

# JOURNAL *of the*

MASSACHUSETTS DENTAL SOCIETY

Summer 2009



Who Will  
Provide Care  
for Adults with  
Special Needs?

## LEVELING THE PLAYING FIELD

**W**E ARE FORTUNATE THAT ORGANIZED DENTISTRY IS VIGILANT AND PROACTIVE REGARDING THE many issues confronting our profession. One of the areas of concern that bears watching is our relationship with the insurance industry.

Recently, the Massachusetts Dental Society petitioned successfully to the State Insurance Commissioner to eliminate the 5 percent discount by Delta Dental and to change the methodology by which Delta caps the maximum allowable fees. This will have a positive effect on the practice of dentistry. This success was the result of nearly five years of study and efforts by a task force set up by the MDS House of Delegates in 2004. The task was cumbersome, but it is certainly in dentistry's best interest to be cognizant and monitor the actions of insurance companies.

The insurance industry plays an important role in improving the availability of dental services to the public. Many people would not seek care if they did not have the assistance of dental insurance. But make no mistake about it—dental insurers are in business to make money, not to provide care.

Another example of organized dentistry's vigilant efforts to protect its members' interests is in the area of antitrust legislation. Nearly 65 years ago, the insurance industry (including health insurance) successfully lobbied for an exemption from the federal antitrust laws. This exemption is the McCarren-Ferguson Act, and it has far-reaching, anticompetitive, industry-wide effects. There are ramifications from this act in that dentists, their patients, and the public health are all negatively affected. Essentially, McCarren-Ferguson diminished competition among dental insurers. Antitrust laws forbid dentists from discussing fees and from collaborating in anticompetitive practices, thus ensuring healthy competition. It is the American Dental Association's contention that insurance companies should also not be exempted from these antitrust laws, and a change would allow health care consumers to benefit from increased market competition.

There are strong allegations of conflicts of interest in the way different and competing insurance companies share data when they set usual, customary, and reasonable reimbursement rates for out-of-plan health care providers. This sharing of data is so anticompetitive that consumers are not likely to see much innovation and variety in the marketplace. If the insurance companies set rates and then design coverage according to antitrust laws, they would have to compete for purchasers of group policies. This competition could have the effect of keeping rates lower and improving the benefits offered. As a further result, purchasing policies would be more attractive to groups, and thus more consumers would have insured care available. If a higher number of consumers were to have plans with decent provisions for care, more actual dental care would be sought, thereby benefiting the dental providers as well as the public.

By advocating for changes that will level the playing field, the ADA is being proactive and is protecting the public against the unregulated practices of a very powerful lobby, the insurance industry.

Meanwhile, the United States House of Representatives is currently considering legislation in HR1583 to repeal the 65-year-old McCarren-Ferguson Act. If passed, the repeal would benefit our profession and our patients—a definite win-win situation.

Contact your congressman and let your voice be heard. ■



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## WHAT YOU DON'T KNOW CAN HURT YOU

**Y**OU'VE PROBABLY HEARD THE SAYING "WHAT YOU DON'T KNOW can't hurt you," but when it comes to your finances, ignorance is not necessarily bliss. It's easy to make bad financial decisions when you lack sufficient information or you are misinformed. By the time you realize your mistake, it's usually too late to correct it. Here are several common mistakes that can be avoided with just a little bit of forethought.

### Naming the Wrong Insurance Beneficiary

Life insurance has many benefits. Among them is the fact that death benefits are generally paid directly to the beneficiary you name in the policy without passing through probate. But what happens if the beneficiary you name is unable to accept the death benefit, because he or she is a minor, deceased, or incompetent? In these circumstances, unless you've named an alternate beneficiary, the life insurance proceeds will be subject to all of the expenses and delays associated with settling an estate through probate.

What can you do before it's too late? Review your life insurance beneficiary designations at least annually to be sure the proceeds will pass to the proper beneficiary without the involvement of probate. Also, consider adding at least one contingent or alternate beneficiary in case the primary beneficiary is unable to receive the proceeds.

### Selecting the Wrong Pension Option

If you're lucky enough to have an employer-sponsored pension for your retirement, the distribution choices you make can't be changed, regardless of whether your circumstances change. Before making your choice, get all of your plan's options from the plan administrator and review them with a financial professional who can help you crunch the numbers. Estimate your retirement income needs, then determine what the best strategy is for you and your family.

What can you do before it's too late? If you're married, you are required to take a joint and survivor option, unless your spouse waives his or her rights to your pension. If you elect the single life option, your payments will be larger—but at the expense of a future spousal benefit. If you choose the single life option, make sure you have plenty of other income or life insurance to replace the pension for your surviving spouse.

### Owning Assets Jointly

Owning assets jointly often can be a good strategy to avoid probate or minimize estate taxes. However, this form of asset own-

ership also has disadvantages. The joint owner has equal rights to the jointly owned asset, meaning he or she can withdraw from a joint bank or brokerage account or sell his or her interest in the asset without your consent. In addition, adding someone's name to an asset may be considered a gift, subject to possible gift taxes. And owning assets jointly exposes those assets to the creditors of your joint owner. Finally, with respect to long-term care planning and Medicaid qualification, adding a joint owner can negatively affect your Medicaid eligibility.

What can you do before it's too late? Consider the ramifications of joint ownership carefully before implementing this strategy. If your intent is to leave the asset to the joint owner, alternatives such as payable on death accounts, trust designations, or life estates may accomplish your goal and protect your interest in the asset at the same time.



### Underinsured Homes

Imagine this scenario: You just suffered through a terrible fire that destroyed your home and most of its contents. You get an estimate on the cost to rebuild your home and file a claim with your homeowner's insurance carrier. To your shock, you find that they are not going to cover the entire cost to rebuild; you thought your policy covered the full replacement cost of your home. However, the policy actually provides extended replacement cost, which offers up to 120 percent of the policy's face amount—not enough to cover all of the costs to rebuild your home.

What can you do before it's too late? Review your policy at least annually and make sure the face amount is enough to cover the cost to rebuild your home should the unthinkable occur. That means you need to know the approximate cost to rebuild, including any additions and improvements you made to the home. Also, take into consideration increasing costs of materials and labor.

### Other Common Mistakes

- Failing to provide for financial loss due to a non-work-related disability
- Miscalculating how much life insurance you need
- Owning too much stock in your employer-sponsored retirement plan
- Underestimating how long your retirement may last
- Overestimating the annual rate of return you'll earn on your investments
- Trying to save for your children's college education at the expense of saving for your retirement ■



**GEORGE GONSER, CEO**

*Mr. Gonser is the chief executive officer of MDSIS.*

## CONSUMER-DIRECTED HEALTH CARE— THE FUTURE OF HEALTH CARE?

**W**E HAVE ALL EXPERIENCED THE increases in health insurance premiums. Since the year 2000, health insurance renewal premiums have soared over 100 percent or more. This has put a real strain on businesses and individuals. The end result? Employers have been reducing benefits, shifting more costs to the employees, or, in some cases, dropping health insurance coverage entirely. To date, only a few of our nearly 2,000 clients have dropped their insurance plans altogether, but the financial strains of our economy have forced companies to take a hard look at the future of their health insurance plans.

In or around 2000, most of the group insurance plans were co-pay-based. The average monthly premium was in the mid-\$200 level for an individual, and the medical trend (the percentage of increase in medical costs from one year to the next) was under control in single digits. Now in 2009, the average individual plan is in excess of \$450 per month and the medical trend is in double digits. What have those companies faced with steep increases done to stem the rising insurance premium tide? Besides the three results mentioned above, many companies (more than 40 percent of our book of business and rapidly increasing) have shifted down to a deductible-based consumer-directed health plan (CDHP).

