansion require further consideration.[1]

The most common radiolucencies located in a pericoronal relationship include the hyperplastic dental follicle and the dentigerous cyst. However, a number of other odontogenic cysts and tumors may present in a pericoronal configuration and include odontogenic keratocyst (OKC), ameloblastoma, ameloblastic fibroma, and adenomatoid odontogenic tumor, among others. Because treatment and patient management vary considerably amongst these entities, a biopsy with submission of lesional tissue for histopathologic examination is essential. Some key features for each of the above entities can be useful in forming a differential diagnosis. Odontogenic keratocysts can occur over a wide age range, may be unilocular or multilocular, and tend to tunnel through bone long before evidence of cortical expansion is seen. Multiple lesions may be seen in association with nevoid basal cell carcinoma syndrome.[2] Because odontogenic keratocysts are prone to recur, definitive diagnosis is important for appropriate patient management. Ameloblastoma, on the other hand, is rarely seen in individuals under the age of 20, is frequently characterized by cortical expansion, and presents most typically in the molar region of the jaws.[3]

Other odontogenic tumors that may present in a pericoronal relationship include ameloblastic fibroma and ameloblastic fibro-odontoma. Both lesions are more common in the posterior mandible and frequently prevent the eruption of molar teeth. While both lesions present in young patients, ameloblastic fibro-odontoma typically presents in a somewhat younger patient population and is remarkable for a mixed radiolucent-radiopaque appearance due to the presence of calcified tissue within the lesion; it also tends toward a more limited growth potential than the ameloblastic fibroma.[4]

Another lesion that is sometimes seen in association with the crown of an unerupted tooth is the adenomatoid odontogenic tumor. This lesion typically presents in young patients and is unique for its predilection to occur in the anterior maxilla.[5] Whereas the radiolucency associated with a dentigerous cyst typically extends to the cemento-enamel junction (see Figure 1), the radiolucency associated with the adenomatoid odontogenic tumor may extend well beyond the cemento-enamel junction to include the tooth root (see Figure 2). While definitive diagnosis for each of these lesions via biopsy and submission of lesional tissue for histopathologic analysis is critical, key distinctive features such as these may help generate a useful working differential diagnosis and management approach.

Periradicular radiolucencies most commonly represent localized inflammatory reactions associated with nonvital teeth. The two most frequently encountered pathologic entities associated with nonvital teeth include periapical granulomas and periapical cysts; however, the two cannot be distinguished on radiographic

appearance alone. Although treatment management does not differ between the two lesions, submission of lesional tissue for histopathologic analysis is necessary as other lesions may mimic inflammatory periapical pathosis.

Occasionally, other odontogenic cysts and tumors, hematologic disorders including Langerhans cell disease, early fibro-osseous lesions, giant cell lesions, and primary and metastatic malignancies may present in a periradicular fashion. While histopathologic analysis is critical for definitive diagnosis, some features noted clinically and radiographically may be suggestive of a particular diagnosis and are discussed elsewhere in this review. Such lesions require management protocols tailored to the specific diagnosis.

Some radiolucencies, while not intimately associated with teeth, may insinuate themselves between tooth roots. One such lesion, the central giant cell granuloma, typically presents as a radiolucent lesion removed from teeth; however, it may splay tooth roots and cross the midline when involving the anterior mandible. Pain associated with the lesion, root resorption, paresthesia, presentation at a young age, and recurrence are sometimes seen in lesions exhibiting a more aggressive behavior.[6]

Another lesion found in an interradicular location is the nasopalatine cyst. Derived from residua of the nasopalatine duct, the nasopalatine cyst presents as a radiolucent lesion in the anterior maxilla between the central incisors. Swelling in the region of the incisive papilla is seen with some frequency on clinical examination. Superimposition of the anterior nasal spine on the lesion sometimes gives the impression of a heart-shaped lucency. The teeth respond normally to vitality testing, so an inflammatory periapical pathosis should not be confused with this entity. In some instances, root resorption may be seen.

Lastly, the simple bone cyst (traumatic bone cyst) is an asymptomatic lesion, typically presenting in young patients, that may "scallop" between the roots of vital teeth (see Figure 3). On surgical exploration, an empty cavity is found devoid of a true cystic lining. Surgical exploration alone generally stimulates bleeding into the cavity which, over time, leads to complete resolution; however, recent reports convey the importance of following a patient to healing to ensure complete resolution and monitor for recurrence.[7]

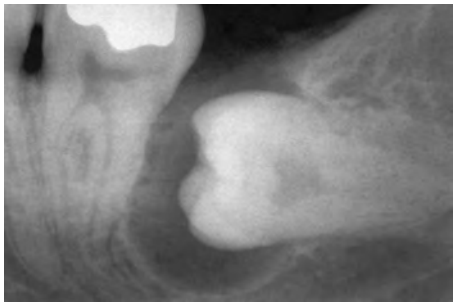


Figure 1. Pericoronal radiolucent lesion involving the crown of an unerupted mandibular molar extending to the cemento-enamel junction.

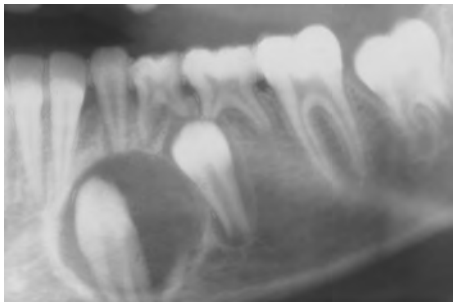


Figure 2. Pericoronal radiolucent lesion involving an unerupted mandibular canine extending beyond the cemento-enamel junction.

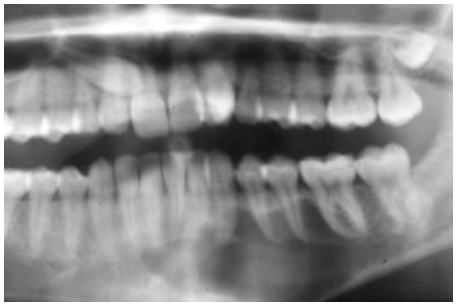


Figure 3. Panoramic radiograph showing a large radiolucent lesion of the mandible scalloping between the roots of vital teeth.

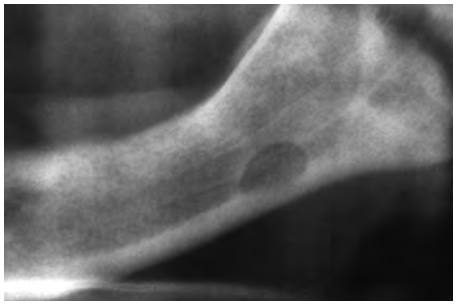


Figure 4. Radiolucent lesion of the posterior mandible below the inferior alveolar canal.

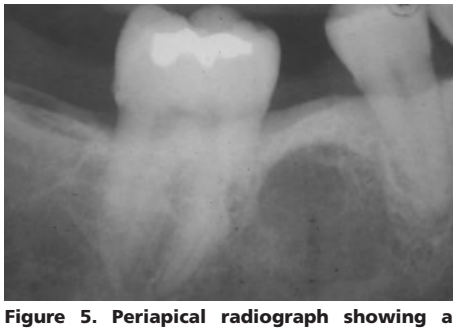


Figure 5. Periapical radiograph showing a radiolucent lesion with subtle trabeculations throughout. Image courtesy of Dr. Craig Fowler.

Radiolucent lesions unassociated with teeth include Stafne's defect, focal osteoporotic bone marrow defect, and the residual cyst. Stafne's defect may present as an asymptomatic lucency below the inferior alveolar canal in the posterior mandible (see Figure 4), as a 1–1.5 cm radiolucency anterior to the gonial angle, or as a depression on the medial aspect of the mandible, and is remarkable for a well-circumscribed corticated margin. Because the lesion typically presents as a lingual mandibular salivary gland depression, surgical exploration is generally unnecessary as the diagnosis can be made with reasonable confidence based on clinical-radiographic correlation.

Some radiolucent lesions are more commonly seen in edentulous spans of the alveolar bone. The focal osteoporotic bone marrow defect represents a focus of hematopoietic marrow within the alveolar bone. These lesions typically present in women at the site of a previous tooth extraction predominantly in the posterior mandible[8] (see Figure 5). Frequently, fine trabeculations may be seen coursing through the lucency. If teeth are present, the lesion may arise in an interradicular location.

Another radiolucency that may be seen at the site of a previous tooth extraction is the residual cyst. The residual cyst represents a focus of unresolved periapical pathology that persists beyond extraction of a non-vital tooth. Residual cysts are remarkable for corticated margins and are well circumscribed. Since a number of odontogenic and nonodontogenic lesions may mimic residual cysts radiographically, surgical curettage and submission of lesional tissue for histopathologic examination is necessary.

Radiolucencies with ill-defined margins typically represent either inflammatory lesions or malignant processes. Osteomyelitis represents a diffuse inflammatory process presenting as a "moth-eaten" radiolucency secondary to a bacterial infection or extension of a periapical infection. Typically presenting in the mandible of adults, osteomyelitis frequently contains foci of radiopacity within the lucency representing osseous sequestration.