Why the shift to CDHPs? To many, CDHPs represent the insurance industry's best (and some say last) chance to control costs and slow down the increases for the insurance plans. CDHPs also raise the consumer's awareness of the real costs of care. By being aware of these costs and taking a more involved role in their health care decisions, the hope is that consumers will be more cost-effective in their health care spending. With CDHPs, there is a greater potential for consumers to dip into their own pockets in the form of deductibles. Therefore, consumers have an incentive to be educated and efficient utilizers of health care. So if consumers have to pay more, will it force them to be better health care consumers? The insurance industry is banking on it.

CDHP plans with deductibles of \$500 or more include a preventive component as part of the insurance plan and access to information-based tools to aid consumers in their health care decision making. Another component is the deductible funding by the employee, the employer, or a combination. CDHPs work



best with some percentage of deductible funding by the employer.

Switching to a CDHP is a philosophical change from the co-pay-based norm. For nearly 40 years, most health insurance plans were co-pay-based, with few to no deductibles. As premium prices have risen, so have the amount and quality of deductible-based plans. People are used to paying a \$15 co-pay and not having to worry about anything else. Now, if a doctor orders an X-ray

or MRI, the consumer will be responsible to pay some or all services as they may apply to the deductible. This represents a major change from the norm. You and your staff will have to be educated and informed as to these changes. The carrier is requiring you to be more involved in the process. If you don't pay attention, you may be forced to pay a large bill.

So how do you make these changes? You need to have the tools to get educated. This is where my biggest criticism of the CDHP migration lies. There are still many gaps in the information provided from insurance companies and providers to help educate consumers. Why? Among many of the reasons, there are contractual issues. Optimally, there will be transparency in price and quality of plans. But for now, it is a work in progress and, it should be noted, this is standing in the way of more people signing up for CDHPs.

Health reimbursement arrangements (HRAs), health savings accounts (HSAs), and flexible spending accounts (FSAs) also play a large part in CDHP plans. HRAs, HSAs, and FSAs all are vehicles used to fund CDHP deductibles. Some are "use it or lose it," some allow for carryover provisions, and some provide protection to businesses. All have pros and cons for each and every business involved, all of which must be considered in your health insurance analysis.

A few years ago, I wrote that CDHPs were on the way. Well, they are here. These innovative plans require more consumer involvement, but they also represent lower premiums, as well. As President Barack Obama continues to push for national health care reform, CDHPs are a part of all of the proposals being considered. It is time to look into these plan types for now and for the future.

If you would like to learn more about CDHPs, contact MDS Insurance Services, Inc., at (800) 821-6033 or email us at [mdsis@mdsis.org](mailto:mdsis@mdsis.org). ■

# MDS Beacon Hill Day 2009

The MDS's seventh annual Beacon Hill Day was held on Wednesday, May 20, 2009, and more than 80 dentists and dental students traveled to the State House to spend the day discussing oral health issues with their elected officials. The day began with a Morning Briefing Session at Suffolk University Law School sponsored by the MDS-PAC/MDS-People's Committee. This important addition to the Beacon Hill Day Program allowed participants to learn more about the MDS legislative agenda and effective techniques for communicating with legislators.

The group then walked to the State House for a luncheon with legislators. Dr. David Samuels, MDS president, presented Representative John Scibak and Senator Harriette Chandler with certificates of appreciation for their dedication to improving the oral health of the citizens of the Commonwealth and for their commitment to working with the members of the Massachusetts Dental Society to achieve that goal. Lieutenant Governor Tim Murray delivered the keynote address to attendees, encouraging members to stay active in grassroots efforts.

The participants spoke with legislators and aides about the Society's active legislative agenda for the 2009–2010 session, including H.444—An Act Relative to Pupil Dental Health, which requires that all public school students, prior to entering kindergarten, show certification that they have received a dental exam within the past year. The MDS is also seeking passage of S.891—An Act Relative to Volunteer Dental Licenses, which would allow retired dentists to donate their time and expertise to a free-care dental program or clinic, and S.805—An Act Relative to Oral Injuries, which calls for the Department of Public Health to conduct a comprehensive study of oral injuries in school sports. In addition, S.448 & H.939—An Act Relative to Anesthesia Coverage for Children Hospitalized for Dental Treatment would provide insurance coverage for children receiving dental treatment under anesthesia. For more information about these bills, please log on to [www.massdental.org/legislation](http://www.massdental.org/legislation).



# 145th MDS House of Delegates Annual Session



Dr. Milton Glicksman (right) passes the gavel on to newly inducted MDS President Dr. David Samuels.



Dr. David Samuels makes his presidential address.



**2009-2010 MDS Officers** (above). Standing (left to right): Drs. Michel Jusseaume, Charles Silvius, Thomas Torrisi, Charles Gagne, and Anthony Giamberardino; seated (left to right): Drs. Anthony T. Borgia, David Samuels, John Fisher, and Milton Glicksman.



MDS Past Presidents gathered for the annual Past Presidents Breakfast, which was held before the start of the Annual Session.

**Guest Board Members** (from top): Drs. Mario Abdennour, Jo Ann Foley, Neela Gandhi, and Joy Kasparian-Federico.

The 2009 House of Delegates was held Friday, May 15, 2009, at the Burlington Marriott with approximately 160 MDS member delegates, representing all 13 districts, in attendance. Speaker of the House Dr. Thomas Torrisi presided over his second Annual Session, where nine resolutions were passed, including two regarding redistricting the Massachusetts Dental Society. (For a complete list of the 2009 Resolutions, please visit [www.massdental.org/hod](http://www.massdental.org/hod) or see the July-August 2009 issue of MDS CONNECTION.)

The House of Delegates inducted a new slate of MDS officers for the 2009-2010 term: David Samuels, DMD, a periodontist based in Andover, was sworn in as MDS president; John Fisher, DDS, a general dentist in Salem, was named president-elect; Anthony (Tom) Borgia, DDS, an endodontist in Sandwich and former trustee of the Cape Cod District, was elected vice president; and Michel Jusseaume, DDS, a general dentist in Westport and former trustee of the Southeastern District, was sworn in as assistant treasurer. Additionally, four new trustees joined the Board of Trustees: Daniel Mahoney, DDS (Cape Cod District); N. Peter Hjorth, DMD (North Shore District); Raymond Martin, DDS (Southeastern); and Edward J. Welch, DDS (Valley District). Dr. Mahoney rejoins the Board four years after he completed his last term as secretary.

This Annual Session also welcomed four new Guest Board Members: Mario Abdennour, DMD; Jo Ann Foley, DDS; Neela Gandhi, DMD; and Joy Kasparian-Federico, DMD. The Guest Board Member Program was created in 2006 to expand the diversity and multicultural demographics of the Board to better reflect the membership of the Society and to encourage involvement in the MDS and organized dentistry. Each governing year, four MDS members are selected to attend Board of Trustee meetings and participate in discussions in a nonvoting capacity. (For more on the new MDS Trustees and Guest Board Members, visit [www.massdental.org/leadership/newboard](http://www.massdental.org/leadership/newboard) or see the July-August 2009 MDS CONNECTION.)

The two resolutions regarding redistricting—8-09, Amendment to the MDS Bylaws to modify “Chapter II, Component Societies, Section 30,” Related to Redistricting; and 9-09, Creation of a District Reorganization Task Force to Study the Current District Structure in Massachusetts and Report Back to the 2010 House of Delegates—were the center of much of the day’s focus and a main topic of discussion, as delegates from across the state argued passionately in favor of or against the resolutions. Resolution 8-09 generated the most discussion both in Reference Committee and on the House floor, with members from the Metropolitan District voicing their opposition to the proposal en masse. After a tight vote that required a recount, the resolution was passed by a margin of 80 in favor to 38 opposed, a number slightly more than the two-thirds vote required.

This year’s Annual Session featured another “mega” discussion, this time around the topic of mid-level providers. Dr. Jamie Sledd, immediate past president to the Minnesota Dental Association (MDA) and chair of the Oral Health Practitioner Task Force for the MDA, spoke at length about how mid-level providers can become a valuable part of the dental team. Minnesota supports the concept of the mid-level provider, on the basis that only the dentist should be allowed to examine, diagnose, and treatment plan for a patient. As a member of the Minnesota delegation that visited dental therapy programs in Canada, New Zealand, and the United Kingdom, Dr. Sledd discussed how mid-level providers are utilized in those countries.

Kanchan Ganda, MD, and Gülsün Gül, DDS, Tufts University School of Dental Medicine faculty members, were honored with the 2009 Richard Allard Award, which is presented annually by the Committee to Prevent Abuse and Neglect. Drs. Ganda and Gül were recognized for their work with the Tufts Dental Outreach to Survivors Program, which provides referrals for free, confidential dental care to survivors of domestic violence.

As in the past, 50-year members were honored at a luncheon for completing 50 years of MDS membership. ■



Nearly two dozen of the 50-Year Members attended a luncheon in their honor at the House of Delegates.

## MDS 50-Year Members

Clifford J. Audette, DDS  
Laurence Bedell Jr., DMD  
Erwin Brilliant, DDS  
Charles J. Cappetta, DDS  
Joseph H. Ciampa, DMD  
Rudolf B. Ciani, DDS  
Robert L. Cieri, DMD  
Adolph A. Cura, DDS  
Parviz Darviche, DMD  
Otis K. Dewan Jr., DMD  
Joel P. Douglas, DMD  
Paul D. Duval, DDS  
Thomas G. Foley, DMD  
Vincent L. Genua, DMD

Ronald W. Gintowt, DDS  
William P. Glynn, DMD  
Richard A. Goodman, DDS  
Donald J. Greeley Sr., DMD  
Yale A. Hirshberg, DDS  
Terrence D. Hoover, DMD  
Paul J. Kalis, DMD  
Anthony R. Kopas, DDS  
Thomas J. Lamson, DMD  
A. Louis Laudani, DDS  
Robert E. Losert, DMD  
Thomas H. McCourt, DDS  
Guy A. McGarry, DDS

Joseph H. McLaughlin, DDS  
Melvin Miller, DMD  
Francis X. Moran, DDS  
Gary J. Moskowitz, DMD  
William L. Nannery Jr., DMD  
Francis D. Nelen, DMD  
Terrence W.C.  
O’Shaughnessy, DDS  
William M. Ostaski, DDS  
Stephen P. Pannes, DDS  
John S. Parianos, DDS  
Howard M. Paul, DMD  
Nicholas J. Pellegrino, DMD

W. Reid Pepin Jr., DDS  
Socrates J. Philopoulos, DDS  
Thomas R. Powers, DMD  
Joel M. Prives, DMD  
Barry Puchkoff, DMD  
Saul Quint, DMD  
John B. Register, DDS  
Elliot W. Salloway, DMD  
David S. Samost, DDS  
H. Arto Shahrik, DMD  
Robert O. Smith, DMD  
Ernest M. Wallent, DMD  
L. Richard Yeager, DDS  
Joseph R. Zilewicz, DDS



Dr. Jamie Sledd, immediate past president of the Minnesota Dental Association, speaks on the mega-discussion topic of mid-level providers.



Dr. Robert Faiella, ADA First District Trustee, presents outgoing MDS President Dr. Milton Glicksman with a plaque recognizing him for his term.



# Adults with Special Needs and Proper Dental Care

**H. BARRY WALDMAN, DDS, MPH, PHD  
STEVEN P. PERLMAN, DDS, MSCD, DHL (HON.)  
DEBRA A. CINOTTI, DDS**

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*Dr. Perlman is global clinical director for the Special Olympics Special Smiles Program, clinical professor of pediatric dentistry at Boston University Goldman School of Dental Medicine, and a pediatric dentist in Lynn.*

*Dr. Cinotti is clinical associate professor and associate dean for admissions and student affairs for the department of general dentistry at Stony Brook University.*

## Special Olympics

**T**he Special Olympics was founded by Eunice Kennedy Shriver in 1968 and has grown into a global movement involving 2.5 million athletes, in addition to millions of volunteers, family members, and friends. The international organization provides year-round sports training and athletic competition in a variety of Olympic-style sports for children and adults with intellectual disabilities. The year-round programs provide opportunities for participants to develop physical fitness, demonstrate courage, experience joy, and participate in the sharing of gifts, skills, and friendship with their families, other Special Olympics athletes, and the community. Most important has been the opportunity to demonstrate what people with intellectual disabilities can do, rather than what they can't do.

It was in the early 1990s that Eunice Shriver and her brother, Senator Ted Kennedy of Massachusetts, became increasingly aware of the inability to find a dentist who would provide restorative services for their sister, Rose Marie (known as Rosemary), an adult with an intellectual disability. A previous review by a hospital-based dental team had suggested the extraction of all of her remaining teeth—an all-too-often dental treatment plan for individuals with intellectual disabilities. The plan was unacceptable. Finances were not a concern; it was a matter of locating a practitioner capable of and willing to provide restorative care.

## A Historic Dental Appointment

It was at this point that Rosemary, then in her mid-70s, was referred to one of the coauthors of this article, Dr. Steven P. Perlman, a private practicing pediatric dentist located more than a thousand miles away, who emphasized services for individuals with special needs. It was especially interesting to the Shriver/Kennedy families that pediatric dentists were the dental professionals who most often were called upon to provide the care, not only for youngsters, but for adults with special health care needs. Rosemary received the needed restorative treatment under general anesthesia because of the complexity of care; not one tooth was extracted.

A later meeting between Eunice and Sargent Shriver, Eunice's husband, and Dr. Perlman introduced the Shriver-Kennedy family to the realities of the widespread dental and general health needs of children and adults with intellectual disabilities, the problems of accessing care, and finding clinicians who had received training and were willing to provide care for an adult with special needs.

## Special Olympics and the Healthy Athletes Program

It was the dental care of a 74-year-old with an intellectual disability by a *pediatric* dentist that served as the catalyst to broaden the Special Olympics to include the Healthy Athletes initiative. The Healthy Athletes Program was designed to help Special Olympics athletes improve their health and fitness, leading to an enhanced sports experience and improved well-being. The initiative now includes: Fit Feet, FUNfitness, Healthy Hearing, Health Promotion, Opening Eyes, Medfest, and Special Smiles. Volunteer health care professionals and students are trained to provide the screenings in an effort to educate the professional community about the health needs and abilities of persons with intellectual and developmental disabilities. The Special Olympics Special Smiles Program provides oral health evaluations, fabrication of mouthguards, oral health education, and referrals made to community dentists for needed care. In addition, a major national and international effort is carried out to encourage dental practitioners to provide care to youngsters and adults with special needs.

## Increasing Numbers and Living Arrangements

The reality is that the number of adults with disabilities has increased as a result of higher initial survival rates, improved medical management resulting in longer life expectancies, and the increased likelihood of acquiring chronic disabilities later in life. It is now estimated that 10 percent of the population have a severe disability.<sup>1</sup>

By the beginning of this decade, more than 6.5 million children with disabilities (11 percent of all public school children) were receiving an education

under federal legislation (Public Law 94-142—Individuals with Disabilities Education Act, or IDEA). This 1975 legislation laid out the rights of children with disabilities to attend public schools, receive free services designed to meet their unique needs, and learn in regular education classrooms with nondisabled children to the greatest extent possible. It also authorized federal funds to cover some of the costs of these special services. Each year, more than 100,000 of these children graduate into adulthood.<sup>2</sup>

Evolving residential requirements for individuals with mild and moderate intellectual disabilities and related developmental disabilities (ID/DD) increasingly place these persons of all ages in community settings. Changing social policies, favorable legislation for individuals with disabilities, and class-action legal decisions delineating the rights of individuals with ID/DD have led to deinstitutionalization (i.e., the “mainstreaming” establishment of community-oriented group residences and enhanced personal family residential settings) and the closure of many large, state-run facilities.