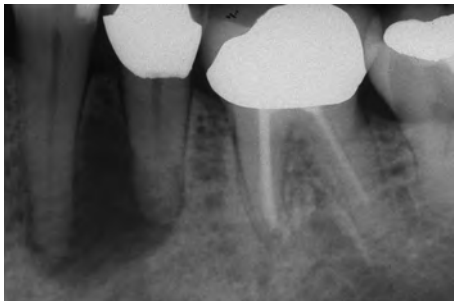


Figure 6. Periapical radiograph showing an ill-defined radiolucency at the apices of mandibular teeth. Image courtesy of Dr. Karim Alibhai.

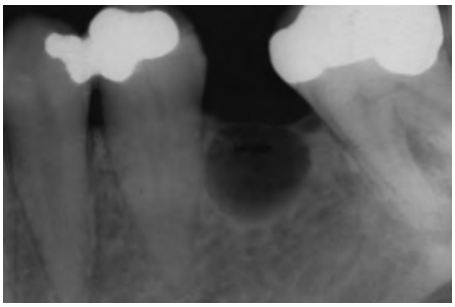


Figure 7A. Early lesion of focal cemento-osseous dysplasia presenting as a radiolucency in the edentulous mandibular first molar area.

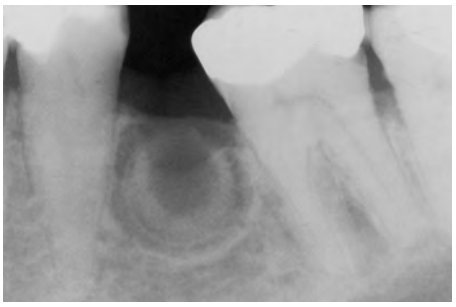


Figure 7B. Radiograph of the same patient taken two years later showing mixed lucent-opaque changes. Images courtesy of Dr. Peter Drob.

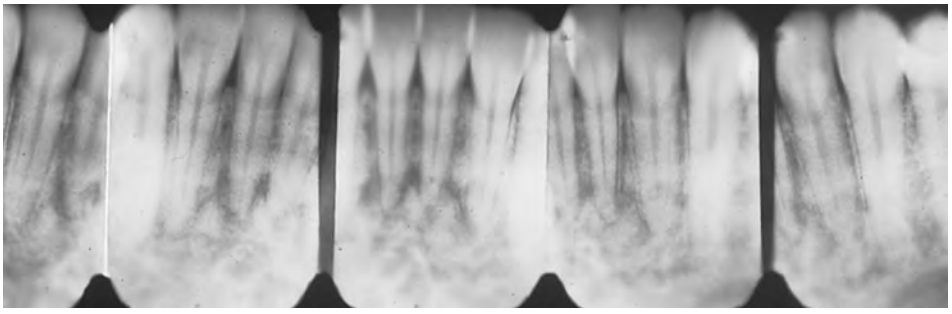


Figure 8. Periapical radiographs showing mixed radiolucent-radiopaque changes at the apices of vital mandibular anterior teeth.

Another lesion presenting as an ill-defined lucency is Langerhans cell disease. Langerhans cell disease involving bone most commonly presents in young patients in the first decade of life. Bone lesions may be solitary or multiple and present as radiolucencies remarkable for ill-defined borders. These lesions may leave approximating teeth "floating" without the support of surrounding alveolar bone (see Figure 6).

Other lesions that may show a similar radiographic appearance include periodontal disease and metastatic disease. A lucency of this nature requires biopsy for histopathologic evaluation. If a diagnosis of Langerhans cell disease is rendered, the patient should be evaluated for other bone lesions throughout the body. As indicated, primary and metastatic lesions of alveolar bone are also remarkable for ill-defined borders and destroy alveolar bone at such a rapid rate that surrounding teeth are left unsupported. The radiographic appearance of bone associated with a malignant lesion is frequently described as "moth-eaten," and cortical perforation and pathologic fracture are not uncommon findings. Such features require biopsy with submission of lesional tissue for histopathologic evaluation to ensure appropriate patient management.

Radiopaque lesions of the jaws are fairly common radiographic findings. Fortunately, in the absence of symptoms and cortical expansion, most radiopacities are innocuous and simply require informing the patient and monitoring with periodic radiographic observation. Radiopaque lesions can be divided into two groups: fibro-osseous lesions and lesions representing either metabolic, reactive, or neoplastic processes involving aberrant bone or tooth formation.

Fibro-osseous lesions of bone present as a spectrum of appearances ranging from radiolucent lesions to radiopaque lesions with a mixed lucent-opaque intermediate stage. Most of these lesions are noted on routine radiographic examination.

Fibro-osseous lesions include cemento-osseous dysplasia, cemento-ossifying fibroma, and fibrous dysplasia. Cemento-osseous dysplasia is divided into three distinct subtypes indicating the distribution of the lesions: focal cemento-osseous dysplasia representing a solitary lesion; periapical cemento-osseous dysplasia, classically occurring in the lower anterior quadrant; and florid cemento-osseous dysplasia showing a multifocal distribution.

Focal cemento-osseous dysplasia classically presents in middle-aged Caucasian females at the apices of vital molar teeth, where it usually causes no expansion or symptoms (see Figures 7A and 7B).[9] This radiographic appearance is similar to condensing osteitis and idiopathic osteosclerosis. Periapical cemento-osseous dysplasia classically presents in middle-aged African American females near the apices of the vital mandibular anterior dentition (see Figure 8.). Lastly, florid cemento-osseous dysplasia is remarkable for a predilection to affect middle-aged African American women with characteristic multifocal involvement and a frequently bilateral distribution. Florid cemento-osseous dysplasia is sometimes associated with the development of simple bone cysts.

Generally, lesions of cemento-osseous dysplasia do not require treatment; however, decreased vascularity of the bone in these lesions predisposes patients to poor healing following either extraction or implant placement. This condition also predisposes to secondary osteomyelitis. It is recommended that patients diagnosed with cemento-osseous dysplasia maintain a meticulous oral hygiene regimen and seek professional care at routine intervals. Unlike cemento-osseous dysplasia, cemento-ossifying fibroma is less commonly encountered and typically presents as a well-defined lesion with some associated cortical expansion most often arising in the posterior mandible.[10] Root resorption and divergence is often seen with large lesions remarkable for downward bowing of the inferior mandibular cortical bone (characteristic balloon-shaped expansion). Surgical excision is generally indicated and is often permitted with minimal difficulty due to the fact that the lesion is often well demarcated from the surrounding bone by a fibrous capsule.

Unlike the cemento-ossifying fibroma, the lesions of fibrous dysplasia are much more diffuse with an ill-defined boundary between lesional bone and surrounding uninvolved bone. The radiographic features of fibrous dysplasia are sometimes described as "ground-glass" secondary to the marked bony remodeling and subse-

A systematic approach to evaluating radiographic features of an area of radiolucency ensures a more focused differential diagnosis. Additionally, the location of the radiolucency can be used to further characterize the lesion and shape the differential diagnosis.

quent numerous bony trabeculae that accumulate within these lesions. Fibrous dysplasia, which usually develops in the first two decades of life, is often associated with some degree of facial enlargement in the affected area and involves the maxilla with greater frequency than the mandible. When the mandible is involved, characteristic superior displacement of the inferior alveolar canal may be seen.

Radiopaque lesions involving aberrant bone or tooth formation include idiopathic osteosclerosis, condensing osteitis, odontoma, cementoblastoma, Paget's disease of bone, osteomyelitis, osteosarcoma, and some odontogenic tumors. Idiopathic osteosclerosis presents as a focal asymptomatic, nonexpansile area of radiopacity, the cause of which cannot be attributed to local factors. Idiopathic osteosclerosis is frequently seen between and apical to the roots of posterior teeth; however, the radiopacity maintains a distinct boundary from the apices.[11] Often presenting as a pear-shaped area of radiopacity, it is notable that the opaque changes do not breach the crest of the alveolar bone (see Figure 9). Any radiopacity that extends beyond the level of the alveolar crestal bone should be viewed with suspicion for osteosarcoma, and the periodontal ligament (PDL) space should be carefully evaluated for symmetric widening associated with this disease.

Distinct from idiopathic osteosclerosis, condensing osteitis represents a usually well-circumscribed, localized, and completely radiopaque lesion that develops as a periapical reaction of bone to a low-grade chronic pulpitis (see Figure 10). As such, the associated tooth may be sensitive to percussion or have an obvious source of infection or irritation such as a deep restoration or caries; however, evidence of cortical expansion should not be appreciated. More commonly encountered in young adults, condensing osteitis presents at the tooth apex and may resolve following management of the underlying chronic irritation or infection.