## Oral Health Needs

Deinstitutionalization has been related to a worsening of oral health status as many individuals with special needs have lost their institutional-based dental providers and have become dependent on community-based providers. What's more, advocates for the adult-aged blind and disabled report that low-income people with disabilities have more dental disease, more missing teeth, and more difficulty obtaining dental care than other members of the general population.<sup>3</sup>

Prior to deinstitutionalization, pediatric dental specialists (members of an age-defined specialty), in cooperation with general practitioners, provided much of the needed services for youngsters with special needs who remained with their families in the general community. But many of these patients (as happened with Rosemary Kennedy) were “aging out” of the period of life generally served by pediatric dentists. As a consequence of the limited availability of general practitioners providing services to adults with special needs, some pediatric dentists continue to provide care for older patients.

Results from the National Health Interview Survey indicate that the unmet dental care is far higher for children with special needs than for their peers without such needs. According to the survey, 7.3 percent of all parents report that their children have unmet dental treatment needs, compared to 24 percent of parents with children with special needs.<sup>4</sup>

A continuing series of federal agency studies confirm that oral diseases remain highly prevalent and highly variable among various population groups: “racial/ethnic minorities, those with lower incomes, lower educational level, and current smokers across age groups have larger unmet dental needs compared with their counterparts.”<sup>1</sup> There are low dental utilization reports for young children and frail elderly, low-income subpopulations at all ages (despite comprehensive Medicaid coverage for children under age 21), people with limited education, and immigrant/migrant/homeless populations.<sup>5</sup> Comparing reasons for delayed or missed dental care, U.S. residents reported a lack of affordability 1.6 times more often for dental services than for medical care. Additionally, U.S. residents are less than 40 percent as likely to have dental insurance as medical insurance.<sup>6</sup>

The unfavorable findings for the general population pale in comparison with poor oral health, unmet health needs, and lack of access to care for people who are particularly vulnerable because of special health care needs.<sup>1</sup> A report from the National Survey of Children with Special Health Needs emphasized that the health service most commonly reported as needed but not received was dental care.<sup>7</sup>

The reality is that the difficulties faced in securing needed dental services for Rosemary Kennedy in the early 1990s are not that different in this decade—except that there are increased numbers of youngsters and adults with special health care needs.

## Why a Reluctance to Provide Dental Care?

### Education

Repeated studies of graduating dental students indicate limited preparation to provide services for individuals with spe-

cial health care needs. By the end of the 1990s and into the present decade, more than half of the U.S. dental schools provided less than five hours of classroom presentations and about three-quarters of the schools provided 0–5 percent of treatment time for patients with special needs.

In a recent study, half of the students reported no clinical training in the care of patients with special needs and 75 percent reported little to no preparation for care of these patients.<sup>8</sup> Similar results were reported for the education of dental hygienist students.<sup>9</sup> As a result, one should not be surprised that only 10 percent of general dentists responding in one study said they treated children with special needs often or very often.<sup>10</sup>

The Commission on Dental Accreditation responded to these findings with the recent modification in its standards, which now require that “graduates *must* be competent in assessing the treatment needs of patients with special needs.”<sup>11</sup>

In contrast to general dentistry, postdoctoral pediatric dentistry education has played a primary role in caring for special-needs patients of all ages.<sup>12</sup> The assumption of responsibility for adults with special needs by pediatric dentists has resulted in controversy over the appropriate age range of patients to be cared for by pediatric dentists, particularly given these dentists’ limited expertise in providing adult services.<sup>1</sup>

There is a fundamental difference between the medical and dental training that exists at both the pre- and post-doctoral levels in the way that dental and medical trainees engage people as patients. Medical students and trainees routinely observe and experience patients from the pharmacotherapeutic/sociobehavioral perspectives of medical care, as well as from the interventional/objective perspective of surgical care. In contrast, dental students tend to focus exclusively on surgical treatment to the point that the patient’s oral structures, rather than the patient, become the center of their attention.<sup>1</sup> In addition, continuing professional dental education rarely provides additional training regarding vulnerable and special-needs populations.<sup>1</sup>

#### Finances

The Medicaid dental program was established to ensure that needed dental services were obtainable for poor children and adults. The availability of dental services under this joint federal-state financed program, together with the State Children’s Health Insurance Program (CHIP), which covers additional low-income children who do not qualify for Medicaid, is a major determinant in the receipt of services by individuals with special health care needs. Medicaid serves nearly 530,000 individuals with mental retardation/developmental disabilities, at a cost of almost \$52,000 per person per year.<sup>13</sup>

While dental services are required for children under the Early Periodic Screening, Diagnosis, and Treatment (EPSDT) Medicaid Program, dentistry is an elective service for adults. As of 2005, only seven U.S. states covered reasonably comprehensive adult dental care in their Medicaid programs, according to Medicaid analysis.<sup>6</sup>

Despite practitioner justification of inadequate finances, byzantine administrative arrangements and paperwork, and missed appointments by patients, the media continues to emphasize the unwillingness of dentists to provide care to Medicaid patients with the charge that less than one-third of children covered by Medicaid received any dental treatment at all.<sup>14</sup> Of particular concern is the loss of dental coverage at age 21 for special-needs children as they age-out of the mandatory EPSDT Medicaid Program and become subject to limitations in adult coverage.<sup>1</sup>

#### So Who Will Provide Dental Care for Adults with Disabilities?

Practicing dentists who care for children with special needs are characterized as those who are older, who accept Medicaid, and who practice in small towns. These factors suggest that these dentists are perhaps more engaged in their communities, more likely to be personally familiar with families with vulnerable and special-needs patients, and practice in ways that are more socially equitable.<sup>10</sup>

But what about adults with special needs? Undoubtedly, many dentists provide services to adults with a great

range of disabilities. The difficulties arise in securing care for those adults with particularly complex and severe special needs. While pediatric dentists may, to some extent, provide needed services for these patients, children’s hospitals often will not admit adult patients with special needs because they have a cutoff age of 18 for admission regardless of the type of disability. Recent questioning of pediatric program directors and members of the specialty Board of Pediatric Dentistry indicated that there is no available information regarding the number of pediatric dentists who provide dental care to adults with special needs.

While the recent establishment of education requirements in dental and dental hygiene schools will begin to prepare graduates for the care of individuals with special health care needs, it will require many years before significant numbers of these graduates will serve our communities. In addition, there is the need to establish a source of financial resources for needed services. Although the Medicare program supports services for adults with permanent disabilities, the coverage for dental costs is extremely limited.<sup>15</sup>

In the past, the dental profession has moved to develop solutions to the delivery of services as the result of community pressure. For example, the passage of legislation in the state of Oregon to legalize denturists (laboratory technicians who could fabricate and provide dentures to patients without the supervision of a dentist) promoted practitioner interest to provide prosthetic services for older patients.<sup>16</sup> Another example is the American Dental Association’s present concerns regarding efforts to provide dental services by dental therapists (non-dentists with two years of training), due to the unavailability of dentists in the nonmetropolitan areas of Alaska.<sup>17</sup> Maybe that’s the answer: community pressure? ■

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# Anesthesia Morbidity and Mortality Experience Among Massachusetts Oral and Maxillofacial Surgeons

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Anesthesia-related morbidity is a serious risk to oral and maxillofacial surgery patients receiving outpatient surgery. Unfortunately, there is little data to track the risks of outpatient anesthesia to offer as an appeasement for these concerns. The most recent and comprehensive review is the American Association of Oral and Maxillofacial Surgeons (AAOMS) anesthesia study published in 2003.<sup>1</sup> In an insurance claims analysis, Deegan presented data that the mortality risk in the oral surgery office was 19 deaths in 14,206,923 anesthetics administered.<sup>2</sup>

Similar to the format of our study, in 1980 Lytle and Yoon presented data from the Southern California Society of Oral and Maxillofacial Surgeons from a five-year retrospective study of anesthesia-related mortality.<sup>3</sup> In that article, there were no reports of anesthesia-related deaths based on a 100 percent response rate. In 1989, Lytle and Stamper published data from their 1988 survey of oral and maxillofacial surgeons (OMSs) from Southern California spanning the 20 years from 1968 to 1987.<sup>4</sup> The data from that study revealed seven deaths in over 4,700,000 anesthetics, for a mortality rate of 1:673,000.

In 1992, D'Eramo presented data collected from Massachusetts OMSs from 1984 to 1989 that showed a mortality rate of approximately 1:1 million.<sup>5</sup> A follow-up of this study, published in 1999, reported no deaths in 1,588,000 anesthetics.<sup>6</sup> In 2003, D'Eramo, Bookless, and Howard published a third in-

stallment of this series, revealing two anesthetic-related deaths in 1,706,100 anesthetics, for a mortality rate of 1:853,000.<sup>7</sup> In the analysis of this study, the authors also combined the retrospective data of six prior studies and found a cumulative mortality rate of 1:835,000. Hunter and Molinaro reported the results of a retrospective outpatient mortality study in the Boston University oral surgery training program demonstrating no deaths in 1,126 anesthetic cases.<sup>8</sup> In 2005, Rodgers presented personal data comprising 2,889 anesthetics without any mortality.<sup>9</sup>

Additional published reports demonstrate the experience of other dental professionals in providing outpatient anesthetic services. In 1997, Nkansah et al. at the University of Toronto published a 22-year retrospective study of anesthesia-related mortality.<sup>10</sup> Four deaths were reported in over 2,830,000 anesthetics administered by OMSs and dental anesthetists with a cumulative mortality rate of 1.4 in 1 million anesthetics administered. In that same year, Flick, Perkins, and Green published a survey-based report for the state of Illinois for anesthesia-related mortality during the year 1996.<sup>11</sup> That study included the results of all dental personnel with anesthesia privileges, including OMSs, periodontists, and general dentists. With a 71 percent response rate, one mortality was reported in 151,335 anesthetics. A decade later, a 10-year follow-up study with 115,940 anesthetics was published in 2006.<sup>12</sup> In that article, the authors reported two mortalities and two "long-term morbidities" among the practitioners surveyed.

Recent reports in the plastic surgery literature also show low mortality rates for office-based anesthesia. Two studies published in the *Journal of Plastic and Reconstructive Surgery* in 2003 reported no anesthesia-related deaths in over 10,000 cases.<sup>13,14</sup> The data presented in our report here are consistent with these other recent publications documenting the safety of outpatient anesthesia procedures in the oral and maxillofacial surgery office.

## Materials and Methods

At the start of 2005, the Massachusetts Society of Oral and Maxillofacial Surgeons (MSOMS) mailed an anesthesia survey to its members. Nonrespondents were mailed a second survey one month later and a third the following month. Follow-up telephone calls were made to the remaining nonrespondents to elicit a 100 percent response from the 169 members in active practice during the 2004 calendar year. Two members indicated that they did not administer anesthesia of any kind and these members were not included in our study. This article is based on the information received from the 167 remaining practitioners. Their responses were collected in unmarked envelopes and then sealed in randomly numbered envelopes to ensure anonymity to the two principal investigators. The incidence of events was based on personal recall of the respondents and details provided through the review of their private office charts. To simplify the responses and facilitate compliance, only three terms, as defined by the Massachusetts Board of Registration in Dentistry (BORID), were used to describe the anesthesia delivered to patients. They are as follows:

- General anesthesia (GA) is a controlled state of unconsciousness, accompanied by a partial or complete loss of protective reflexes, which may include inability to maintain an airway independently and to respond purposefully to physical stimulation or verbal command.

- Parenteral sedation (PS) is a depressed level of consciousness, produced by intravenous (IV), intramuscular, subcutaneous, or rectal medication. This may be accompanied by a partial loss of protective reflexes.
- Nitrous oxide-oxygen sedation (NOS) is sedation accomplished solely by the use of nitrous oxide-oxygen.

For the purpose of this study, two additional definitions were utilized for patient visits not requiring systemic anesthesia. They are as follows:

- Local anesthesia (LA): patients receiving only local injections of anesthetic agents.
- No anesthesia (NA): patients who were not given any anesthetic agents.

Mortality data was obtained for the five years from 2000 to 2004. Morbidity data was obtained only for the year 2004. Letters of inquiry were mailed to each county medical examiner regarding oral surgical mortality in Massachusetts. Their responses corroborated the information provided by responding practitioners.

## Results

In 2004, Massachusetts oral surgeons worked an average of 46.6 weeks and saw a mean of 77.5 patients per week, totaling 603,119 office visits. The medications used are cited in Tables 1 and 2 and in Figure 1. Forty-two percent (256,034) of patients were seen for nonanesthetic reasons (i.e., consultations and postoperative visits). The other 58 percent (347,076) of visits were for procedures.

**Table 1. Anesthetic and Adjunctive Agents Used in 1989, 1994, 1999, and 2004**

Percentage of respondents indicating anesthetic agent was used at least once per month in 1989, 1994, 1999, and 2004. Agents are listed in the order of 2004 frequency.

Agent	1989	1994	1999	2004
Midazolam	48%	63%	71%	91%
Nitrous Oxide	97%	88%	87%	90%
Fentanyl	38%	48%	61%	74%
Propofol	—	3%	8%	58%
Ketamine	7%	10%	26%	50%
Methohexital	90%	79%	78%	46%
Diazepam	79%	69%	62%	36%
Glycopyrrolate	7%	11%	19%	19%
Atropine	20%	22%	26%	17%
Halothane	25%	20%	17%	11%
Meperidine	13%	13%	11%	10%
Nalbupine	10%	7%	6%	7%
Sevoflurane	—	—	0%	6%
Thiopental	1%	2%	2%	1%
Scopolomine	0.7%	1%	1%	0%
Pentobarbital	3%	1%	1%	0%

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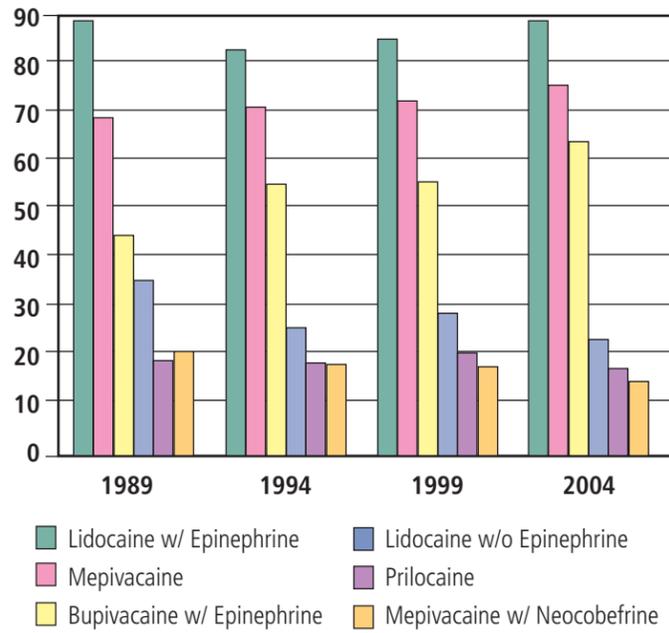
**Purpose:** To document the incidence of specific complications and the mortality rate for office anesthesia administered by fully qualified oral and maxillofacial surgeons in the state of Massachusetts.