The odontoma is the most common odontogenic tumor and can occur anywhere in the jaws.[12] This tumor is most commonly found in children and young adults, is often asymptomatic, and is usually an incidental radiographic finding. Odontomas can, however, prevent eruption of surrounding teeth. Some resemble collections of miniature teeth while others are amorphous radiopaque conglomerations similar in radiodensity to dentin and enamel.[13]

Compared to the odontoma, the cementoblastoma is a very rare odontogenic tumor. It always develops at the root apex and most often involves a mandibular molar tooth. The lesion, because it is fused to the root surface, often causes a loss of the normal periodontal ligament space. Most such lesions show a thin radiolucent rim around the well-defined radiopacity.[14] Percussing a tooth with fused opacity usually elicits a dull "thud" compared to the typical resonance of an uninvolved tooth. Other rare odontogenic tumors that are predominantly radiolucent but usually present with varying degrees of mixed radiopacity due to their production of calcification or tooth structure include ameloblastic fibro-odontoma, adenomatoid odontogenic tumor, and calcifying epithelial odontogenic tumor.

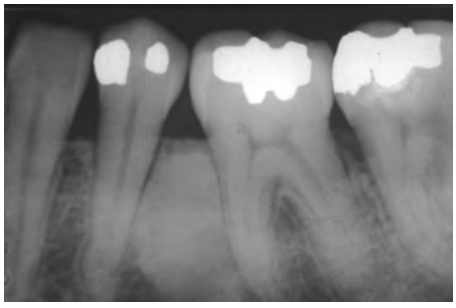


Figure 9. Periapical radiograph showing an asymptomatic pear-shaped radiopacity between the roots of the mandibular posterior teeth.

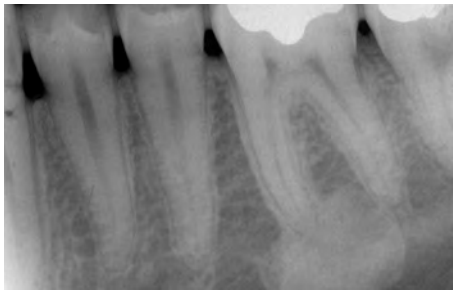


Figure 10. Periapical radiograph showing an area of radiodensity at the apex of a mandibular first molar tooth remarkable for a large restoration.

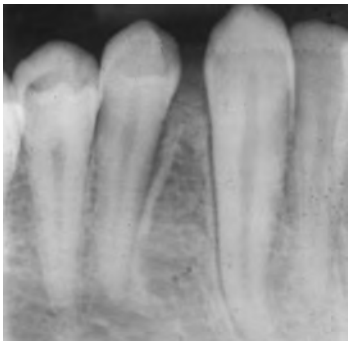


Figure 11. Supracrestal bone deposition and widening of the periodontal ligament space in osteosarcoma.

Paget's disease of bone is a metabolic condition of older individuals that affects bone turnover. It is almost always seen in the elderly and rarely diagnosed before the age of 40. Because it is metabolic, it tends to present as a poorly defined radiopaque change that has been described as "cotton wool" in appearance. Another distinguishing feature is associated hypercementosis of adjacent teeth, and some degree of facial deformity and bone pain are often present.[15,16] Typically affecting the maxilla, expansion associated with Paget's disease often causes formation of multiple diastamata. Diffuse osteomyelitis may show a similar radiographic presentation as Paget's disease in that both may have irregular margins and a somewhat mottled appearance on the bone. Osteomyelitis typically occurs in an area of unresolved odontogenic infection or in patients with predisposing factors that may make the bone more susceptible to infection, such as trauma, Paget's disease, or radiation therapy (osteoradionecrosis).

Osteosarcoma of the jaws is uncommon, with approximately 150 cases diagnosed per year in the United States.[17,18] Lesions are most common in young adults and may be associated with discomfort and cortical expansion.[19] Like Paget's disease and osteomyelitis, osteosarcoma may present as a mottled radiopaque mass with irregular margins. Some lesions produce a "sunburst" pattern

representing exophytic bone production on the surface of the lesion. Features suspicious for osteosarcoma include symmetric PDL space widening of the surrounding teeth, root resorption, and supracrestal bone formation (see Figure 11).[20,21]

Because most radiopacities of the jaws are innocuous, periodic radiographic follow-up exam is prudent in most cases. However, all radiopaque lesions should be evaluated in context with the clinical signs (particularly expansion), symptoms, patient demographics, and the condition of the surrounding dentition. Consideration of these clinical factors, along with close observance for any particular distinguishing radiographic features, is necessary when formulating a differential diagnosis and deciding if further investigation or exploration is necessary. ■

References

1. Farah CS, Savage NW. Pericoronal radiolucencies and the significance of early detection. Aust Dent J 2002;47:262-5.
2. Woolgar JA, Rippin JW, Browne RM. The odontogenic keratocyst and its occurrence in the nevoid basal cell carcinoma syndrome. Oral Surg Oral Med Oral Pathol 1987;64:727-30.
3. Reichart PA, Philipsen HP, Sonner S. Ameloblastoma: biological profile of 3,677 cases. Eur J Cancer B Oral Oncol 1995;31B:86-99.
4. Chen Y, Li TJ, Gao Y, Yu SF. Ameloblastic fibroma and related lesions: a clinicopathologic study with reference to their nature and interrelationship. J Oral Pathol Med 2005;34:588-95.
5. Courtney RM, Kerr DA. The odontogenic adenomatoid tumor. A comprehensive study of 20 new cases. Oral Surg Oral Med Oral Pathol 1975;39:424-35.
6. Kruse-Losler B, Diallo R, Gaertner C, Mischke KL, Joos U, Kleinheinz J. Central giant cell granuloma of the jaws: a clinical, radiologic, and histopathologic study of 26 cases. Oral Surg Oral Med Oral Pathol Oral Radiol Endod 2006;101:346-54.
7. Suei Y, Taguchi A, Tanimoto K. Simple bone cyst of the jaws: evaluation of treatment outcome by review of 132 cases. J Oral Maxillofac Surg 2007;65:918-23.
8. Lipani CS, Natiella JR, Greene GW Jr. The hematopoietic defect of the jaws: a report of 16 cases. J Oral Pathol 1982;11:411-6.
9. Melrose RJ, Abrams AM, Mills BG. Florid osseous dysplasia. A clinical-pathologic study of 34 cases. Oral Surg Oral Med Oral Pathol 1976;41:62-82.
10. Eversole LR, Leider AS, Nelson K. Ossifying fibroma: a clinicopathologic study of 64 cases. Oral Surg Oral Med Oral Pathol 1985;60:505-11.
11. McDonnell D. Dense bone island. A review of 107 patients. Oral Surg Oral Med Oral Pathol 1993;76:124-8.
12. Kaugars GE, Miller ME, Abbey LM. Odontomas. Oral Surg Oral Med Oral Pathol 1989;67:172-6.
13. Owens BM, Schuman NJ, Mincer HH, Turner JE, Oliver FM. Dental odontomas: a retrospective study of 104 cases. J Clin Pediatr Dent 1997;1:261-4.
14. Ulmansky M, Hjorting-Hansen E, Praetorius F, Haque MF. Benign cementoblastoma. A review and five new cases. Oral Surg Oral Med Oral Pathol 1994;7:48-55.
15. Smith BJ, Eveson JW. Paget's disease of bone with particular reference to dentistry. J Oral Pathol 1981;10:233-47.
16. Tillman HH. Paget's disease of bone. A clinical, radiographic, and histopathologic study of 24 cases involving the jaws. Oral Surg Oral Med Oral Pathol 1962;15:1225-34.
17. Reis L, Hankey B, Edwards B, editors. Cancer statistics review: 1973-87. Bethesda, MD: National Institutes of Health, National Cancer Institute; 1990.
18. Garrington GE, Scofield HH, Cornyn J, Hooker SP. Osteosarcoma of the jaws. Analysis of 56 cases. Cancer 1967;20:377-91.
19. Bennett JH, Thomas G, Evans AW, Speight PM. Osteosarcoma of the jaws: a 30-year retrospective review. Oral Surg Oral Med Oral Pathol Oral Radiol Endod 2000;90:323-32.
20. Givol N, Buchner A, Taicher S, Kaffe I. Radiological features of osteogenic sarcoma of the jaws. A comparative study of different radiographic modalities. Dentomaxillofac Radiol 1998;27:313-20.
21. Kabani SP, Pollack RP. Osteosarcoma presenting as supracrestal bone formation. J Periodontol 1994;65:93-6.

AUTHOR'S GUIDELINES

The JOURNAL invites submission of articles, reviews, perspectives, and/or major contributions pertinent to dentistry and related fields. Articles are considered and accepted for publication with the understanding that they have not been previously published and are submitted solely to the JOURNAL.

Manuscript Preparation

All material (title, author affiliations, text, references, tables, legends) should be double-spaced, on one side of 8½ x 11-inch paper, with at least 1-inch margins.

Articles of 2,500 words may contain four illustrations and two tables. References should not exceed 20 in number. Word count and number of illustrations are guidelines for authors. More illustrations or tables may be acceptable with suitable adjustment in the length of the text at the discretion of the editorial committee. We are seeking:

- Extensive and critical surveys of literature, particularly in areas of recent and rapid development
- Essays of opinion on current issues in dentistry
- Reports of new, detailed investigations in dentistry, including clinical and laboratory research
- Contributions to the etiology, diagnosis, and treatment of dental disease
- Studies in dental ecology and education

Manuscript Submission

Please mail your article submission on a disk, with a hard copy, to the Editor, Massachusetts Dental Society, Two Willow Street, Suite 200, Southborough, MA 01745. Manuscripts may also be submitted via email to Melissa Carman, MDS managing editor, at ***mcarman@massdental.org***. Article titles should be concise and descriptive. A transmittal letter, naming one author as correspondent with his/her address, phone and fax numbers, and email address, must accompany the manuscript. Author affiliations must be provided. The Editor reserves the right to edit manuscripts, fit articles within available space, and ensure conciseness, clarity, and stylistic consistency.