**Materials and Methods:** A survey questionnaire was mailed to the 169 active members of the Massachusetts Society of Oral and Maxillofacial Surgeons. Using a specific method for follow-up, a 100 percent response was obtained.

**Results:** The frequency of office anesthetic complications occurring in 2004 was consistent with our previous studies. There was one office death, for a mortality rate of 1:1,733,055. The incidence of other specific anesthetic-related complications is documented.

**Conclusion:** From the data presented here, we conclude that outpatient anesthesia in the oral and maxillofacial surgery office continues to be a safe therapeutic modality.

**Figure 1: Local Anesthesia Used in 1989, 1994, 1999, and 2004**



**Table 2. Local Anesthetics Used in 1989, 1994, 1999, and 2004**

Percentage of respondents indicating local anesthetic agent was used at least once per month in 1989, 1994, 1999, and 2004. Agents are listed in the order of 2004 frequency.

Agent	1989	1994	1999	2004
Lidocaine with Epinephrine	89%	83%	85%	89%
Mepivacaine	69%	71%	72%	76%
Bupivacaine with Epinephrine	44%	55%	55%	64%
Lidocaine without Epinephrine	35%	25%	28%	23%
Prilocaine	18%	18%	20%	17%
Mepivacaine with Neocobefrine	20%	18%	17%	14%

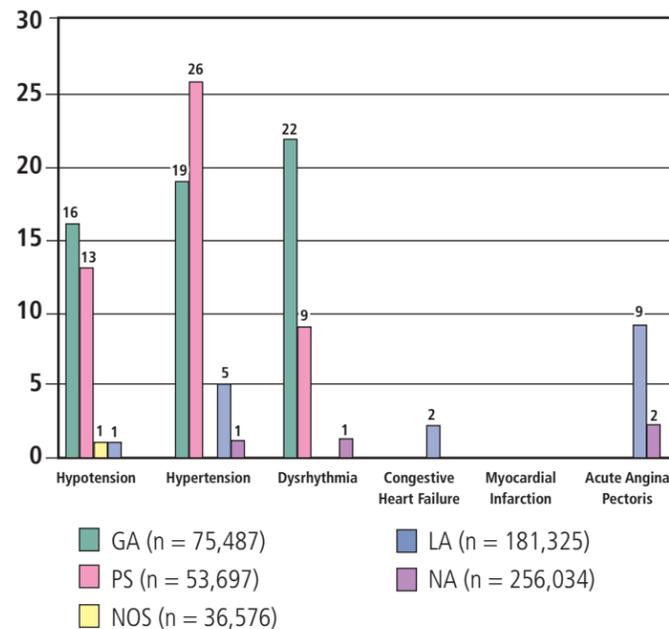
**Table 3. Adverse Events Categorized by Anesthetic Method Used**

Event	General Anesthesia (n = 75,487)	Parenteral Sedation & Local Anesthesia (n = 53,697)	Nitrous Oxide Sedation & Local Anesthesia (n = 36,576)	Local Anesthesia (n = 181,325)	No Anesthesia (n = 256,034)
Syncope	291	260	87	1,184	161
Laryngospasm	97	58	0	0	0
Bronchospasm	23	5	0	0	0
Allergic Reaction Requiring Drug Therapy	13	18	0	6	3
Convulsion	5	19	6	18	1
Hypotension Requiring Drug Therapy	16	13	1	1	0
Hypertension Requiring Drug Therapy	19	26	0	5	1
Dysrhythmia Requiring Drug Therapy	22	9	0	0	1
Neck or Nerve Injury Associated with Positional Changes During Anesthesia	0	0	0	0	0
Phlebitis	41	47	0	0	2
Intra-Arterial Injection of Medication	0	0	0	0	0
Intra-Arterial Penetration with Needle	7	6	2	4	0
Vomiting with Aspiration	1	0	0	0	0
Aspiration of Tooth or Foreign Body	0	0	0	0	0
Insulin Shock	0	0	0	1	0
Diabetic Ketoacidosis	0	0	0	0	0
Congestive Heart Failure	0	0	0	1	0
CVA	2	0	0	2	0
Myocardial Infarction	0	0	0	0	0
Acute Angina Pectoris	0	0	0	9	2
Malignant Hyperthermia	0	0	0	0	0

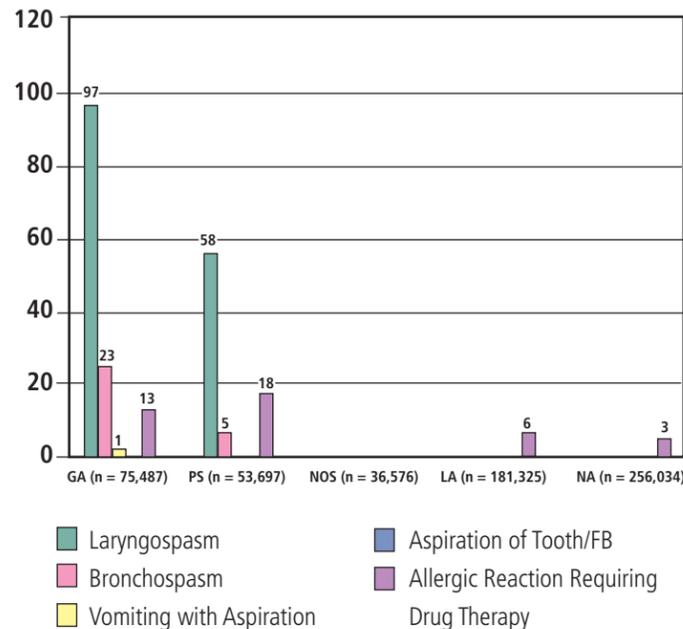
Adverse event data is reported in Table 3 and represented graphically in Figures 2–4. As noted in previous studies, syncope in association with the administration of local anesthesia remains the most frequent untoward event in the oral surgeon's office. Of the 178,990 patients receiving local anesthesia, syncope was reported in 1,184 patients for a frequency of 1 in 151 patients. The syncopal events reported for patients receiving general anesthesia included patients fainting either before or after the surgical procedure.

In our data, the most common anesthetic problem occurring with patients receiving general anesthesia or parenteral sedation is laryngospasm, occurring with a frequency of 1 in 833 patients. However, the incidence of this complication has decreased significantly in our 20-year series. Dysrhythmias requiring drug therapy continue to be an infrequent occurrence, with an incidence of 1 in 4,167 patients. Neck or nerve injury associated with positional changes during anesthesia was not observed in our 2004 data and has been very infrequently observed in our

**Figure 2. Incidence of Cardiac Events**



**Figure 3. Incidence of Allergy/Airway Events**



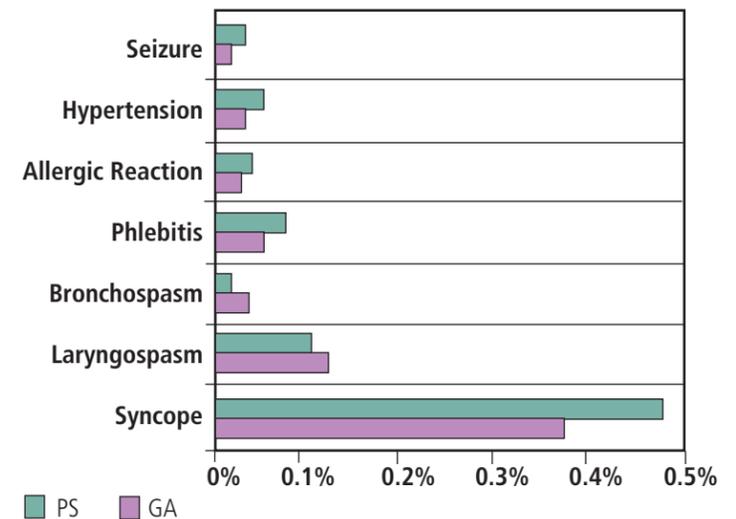
data from the preceding 19 years. Phlebitis occurring with general anesthesia or parenteral sedation has also decreased from our previous surveys, which may be because of the more common usage of midazolam versus diazepam (see Table 1). Malignant hyperthermia was not reported in our 2004 data, consistent with the findings of our previous surveys. The incidence of other untoward events and their probabilities are listed in Table 3.

Intra-arterial injection of medication was not reported in any patients; however, intra-arterial penetration during IV access was reported in 19 patients. The incidence of vomiting has decreased in our series. In 2004, 1 in 75,487 patients vomited with aspiration during general anesthesia. This decreased incidence of vomiting with aspiration over our 20-year series may be due to the increased use of propofol. Propofol offers a profound antiemetic effect at sub-sedative doses<sup>15</sup> and when used for induction and maintenance of general anesthesia has been found to have an antiemetic potency similar to preoperative ondansetron.<sup>16</sup> Vomiting with aspiration was not cited in any of the other anesthetic categories.

Insulin shock and diabetic ketoacidosis continue to be rare complications of oral surgical office anesthesia. There were no incidences of either complication reported for 2004. However, in our previous studies, when diabetic problems did occur, insulin shock was reported more frequently than diabetic ketoacidosis.

Figure 4 summarizes the percent probability of the most common complications in outpatient anesthesia. This ranking was calculated by comparing the incidence of an anesthetic complication with the average number of patients seen in a one-year period.

**Figure 4. Percent Probability for Major Events During PS and GA**



**Table 4. 1980–2008 Comparative Mortality Rates for Dental Office Anesthesia**

Author	Year Published	Type of Anesthesia	Deaths/Patients	Approximate Mortality Rate
Lytle and Yoon <sup>3</sup>	1980	General	0/1,285,000	0/1,285,000
Lytle and Stamper <sup>4</sup>	1989	General	7/4,700,000	1/672,000
D'Eramo <sup>5</sup>	1992	General, sedation, local	2/2,082,805	1/1,000,000
Nkansah, Haas, and Saso <sup>10</sup>	1997	General, sedation	4/2,830,000	1/707,500
D'Eramo <sup>6</sup>	1999	General, sedation, local	0/1,588,365	0/1,588,000
Deegan <sup>2</sup>	2001	General, sedation	19/14,206,923	1/747,000
D'Eramo, Bookless, and Howard <sup>7</sup>	2003	General, sedation, local	2/1,706,100	1/853,000
Flick, Katsnelson, and Alstrom <sup>12</sup>	2006	General, sedation, local	2/1,159,400	1/500,000
Data Currently Presented	2008	General, sedation, local	1/1,733,055	1/1,733,000

From our survey data, respondents reported seeing an average of 78 patients per week and worked an average of 46.6 weeks per year, giving a total of approximately 3,600 patient visits per year per oral surgeon. Any anesthetic complications occurring with a frequency of greater than 1 in 3,600 were included in this figure.

Assuming that the same numbers of patients were treated in 2004 as in the preceding four years, the extrapolated oral surgery office mortality rate is 1 in 1,733,055. For our 20-year series, mortality during oral surgical office anesthesia is 5 in 7,110,325, or 1 in 1,422,065. Table 4 shows the data from comparable studies since 1980 that show similar mortality rates.

### Discussion

This report is one of a continuing series monitoring the ongoing anesthesia-related morbidity and mortality of OMS patients in Massachusetts. From this and other studies reviewed, it can be concluded that the experiences of Massachusetts OMSs parallel those of similar clinicians around the country since 1980.

By far, the most common complication reported was syncope, comprising 79 percent of all anesthetic-related complications. However, a closer analysis of these events reveals that 60 percent of these syncopal reactions occurred in patients who were not given systemic anesthesia. Laryngospasm and bronchospasm, two severe respiratory complications, occurred in only 0.15 percent of cases with GA and PS. Similarly, cardiac-related complications, including dysrhythmias, hypertension, hypotension, congestive heart failure, angina pectoris, and myocardial infarction, comprised only 0.09 percent of all anesthesia-related complications. Interestingly, if we focus on angina pectoris and myocardial infarction, 11 patients developed these problems, yet 100 percent of these patients received either local anesthesia alone or no anesthesia at all.

Among the shortcomings of our retrospective study is that our data relied heavily on the recall of practitioners and the information they provided. In a previous publication of our series, we cited reasons for the inherently low incidence of complications during outpatient anesthesia administered by OMSs, which included:

- Procedures are usually performed on healthy ASA I/II patients.

- After developing an anesthetic problem, oral surgical procedures can usually be stopped within seconds without significant adverse effect, and full attention directed to the management of the anesthetic problem.<sup>17</sup>

Using the OMSNIC study design as a benchmark for the reporting of data, our data collection is comparatively limited. Factors such as ASA classification, age, and the length of the surgical procedure were not measured in our study and thus could not be factored into our final analysis of the complications encountered. In fact, analysis of the data presented in many of the previously cited studies did not include assessment of ASA classification.

The ASA classification was first devised in 1941 through the efforts of Myer Skalad examining the effect of a patient's perioperative condition on anesthetic outcomes.<sup>18</sup> While the ASA classification provides a convenient framework to stratify patients in terms of anesthetic risk, it does not provide an iron-clad assurance of predictable patient outcomes.

In our study of the mortalities reported, one patient had a history of congestive heart failure and alcoholic cirrhosis that was not disclosed to the treating surgeon. For this patient, a question of whether preoperative examination may have uncovered a potential problem is open for debate. Without overt signs of hepatic disease, such as gross ascites or jaundice, preoperative examination would not provide much useful information. Of the patients who developed complications and were transferred directly to the hospital, at least three were reported to be 21 years of age or younger. A similar observation was also noted by Jastak and Peskin, who performed a closed claim summary of complications related to outpatient anesthesia.<sup>19</sup> In their summary, they noted that "the disproportionate number of patients in this sample who were at the extremes of age and with ASA classifications below I suggest that anesthesia risk may be increased in patients who fall outside the healthy, young adult category typically treated in the oral surgical/dental outpatient setting."<sup>20</sup>

### Conclusion

The clinical intent of our retrospective analysis is to provide dentists with a working knowledge of anesthetic complications to assist in the proper preoperative and perioperative management of patients. This premise is the essential ingredient in using our

data for continuing quality improvement in the discipline of outpatient anesthesia. The more information that can be collected regarding complications, the better equipped dentists will be in anticipating untoward outcomes.

An increasing number of oral surgeons are using newer and often safer drug combinations. Reviewing our data from the past 20 years, we see a dramatic increase in the usage of midazolam, fentanyl, and propofol. Coincidentally, we have observed a significant decrease in the anesthetic complications of phlebitis, nausea, laryngospasm, and bronchospasm.

Outpatient anesthesia in the hands of qualified OMSs continues to be a very safe and effective therapeutic modality. Looking forward, other dental societies should consider similar reviews to augment currently published studies. ■

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# Transient Lingual Papillitis: Case Reports



## JOHN L. GIUNTA, BS, DMD, MS

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The term transient lingual papillitis (TLP) was suggested by Whitaker et al. in 1996.<sup>1</sup> It describes a condition of the tongue that is relatively common but with few documented cases. It is seen more in young women as a painful enlargement of one or more fungiform papillae that resolve quickly within a day or several days. Trauma may be a likely cause but the exact cause is elusive. The following brief reports are presented to augment the clinical documentation of this condition.