References

References should be selective, keyed to the text, and numbered consecutively in order of appearance. Bibliographies or reading lists are not used in the JOURNAL. Personal communications (oral or written) should be incorporated into the text. Journal references must include, in the following order: authors' names, article title, abbreviated journal name, year of publication, volume number, issue number in parentheses, and inclusive page numbers of the article. Book references must give the authors' names, book title, location and name of publisher, and year of publication.

Graphics

Illustrations should be of high quality for satisfactory reproduction, and drawings, charts, and graphs should be of professional quality. Color transparencies and slides of X-ray film are acceptable. On the back of each, print the name of the author and the figure number, and indicate the top. If a figure contains two or more parts, indicate on the back of each the figure number and part letter (1A, 1B, and so forth). For detailed information about electronic transmittal of graphics, email inquiries to ***jburdette@massdental.org***.

Legends for all illustrations should be typed on a separate page. Tables should be organized and supplement the information provided in the text. They should be numbered in the order of their mention in the text, and each typed on a separate page with the table title and footnotes.

Additional Information

Permissions, waivers, and statements of informed consent must accompany the manuscript when it is submitted for publication. Permission of author and publisher must be obtained for the direct use of previously published material (text, photographs, drawings). Up to 100 words of prose material usually can be quoted without permission, provided the material quoted is not the essence of the complete work. Waivers must be obtained for the publication of photographs showing persons, unless faces are masked to prevent identification.

Manuscripts that report or describe the results of experimental investigations on human subjects must contain the following statement: "The informed consent of all human subjects who participated in the experimental investigation(s) reported or described in this manuscript was obtained after the nature of the procedures and possible discomforts and risks had been fully explained."

ADVERTISING

The JOURNAL OF THE MASSACHUSETTS DENTAL SOCIETY is published four times a year: spring, summer, fall, and winter. It is circulated to all 4,800 members of the MDS as well as to paid subscribers and news media.

Information

For display advertising rates, closing dates, and information, contact Rachel Marks, exhibits coordinator, at **(800) 342-8747, ext. 259,** or email ***rmarks@massdental.org***. For classified advertising rates and information, contact Andrea Dotterer, advertising sales coordinator, at **(800) 342-8747, ext. 271,** or email ***adotterer@massdental.org***. For questions about ad design or mechanical requirements, contact Jeanne Burdette, manager of graphic design, at **(800) 342-8747, ext. 254,** or email ***jburdette@massdental.org***.

Preferred Positions and Other Additional Fees

• Inside front cover	15%
• Inside back cover	15%
• Back cover	20%
• Specific inside page	10%
• Bleeds	10%
• Inserts	(contact Andrea Dotterer for details)
• Ad design	$60/hour

Disclaimer

The appearance of advertising in the JOURNAL is not an MDS guarantee or endorsement of the product or the claims made for the product by the manufacturer. The fact that an advertisement for a product, service, or company has appeared in an MDS publication shall not be referred to in collateral advertising.

A Clinico-Pathologic Correlation

JAMES A. KRAUS, DMD
WILLIAM GILMORE, DMD, MS
Dr. Kraus is a first-year resident and Dr. Gilmore is an associate clinical professor of oral and maxillofacial surgery at Tufts University School of Dental Medicine.

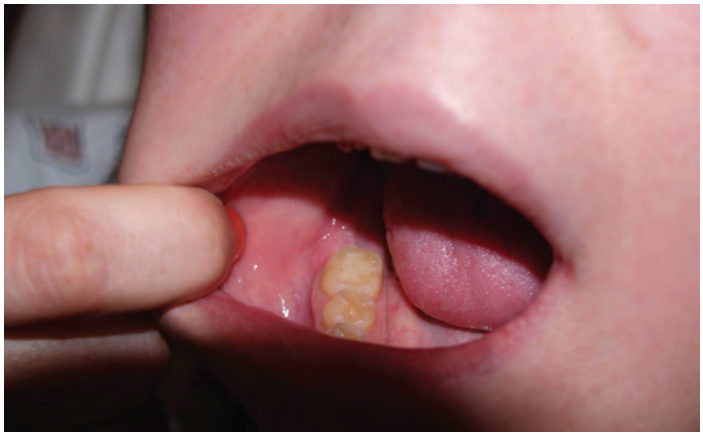


Figure 1. Initial clinical presentation shows buccalingual expansion of the right mandible.

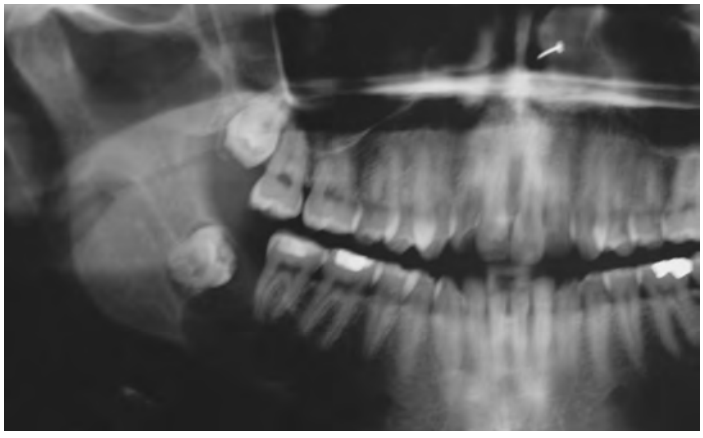


Figure 2. Panoramic radiograph shows a well-demarcated radiolucency in the posterior right mandible.

History

A 24-year-old white female was referred to the department of oral and maxillofacial surgery at Tufts University School of Dental Medicine by her general dentist. She had recently noticed fullness in her right lower jaw but was not experiencing any pain or other symptoms. Her medical history was noncontributory, and her surgical history consisted of a noncomplicated hernia repair five years prior. She was on no medications and denied smoking, drug use, or frequent alcohol consumption.

Clinical examination revealed a buccal and lingual expansion of the right posterior mandible in the area of teeth numbers 31 and 32 (see Figure 1). The examination was negative for trigeminal nerve paresthesia or mobility of teeth. There was no temporomandibular joint (TMJ) clicking, tenderness, or trismus noted. The remaining head-and-neck, as well as oral, exam were unremarkable.

The panoramic radiograph revealed a well-circumscribed radiolucency, approximately 2 cm x 1.5 cm, associated with teeth numbers 31 and 32. There was no evidence of radiopacities or destruction of root structure (see Figure 2). A subsequent head CT was then performed at Tufts-New England Medical Center to obtain additional information regarding its extension in all three dimensions. The CT measured the lesion to be 2.3 cm x 1.3 cm and was positive for thinning of the lingual cortex (see Figure 3). There was no evidence of periosteal reaction, invasion into soft tissues, or any other soft-tissue reaction.

The patient underwent a biopsy, which was submitted for histological examination by both the oral pathology and the general pathology staff.

Differential Diagnosis

Dentigerous cyst
Ameloblastoma
Odontogenic keratocyst
Glandular odontogenic cyst

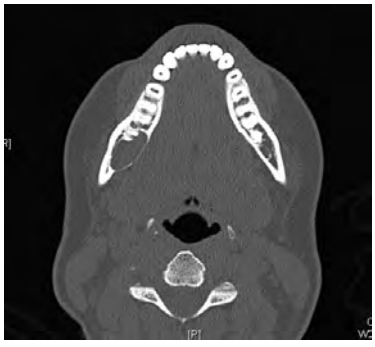


Figure 3. Axial CT scan reveals cystic lesion in the posterior right mandible without perforation of the lingual plate.

Histological Findings

Histopathologic examination of the sections submitted demonstrated a cystic epithelial lining and connective tissue wall. The cystic wall lining revealed odontogenic epithelium, which exhibited marked thickening and reversed polarization of the basal cell layer. The superficial layers of the epithelium resembled stellate reticulum. There were foci of cells that exhibited individual keratinization. The connective tissue wall showed foci of epithelial islands composed of a peripheral layer of cells exhibiting reversed polarization (see Figure 4). There was evidence of intraluminal proliferation with the possibility of some intramural changes (see Figure 5).

Diagnosis

Intramural unicystic ameloblastoma

Discussion

In 1977, Robinson and Martinez were the first to describe the unicystic ameloblastoma as a distinct class of ameloblastoma.[1] It is debated whether the lesion arises *de novo* as a neoplasm or as a neoplastic change from a nonneoplastic epithelial lining. An ameloblastoma, as defined by the World Health Organization in 1992, is a "systemically benign but locally invasive polymorphic neoplasm consisting of proliferating odontogenic epithelium, which usually has a follicular or plexiform pattern, lying in a fibrous stroma." This description fits that of the unicystic type with the distinctions that it presents as a unilocular lesion, tends to be present at a younger age, and, most importantly, depending on the subcategory, can be cured by more conservative treatment than the more traditional multicystic type.

The unicystic type accounts for approximately 10 to 15 percent of all intraosseous ameloblastomas. More than 90 percent of the unicystic ameloblastomas are found in the mandible, usually in the posterior. More than 50 percent of the lesions are found during the second decade of life and present as painless swellings.[2] Radiographically, the majority of patients have a well-circumscribed radiolucency that surrounds a portion, usually the crown, of an unerupted third molar.

More recently, Marx discussed the possible misuse of the term "unicystic ameloblastoma" because it, too, can be classified further histologically, with each classification warranting a different treatment modality. The unicystic lesion can be divided into three major categories: in situ, microinvasive, and invasive. The in situ category describes both mural and intraluminal histological appearances. The mural describes an ameloblastoma arising from and limited to the epithelial lining of the cyst, whereas an intraluminal has the ameloblastoma proliferating within the lumen of the cyst.[3] Marx and colleagues state that the in situ category of lesions are typically cured with enucleation.

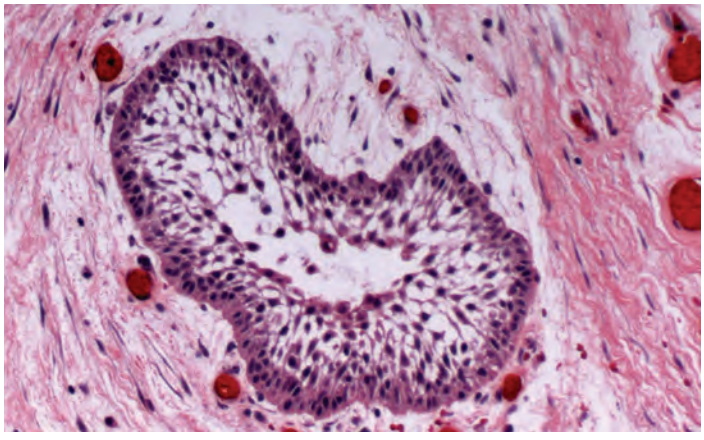


Figure 4. 4x histologic examination portrays classic hyperchromatic columnar basal cells with reverse polarity.

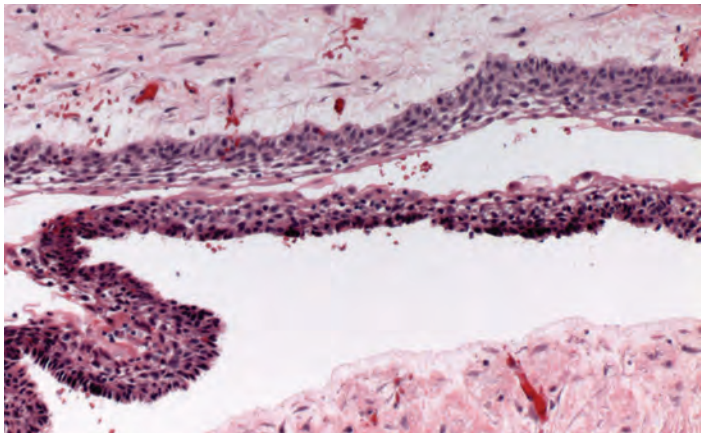


Figure 5. 10x histologic examination exhibits intramural and intraluminal proliferation.

The microinvasive ameloblastoma is also divided into two subcategories: intramural microinvasive and transmural microinvasive. An intramural microinvasive ameloblastoma is described histologically as "an ameloblastoma arising from the epithelial lining and proliferating into the connective tissue layer of the cyst." The transmural microinvasive ameloblastoma describes further invasion of the ameloblastoma extending throughout the entire thickness of the connective tissue layer.[3] One of several resection approaches is necessary for treatment of the microinvasive unicystic ameloblastoma. Another category of unicystic ameloblastoma, called the invasive ameloblastoma, describes an ameloblastoma that has not only proliferated throughout the entire connective tissue thickness but has also invaded adjacent bony structures, and resection is the necessary treatment.[3]

The unicystic ameloblastoma can appear clinically and radiographically very similar to nonneoplastic odontogenic cysts such as a dentigerous cyst, odontogenic keratocyst, or glandular odontogenic cyst.[4] Therefore, histological confirmation is necessary for an accurate diagnosis and determination of appropriate treatment modality.

Dentigerous cysts are the most common type of developmental odontogenic cysts.[2] Similar to the unicystic ameloblastoma, the dentigerous cyst encloses the crown of an unerupted tooth and presents as a painless swelling. It is only through histopathologic examination that a distinction can be made.

Odontogenic keratocysts arise from cell rests of the dental lamina.[2] Presentation can range from a single isolated radiolucent lesion to multiple affected sites in multicystic patterns. These cysts tend to grow in an anterior-posterior direction with minimal bony expansion, and similar to the unicystic ameloblastoma, most cases are asymptomatic until they reach neurovascular structures. Again, histopathologic examination of the cyst confirms diagnosis.

Glandular odontogenic cysts are relatively recent in their exception as a distinct diagnosis. The cyst tends to appear in the third decade of life and is almost always found in the mandible.[2] It has a tendency to be aggressive in nature, and treatment is highly dependent on the size and number of recurrences. As mentioned previously, this lesion shares a common clinical appearance with the unicystic ameloblastoma, dentigerous cyst, and odontogenic keratocyst, and is only distinct by histological evidence of glandular or salivary features found within the cyst.

In regard to the patient with the diagnosis of intramural unicystic ameloblastoma, the treatment options included enucleation and resection. The patient opted to undergo enucleation of the cyst and odontectomies of teeth numbers 31 and 32

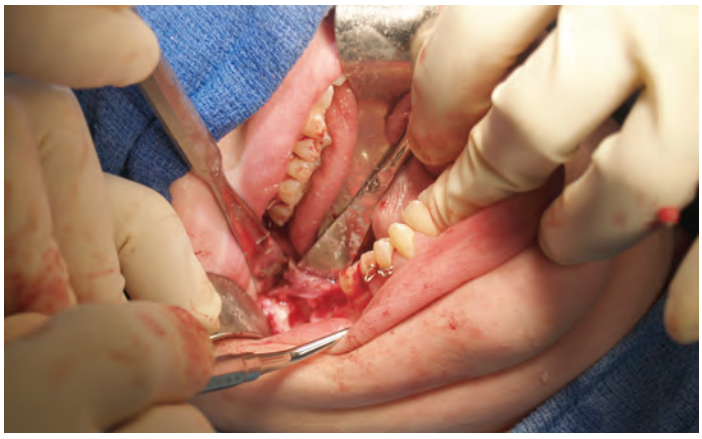


Figure 6. Cyst removal.

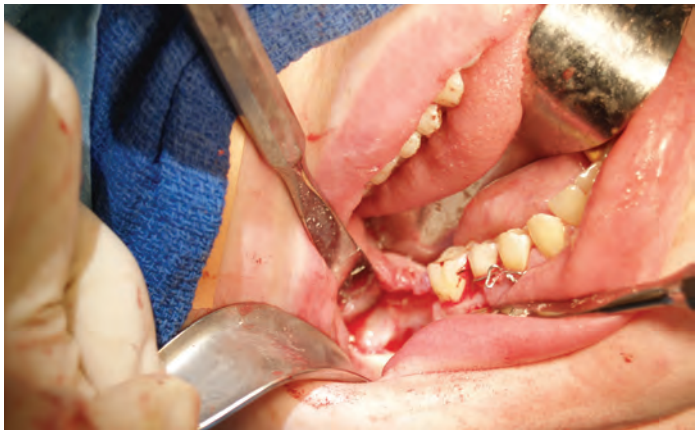


Figure 7. Cyst removed and peripheral ostectomy performed.

(tooth number 31 was removed at the time of the biopsy). This was performed under general anesthesia. Ivy loops were put in place for maxillomandibular fixation in preparation for a possible pathologic fracture. The cyst and associated tooth number 32 were completely removed (see Figures 6 and 7), and a peripheral ostectomy was performed for completeness. The site was then closed primarily over sound bone.

Conclusion

The patient's postoperative course has been uneventful and she has done well. She will be seen on a regular basis with periodic radiographic evaluation to monitor the healing of the bony defect and to evaluate for any recurrence. ■

References

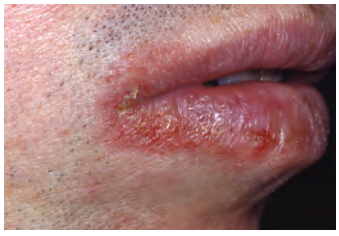
1. Robinson L, Martinez MG. Unicystic ameloblastoma: a prognostically distinct entity. Cancer 1977;40(5):2278-85.
2. Neville B, Damm D, Allen C, Bouquot J. Oral and maxillofacial pathology. 2nd ed. Philadelphia: WB Saunders; 2002.
3. Marx R, Stern D. Oral and maxillofacial pathology: a rationale for diagnosis and treatment. Chicago: Quintessence Publishing; 2003.
4. Marks R, Block M, Sanusi ID, Lowe B, Gross BD. Unicystic ameloblastoma. Int J Oral Maxillofac Surg 1983;12(30):186-9.

VIKKI NOONAN, DMD, DMSC
SPENCER KEMP, DDS
GEORGE GALLAGHER, DMD, DMSC
SADRU KABANI, DMD, MS

Dr. Noonan is assistant professor, Dr. Kemp is assistant professor, Dr. Gallagher is professor, and Dr. Kabani is professor and director of oral and maxillofacial pathology at Boston University School of Dental Medicine.

EXFOLIATIVE CHEILITIS

Exfoliative cheilitis represents a condition in which the lips are chronically inflamed, dry, and flaky. It presents over a wide age range, but is often prevalent in young women. Although the lower labial vermilion is most commonly affected, both lips may be involved. Occasionally, the process may extend to involve perioral skin presenting as dry, flaky zones of erythema.



Scaling and erythema of the vermilion border of the lips.

The condition typically results from either chronic factitial (self-induced) injury, or a contact hypersensitivity reaction leading to persistent crusting of the labial vermilion. Often, there is dual infection with candida and staphylococcus from skin in cases of exfoliative cheilitis with a factitial etiology. Education to avoid lip licking may lead to resolution and may be further enhanced by using 1% Vytone cream topically. Alternatively, nystatin cream combined with equal parts of an over-the-counter antibacterial ointment such as Neosporin may also be effective.

Common agents causing contact hypersensitivity reactions include ingredients found in lipsticks, lip balm, mouthrinses and toothpastes (particularly tartar control varieties), and foods. Careful review of a patient's medical and social history may help in identifying a suspected allergen. In rare cases of exfoliative cheilitis associated with psychological disturbance, antidepressant medications may be considered in close consultation with a patient's physician. ■

Correction

Due to an editorial error, the figure caption in the Spring 2007 (Vol. 56/ No. 1) Pathology Snapshot was incorrect. The figure caption should have read: "Pigmentary changes in a heavy smoker confined to the anterior attached gingiva." The image was courtesy of Dr. Brad W. Neville. The Journal apologizes for this error.

CLINICAL CASE STUDY

JACK L. HERTZBERG, DMD
Dr. Hertzberg is an orthodontist with practices in Cambridge and Needham.

CLASS I MALOCCLUSION

A 38-YEAR-OLD WOMAN PRESENTED FOR orthodontic treatment, requesting correction of her upper and lower crowding with Invisalign®. Her history included previous orthodontic treatment without extractions, periodontal involvement, reciprocal temporomandibular joint (TMJ) clicks on opening, and restorative needs.

The clinical examination and review of the patient's orthodontic records revealed a Class I malocclusion with an acceptable overbite and overjet, moderate upper and lower crowding, retroclined incisors, and poor axial inclination of the upper left central incisor. An examination of her TMJ revealed bilateral clicks on opening with occasional soreness, but no muscle tenderness or deviation with opening or closing. Except for some periodontal involvement, the patient's panoramic radiograph was within normal limits and her cephalometric radiograph exhibited a Class I skeletal pattern with retroclined incisors.

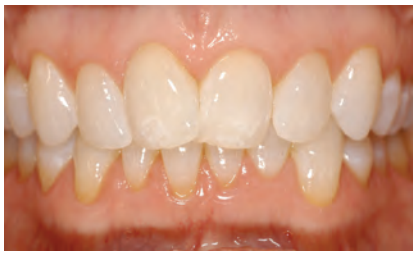


Figure 1. Pretreatment photo shows a Class I malocclusion.

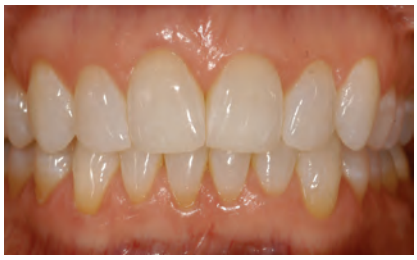


Figure 2. Posttreatment photo shows improved alignment for both mandibular and maxillary anterior teeth.

After consulting with the patient's periodontist and general dentist, it was decided to use Invisalign aligners to take advantage of movements that are most successful with the Invisalign appliance and to minimize forces that might affect the periodontium adversely. Maxillary and mandibular proclination with reproximation allowed for incisor alignment, kept forces to a minimum on the periodontally involved posterior teeth, and provided excellent profile and smile lines. Also, aligners provide nearly full-time disarticulation and the patient reported a decrease in soreness with opening.

Correction of the axial inclination of anterior teeth is a difficult movement and takes a considerable amount of time to achieve with the Invisalign appliance. This type of movement also requires significant anchorage forces to be placed on adjacent teeth. Part of the patient's multidisciplinary treatment plan, which tried to keep forces to a minimum and to keep treatment time as short as possible, was to prevent further periodontal degeneration and address the patient's chief complaint: esthetic alignment. For these reasons it was decided not to upright the upper left incisor. The patient was happy with her result, but if the inclination of the incisor becomes a concern, correction can be obtained restoratively. She is presently wearing Invisalign retainers nightly.

The multidisciplinary approach to treatment allowed the patient to achieve her esthetic goals and to maintain her periodontal health. ■

About Clinical Case Study

A Clinical Case Study is defined as a written and visual assessment of a clinical case wherein the author presents before-and-after radiographs and/or photographs as a means to discuss the diagnosis, treatment plan, and actual treatment of a particular situation. The purpose of this study is to encourage JOURNAL readers to contribute a clinical response to the cases presented. It is our hope that many practitioners will contribute their ideas and treatment approaches, with the end result being a means for communication and learning.

Please address your correspondence to Clinical Case Study, JOURNAL OF THE MASSACHUSETTS DENTAL SOCIETY, Two Willow Street, Suite 200, Southborough, MA 01745. Responses may be published in a future issue of the JOURNAL.

BOOK REVIEWS

NORMAN BECKER, DDS, EDITOR EMERITUS

QuintEssentials 5: Periodontal Medicine—A Window on the Body

IAIN L. CHAPPLE AND JOHN HAMBURGER

Quintessence Publishing

Building on differential diagnoses for periodontal manifestations of systemic diseases and the role of special investigations, this compact text of immediate practical relevance "aims to provide the reader with an illustrated approach to managing the oral consequences of systemic diseases that present within and around the periodontal tissues." As promised in the preface, the authors accomplish that goal.

Using the clinical appearance of a lesion as the starting point—and using color as an aid in diagnosis as opposed to identification of gingival conditions—the authors teach a logical step-wise approach to differential diagnosis and subsequent management. The text focuses on non-plaque-induced lesions, some extremely common and others extremely rare. Each chapter delineates the lesions that fall within the boundaries of that chapter and discusses these conditions.

The strategy, perhaps best summarized as "recognize, examine, understand, and advise," is presented in a text that can be read in a matter of hours as opposed to the time required to study the more detailed periodontal books. Excellent clinical pictures and slides help the reader to better understand the text. This QuintEssentials volume can be kept on the shelf as an aid to clinical practice.

QuintEssentials 2: Panoramic Radiography

VIVIAN RUSHTON AND JOHN ROUT

Quintessence Publishing

With its images of jaws and their respective dentition, as well as much of the surrounding tissues, dental panoramic radiography is becoming more popular as a diagnostic instrument. *Panoramic Radiography*, part of the QuintEssentials of Dental Practice series, will make the practitioner familiar with the imaging technique as well as the interpretation of panoramic images.

Beginning with the history of the development of the panograph, the authors take the readers from the past to the future of this technique. The various aspects of panoramic radiology are all covered and delivered in an easy-to-understand presentation, including history and development; radiographic technique; anatomy; radiation dose and risk; radiography in general dental practice; quality assurance; and interpretation of disease.

The advantages and/or disadvantages of periapical as well as panographic radiography are also interpreted within the text. ■

WHERE WILL YOU STAY?

SEAPORT

Westin Boston Waterfront • Boston Harbor Hotel
InterContinental Boston • Seaport Hotel • Hyatt Regency Boston
Boston Marriott Long Wharf • Ritz-Carlton, Boston Common
Renaissance Boston Waterfront Hotel

BACK BAY

Marriott Copley Place • Sheraton Boston Hotel
Westin Copley Place • Fairmont Copley Plaza • Four Seasons Hotel
Hilton Boston Back Bay • Boston Park Plaza • Radisson Hotel Boston
The Lenox • Colonnade Hotel

There will be YDC room blocks established in both areas. With great rates, comfortable accommodations, and world-class service at every hotel in our block, you can't lose. Sit back and relax as our pleasant and reliable courtesy shuttle service takes you door-to-door.

VISIT *WWW.YANKEEDENTAL.COM* TO VIEW A MAP OF OUR PROPOSED HOTEL BLOCKS. MORE HOTELS MAY BE ADDED.

REGISTRATION AND HOUSING OPEN SEPTEMBER 26, 2007, AT 12 NOON.

QUESTIONS?

Visit ***www.yankeedental.com*** and click on "Yankee's Future Home" for more details, or call **(800) 943-9200, ext. 272.**

COMMUTING?

RESERVE PARKING AT THE BCEC FOR $10 A DAY.

Commuting attendees will be able to reserve parking during YDC preregistration. With more than 1,300 YDC-dedicated parking spaces in the BCEC's South Parking Lot and accessibility to major routes, commuting to Yankee is easier than ever. YDC will provide continuous, comfortable courtesy shuttle service to and from the BCEC during the convention.

Want valet parking? You've got it, for just $20 a day.

CLASSIFIEDS

To advertise in the JOURNAL Classifieds, contact Andrea Dotterer, MDS advertising sales coordinator, at **(508) 480-9797, ext. 271,** for a classified ad contract, or visit the MDS Web site at ***www.massdental.org*** and submit an ad online. Payment in advance, covering number of insertions, is required.

30 words or less *(per insertion)*.....$40
.....*40¢ each additional word*

MDS Box.....$15 extra

Immediate Web posting .....$15 extra

Reply to a classified advertisement by addressing the envelope as: Journal Classified Box ___, Two Willow St., Suite 200, Southborough, MA 01745.

DEADLINES February 1 *(spring issue)*, May 1 *(summer issue)*, August 1 *(fall issue)*, November 1 *(winter issue)*.

Upon publication, all classified advertisements are posted on the MDS Web site at ***www.massdental.org***.

Although the Massachusetts Dental Society believes that advertisements published in the JOURNAL are from reputable sources, the Society neither investigates the offers made nor assumes responsibility for them. The MDS reserves the right to decline to accept and to withdraw advertisements at its discretion.

Equipment to Buy or Sell

FOR SALE—Kodak Digipan; mint condition; $19K. Please call (617) 731-8100.

Opportunities Available

PEDIATRIC DENTIST WANTED to join our Sudbury multispeciality group practice. Please send resume to ***sudburydmd@verizon.net*** or (978) 443-6941.

HIGH-END PROGRESSIVE GENERAL PRACTICE seeking general dentist associate to join our team on Mondays and Fridays with potential for full-time employment. Brand-new office, 30 miles south of Boston in Duxbury. Please fax resume to (781) 934-5511 or email ***jennifer@duxburydentistry.com***.

ASSOCIATE PART-TIME—GENERAL PRACTICE seeking part-time associate. Position has the possibility for full-time and buy-out/buy-in. All phases of dentistry in family-oriented practice situated in Southeastern MA. Please fax resume to (508) 947-8405.

ASSOCIATE PARTNER—LONGMEADOW, MA. Well-established (30 years) general practice in professional building. Five ops/2,014 sq. ft.; CEREC; Digital X-rays; Dentrix; A-dec chairs and units. Experienced, loyal team. Seeking associate for five-year transition buy-in and eventual buy-out. Visit ***www.transdent.com*** or call Mercer Transitions at (800) 588-0098.

ASSOCIATE PARTNER—SWAMPSCOTT. Oceanside family-oriented practice near Boston emphasizing perio, prosthetics, cosmetic dentistry, CEREC, digital radiography, lasers, advanced hygiene. Seven ops/2,000 sq. ft. Five-year buy-in. Mercer transition plan and mentorship opportunity. Terrific hygiene department. Visit ***www.transdent.com*** or call Mercer Transitions at (800) 588-0098.

ASSOCIATE WITH OPPORTUNITY FOR PARTNERSHIP OR BUY-IN in a busy Northampton seven-chair general dental office. Fully computerized modern office that handles prosthodontics, periodontics, endodontics, cosmetic, and implant dentistry. Please fax resume to (413) 586-7335.

WANTED: PERIODONTIST, oral and maxillofacial surgeon, orthodontist, and endodontist to join our new medical wellness building on VFW Parkway in West Roxbury. Your speciality will complement our general dentist and dental imaging tenants. Visit us at ***www.scottcos.com*** or call Irv Busny at (617) 469-6777.

GENERAL DENTISTS, ORAL SURGEON, HYGIENISTS, and dental assistants, full- and part-time, needed for busy multilocation group practice south of Boston. Excellent clinical and interpersonal skills required. Experience preferred. High earnings potential for the right people. Please reply to MDS Box 1174.

MODERN PROGRESSIVE PRACTICE in Southern Worcester County is seeking a well-qualified general dentist for a full-time position. Objectives: quality dentistry, high production potential, compatibility with doctors and our highly trained staff. Partnership potential. Great compensation includes medical, dental, and retirement benefits. Please call (508) 347-9336.

ASSOCIATE—Full-time. For a quality and caring, fee-for-service family practice. Great office. Great staff and happy atmosphere. Please fax your resume to (413) 532-1400 or mail to Oakdale Dental Associates, 1820 Northampton St., Holyoke, MA 01040.

ORAL SURGEON—MASSACHUSETTS SUBURB, only 30 minutes from downtown Boston. Our successful, multispecialty practice (pediatric dentistry, orthodontics, and general dentistry, including endodontics and periodontics) is looking for a highly qualified oral surgeon to join our growing office. This will be a great opportunity to build your own practice within our practice. Guaranteed referrals, excellent compensation and benefits. If interested, please call Eileen Racioppi, practice administrator, at (508) 668-8008 or email your resume to her at ***eracioppi@dentalassociatesofwalpole.com***.

DISABLED DENTIST NEEDS HELP! General dentist needed part-time for busy urban practice in Jamaica Plain. One day per week to start. Excellent opportunity. Possibility of associateship/partnership. All phases of dentistry. Please call (617) 524-7860.

PERIODONTIST—One day a week for a quality and caring, fee-for-service family practice. Please fax your resume to (413) 532-1400 or mail to Oakdale Dental Associates, PC, 1820 Northampton St., Holyoke, MA 01040.

FAMILY DENTAL PRACTICE IN NORTH ANDOVER seeking part-time orthodontist. The practice has a nice mix of age and population, and a great dynamic. Please fax your resume to (978) 681-8539.

PART-TIME OR FULL-TIME GENERAL DENTIST needed for busy MetroWest state-of-the-art practice. Incredible opportunity for great dentist who is looking for future equity position and ownership. Please phone (617) 605-5279 or email ***jokedoctor@comcast.net***.

ORTHODONTIST—SUBURBAN BOSTON. Pedo-ortho practice with expanding patient base generating consistent referrals. An orthodontist's dream. Must be top quality, sensitive, and caring. Email ***d139@aol.com***.

WAKEFIELD GENERAL PRACTICE SEEKING ENDODONTIC specialist. Quality GP seeking part-time endodontist. Please call Dr. Kravitz or Anita at (781) 245-7714 or email ***jeffdds@aol.com***.

OPPORTUNITIES AVAILABLE—Gentle Dental. Our 22 multispecialty group practices are always looking for exceptional general dentists and specialists part-time and full-time. Equity available to all directors. Fax resumes to (781) 647-1086 or email directly to Dr. Sam Shames at ***sam@gentledental.com***. Please visit our Web site at ***www.gentledental.com***.

VOLUNTEER ABROAD. Dentists, hygienists, nondental volunteers needed. Volunteer while traveling to Guatemala, Nepal, Vietnam, and India. (800) 543-1171 or ***www.himalayandental.com***.

GENERAL DENTIST, 1-2 days/week for busy practice in Framingham. Excellent atmosphere. Please email ***dentist4254@hotmail.com***.

Opportunities Wanted

PERIODONTIST—Seeking part-time employment in specialty/general practice. Proficient in traditional perio, implants (ITI, Nobel, 3i), bone grafting, etc. Emphasis on cosmetic cases. Please email ***jpastagia@gmail.com*** or call (617) 416-8886.

MARTHA'S VINEYARD—GENERAL DENTIST PART-TIME. Locum Tenens 6/07–10/07. Retired military plus four years of private practice experience. Advance trained and boarded comprehensive dentist. Master's in health care/business administration. Maintain your practice while you enjoy additional time off this summer. Please respond to MDS Box 1184.

Practices and Offices For Sale or Rent

WELLESLEY HILLS—SPACE TO SHARE in prosthodontic office. Fully equipped modern office. Prime location, plenty of parking. Call (857) 636-0058.

SINCE 1981—Jim Kasper Associates, LLC. Finest selection of dental practices available for sale. Accurate practice valuations and confidentiality assured. Call us to explore your transition options. Practices available throughout the state. Visit our Web site for the latest listings at ***www.jimkasper.com*** or call (603) 355-2260.

BROCKTON—GREAT LOCATION for lease. Former medical office. Perfect layout for dental office. 2,250 sq. ft. Adjacent to Brockton Hospital. Ample parking. Available immediately. Call Richard at (781) 447-1111.

BROOKLINE GENERAL DENTIST LOOKING TO SLOW DOWN. My office would be available 3-4 days per week. Attractive office in desirable Beacon Street location. Ideal person would have their own practice with desire to reduce overhead and eventually buy me out in 1-2 years. Please respond to MDS Box 1185.

BACK BAY—SPACE AVAILABLE in established and respected general practice. Desirable location at corner of Boylston and Berkeley Streets, a commercial/high-end retail neighborhood. Modern equipment, beautifully furnished. Flexible days and hours. Call Dr. Budd at (617) 536-7730.

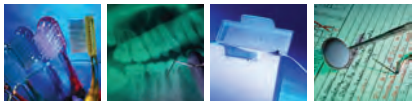
MASSACHUSETTS—PERIODONTAL PRACTICE FOR SALE. Metropolitan Boston, south suburban. Well-established 40-year practice. Four full operatories with three others hooked up with all utilities ready to equip. Large waiting room, business offices, private office, sterilizing room, and lab. 1,800 sq. ft. on mass transit lines in professional office building. Handicapped accessible. Plenty of parking. Interested in fast sale. Retiring. Please reply to MDS Box 1176.

Services

DENTIST-ANESTHESIOLOGIST providing mobile office-based sedation/general anesthesia starting July 1, 2007, in Massachusetts and Rhode Island. Please contact Patrick McCarty, DDS, at (310) 403-7857 or email ***mccarty.dental.anesthesia@gmail.com***.

BUYERS AND SELLERS. Professional Dental Placements has now expanded into brokering dental practices. We are offering the same personalized service, discretion, and integrity, which has been our trademark for 12 years. Please call Dr. Mel Leventhal or Barbara R. Leventhal at (781) 784-7393 or email ***pdpdmd@aol.com***. We are pleased to announce the recent transition of the dental practice of (1) Dr. John D'Orlando of Stoneham to Dr. Ziba Shirazi; (2) Dr. Joel Black of Beverly to Dr. Manjula Battaluri; (3) Dr. Richard Citron of Brookline to Dr. Kenneth Krowne.

Advertiser Index



ERIC K. CURTIS, DDS, ELS
Dr. Curtis is past president of the American Association of Dental Editors.

AN ACCURATE PORTRAYAL

Don't Go Breaking My Heart, a made-for-TV movie, shows a male dentist hypnotizing a woman. He flashes a light in her dull, unblinking eyes. He waves around a pencil-like wand equipped with a sparkly crystal where the eraser should be. "You're getting sleepier," he intones. Then, instead of firing up the handpiece, this dentist orders his zombied-out patient to invite him over for dinner.

Maybe it wasn't a big deal, but I've lived through *Marathon Man*, a movie that burned a scorch mark in the moviegoing imagination big enough to keep patients shying away from their dentists for 20 years.

Why is it so hard for the entertainment moguls to get their dentist portrayals right? The short answer is, because they don't want to. Movies, television shows, and novels may distort dentistry on purpose to suit the narrative needs of amusement. Dentistry is an easy target. For one thing, there's the schadenfreude thing: the public is entertained by watching other peoples' pain. For another, satire is an equalizer, diffusing fear and making authority figures less intimidating.

Dentistry is an easy target. For one thing, there's the schadenfreude thing: the public is entertained by watching other peoples' pain.

But there may be at least three other reasons dentists get misrepresented—because of things we dentists do ourselves.

First, we work alone. Dentists seldom practice in a hospital or in group settings. So no one is around to accurately observe.

Second, we are secretive. It's not that we have something to hide, but rather that we tend to seek shelter, like soldiers in a foxhole. Have you ever hesitated before revealing your profession at a cocktail party? Any dentist a year or two out of school has already spent more than a few social evenings performing impromptu consultations and defending root canal fees.

Third, we want our efforts to look effortless. We attract patients with a gentle, painless touch. But we may inadvertently give the wrong idea. A teenager recently said to me, "Dentistry's easy, right? I mean, once you get through dental school, you have it made."

Dentistry may never get a Marcus Welby, and George Clooney probably won't ever play a prosthodontist in a movie. But someday, maybe the entertainment industry could get dentistry right. We could help.

Complaining won't do it. A few years back, representatives of organized dentistry wrote a letter to movie studio executives protesting the increased smoking depicted in the movies. The movie executives laughed.

If we want to get an accurate reading on dentistry, we should *give* one. We ought to practice being open and forthright.

Dentistry is difficult. It is medicine that involves a lot of surgery, which sometimes can go wrong. The body is incredibly complicated, especially the head, which houses an enormous concentration of nerves. The mouth houses organs that heal poorly.

Next, we need to stand up straight. "My son's a very successful oral surgeon," a mother boasted to a young woman she met on the subway in a nationally televised shampoo commercial a few years ago. We should be as proud of dentistry as our moms are. Dentistry is expensive, but it is not overpriced. Good dental care is a blessing to the public.

One more thing: We can relax and find the humor in dentistry. A sheet-metal sign shaped like a molar hanging at a dental office in New Mexico is a favorite of mine. Creaking in the breeze, it startles with its punning ironies. It reads, going down the roots, "Less pain dentist . . . purse extractions, X-rated rays, London bridges, British crowns, land fillings, sports caps, hot plates."

That doesn't mean we can get *too* relaxed. Screenwriter William Goldman reportedly credited his idea for the evil Nazi dentist in *Marathon Man* to a suggestion from his own periodontist. ■

VOLUNTEER OPPORTUNITIES

SERVING YOUR COMMUNITY

Mobile Access to Care (MAC) Van

Get Involved! You may volunteer to treat children on the MAC Van or in your private office. Find more information about the MAC Van Program online at ***www.mdsfoundation.org***. Be sure to submit your personal volunteer customization form, which you will find online.

Questions? Call Ellen Factor, **800-342-8747, ext. 228.**

MassDentists CARE

The **MassDentists CARE** (**C**ombining **A**ccess with **R**educed **E**xpense) program is the MDS-sponsored reduced-fee program that helps children in need. Sign up today to be a provider. Applications are available online at ***www.massdental.org***.

Questions? Contact Michelle Sanford, **800-342-8747, ext. 253.**

MassDentists C-A-R-E

JUST IMAGINE...

Yankee Dental Congress® 33

Yankee Dental Congress® 33

There are many ways to volunteer at Yankee Dental Congress. Currently, opportunities exist for Presiding Chair (PC) for Scientific Sessions at YDC 33 in January. The Presiding Chair introduces the speaker, asks that evaluation forms be completed, and gives out the "Secret Code Number" for CEUs at the end of the session.

Questions? Contact Tammy Putney, **800-342-8747, ext. 256.**

Council and Committee Positions

The voluntary structure of the Massachusetts Dental Society enables any member to have an impact on the Society and the profession. As a volunteer, you have a direct effect on shaping the Society's policies and programs.

Find out how you can participate by visiting the MDS Web site at ***www.massdental.org/members/councils***.

Questions? Contact Marc Kaplan, **800-342-8747, ext. 243.**

Eastern Dentists Insurance Company

In life, two things are certain. For dentists, there are three.

The old adage about death and taxes extends to claims as well if you are a dentist. Statistics reveal that over a 30-40 year career, dentists will most certainly experience at least one malpractice claim. More likely, it could be three or four.

Whom do you want on your side when adversity strikes?

EDIC has never settled a claim without an insured's permission. As dentists ourselves, EDIC provides more than just malpractice insurance. Our insureds benefit from:

- Our responsive 800 number hotline for questions, incident consultations, or claims reporting;
- Aggressive defense of dentists' reputation, utilizing top experts and excellent defense counsel;
- Collegial support.

EDIC, "by dentists for dentists®". Demonstrating the true value of collegial support.

ENDORSED BY Massachusetts Dental Society

ENDORSED BY Rhode Island Dental Association

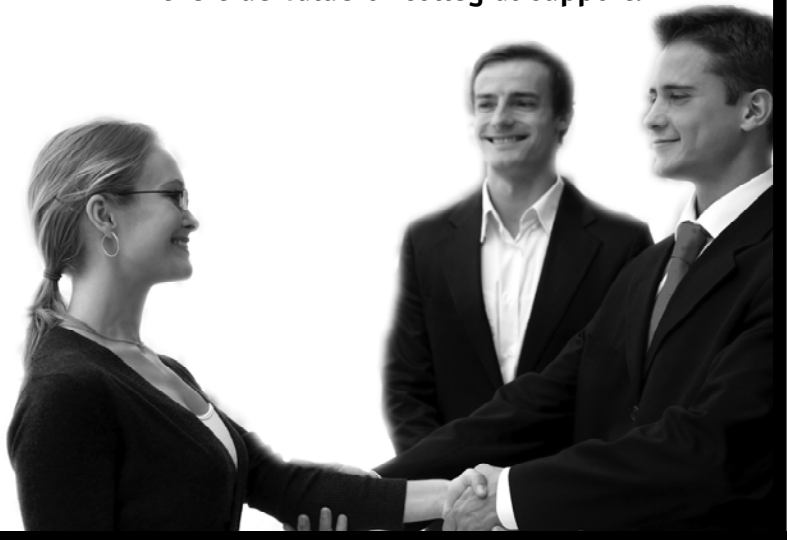
Call us today at 1-800-898-3342
Visit us at www.edic.com

A dental society risk retention group.

edic® Eastern Dentists Insurance Company — A Dental Society Risk Retention Group

EDIA Eastern Dental Insurance Agency

EDFS® Eastern Dental Financial Services



200 Friberg Parkway, Suite 2002 • Westborough, MA 01581