### Case Report 1

A 15-year-old white female presented, complaining of a painful lesion on her tongue that had arisen suddenly. There was no recollection of trauma. Her history was within normal limits except for her taking a daily laxative medication for an intestinal problem. She has had recurrent aphthous stomatitis and bouts of oral candidiasis a few times in the past. She also wore an orthodontic retainer on an overnight basis. On a 10-point pain scale, with “10” being the worst, the patient said the pain level was a “3.” Examination revealed a 2 x 3 mm yellowish papule on the left lateral posterior border of the tongue anterior to the foliate papillae (see Figure 1). A preliminary diagnosis of transient lingual papillitis was made. The lesion resolved in two days. The final diagnosis was transient lingual papillitis.

### Case Report 2

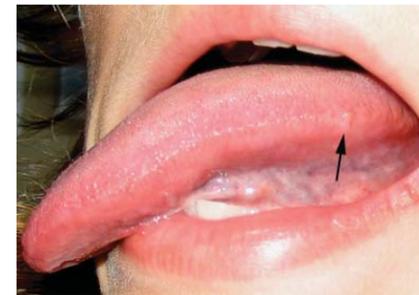
A 63-year-old white female complained of a painful lesion on her tongue that was not present the night before. She could not recollect biting herself. Her history was within normal limits. The only pills she took were multivitamins and calcium with vitamin D. Additionally, she would occasionally take ibuprofen but had not taken it recently. Examination revealed a raised, 3 x 4 mm, yellowish-white papule on the left lateral border of the anterior tongue (see Figure 2). A preliminary diagnosis of an inflamed fungiform papilla with vasoconstriction was made. No treatment was given. The lesion resolved within five days. The final diagnosis was transient lingual papillitis.

### Case Report 3

A 25-year-old white male dental student presented with a photograph of a condition that had occurred on his tongue. It arose overnight and presented as pain with some loss of taste. Examination of the photograph revealed numerous swollen, white fungiform papillae on the anterior and middle thirds of the dorsum of the tongue (see Figure 3). His history was within normal limits. The preliminary diagnosis was fungiform papillitis, possibly of viral origin. There was no treatment. The lesions regressed in about a week. The final diagnosis was transient lingual papillitis.

### Discussion

Documented cases of transient lingual papillitis are few.<sup>1,2</sup> Still, the condition is relatively common. On the survey done by Whitaker et al.,<sup>1</sup> 56 percent of 163 respondents admitted to having such lesions. An appellation given by respondents was that they had “lie bumps.” A search on the Internet for “lie bumps” reveals that they are well recognized and that the term arose from superstitions that they were “the result of someone telling lies.” TLP is limited to the dorsal surface of the tongue, affecting usually one or sometimes more of the fungiform papillae. It is a harmless but annoying problem. These bumps can become prominently red, white, or yellow-white and are tender for up to several days, although the pain or sensation is not severe. The biopsy of the case presented by Whitaker et al. showed a mild-to-moderate chronic inflammatory infiltrate



**Figure 1.** Case 1 presented with a yellowish papule on the left lateral border of the tongue.



**Figure 2.** Case 2 presented with a raised, yellowish-white papule on the left anterior lateral border. Also note several prominently red fungiform papillae anterior to the lesion.



**Figure 3.** Case 3 presented with numerous swollen white fungiform papillae on the dorsal surface. The involvement of so many papillae is unusual in transient lingual papillitis.

with some surface ulceration. While the cause of TLP is not known with certainty, most experts feel that local accidental trauma (rubbing, scraping, or biting) is a major factor; however, contact reactions to things like certain foods have also been suggested. The bumps are not contagious and the discomfort is relatively minor. Typically, these lesions heal within a few days with little or no treatment. Numbing rinses may be helpful.

Of interest are two reports on eruptive lingual papillitis that describe an acute outbreak in children of inflamed hypertrophic fungiform papillae on the tip and dorsolateral surface of the tongue with a pseudopustular appearance.<sup>3,4</sup> This could be accompanied by fever, irritability, lymphadenopathy, and increased salivation. The lesions resolved within two weeks. Moreover, there was transmission to other adult family members, suggesting a viral origin. The patient in Case 3 presented with multiple pseudopustular papillae that did not start in a child and had none of the other features. Therefore, it is considered to be a case of TLP that is unusual in that it presents with multiple lesions and not just a singular lesion.

Also of interest is a report of fungiform papillary glossitis.<sup>5</sup> The authors conclude that atopic people—those with a genetic hypersensitivity to environmental allergens like asthma, eczema, and hay fever—are more likely to have increasingly inflamed fungiform papillae than nonatopic people. This suggests that inflamed fungiform papillae may be a manifestation of atopy in some individuals. In the cases presented, there was no history of atopy.

### Summary

Transient lingual papillitis is an annoying, yet harmless, condition seen more in young women as a mild-to-moderate painful enlargement of one or more inflamed fungiform papillae that resolve within a day or several days. Trauma may be a likely cause, but the exact cause is unknown. Treatment can be palliative using numbing or covering agents or provide reassurance with no other treatment except for follow-up to see that the lesions do resolve. ■

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# Pierre Fauchard: The Father of Modern Dentistry

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**T**hroughout the history of modern dentistry, there have been many luminaries in the profession. All have made tremendous contributions to various aspects of dentistry and the betterment of oral care in general. However, only one can be known as “the Father of Modern Dentistry.” This title is bestowed upon Pierre Fauchard (1678–1761). Fauchard truly metamorphosed the primitive “practice” of dentistry at the time into a new vocation now fully deserving of the term “profession.”

While his contributions to dentistry are well documented, very little is known about Fauchard’s youth. He is believed to have been born in Brittany, France, in 1678.<sup>1</sup> His surname is very rare and is thought to be derived from a nickname.<sup>2</sup> There is a medieval weapon known as a “fauchard,” which was a two-meter-long wooden pole with a curved blade attached to it.<sup>2</sup>

Fauchard joined the French Royal Navy as a student-surgeon in 1693 during the rule of Louis XIV.<sup>3</sup> As was the case in the development of many legendary figures throughout history, a young Fauchard (15 years of age) was very fortuitous to fall into the company of an older, more established figure who would act as a tutor and mentor. In Fauchard’s case, this individual was French Royal Navy Surgeon Major Alexandre Poteleret, who had a keen interest in oral diseases.<sup>3</sup> Fauchard heeded Poteleret’s advice and took advantage of his long journeys at sea. He documented the various cases of oral diseases and dental ailments that he encountered. One such disease was scurvy, which was very common back then for men sent out to sea for long periods of time.<sup>4</sup>

In 1696, Fauchard started practicing dentistry in Angers.<sup>3</sup> He called himself a “chirurgren-dentiste,” which translates to “surgical dentist.”<sup>5</sup> Until this time, the very few capable individuals practicing dentistry had referred to themselves as “dentateurs,” or “denture makers.”<sup>3</sup> Besides these few dentateurs, Europe was filled with individuals who would ply their trade at markets and fairs.<sup>2</sup> Some could be characterized as rogues and charlatans.<sup>1</sup>

*“The most common cause of the loss of teeth is the negligence of those people who do not clean their teeth when they might.”*

*—Pierre Fauchard*

In 1719, Fauchard settled in Paris, where he would spend the remainder of his life.<sup>1</sup> His practice was located near the university at this time.<sup>3</sup> Many of his patients were the more prominent denizens of France,<sup>5</sup> and Fauchard quickly became recognized as a dentist with no equals. His service and advice were sought after by the most experienced French surgeons of the day.<sup>2</sup>

### Treatise on the Teeth

In 1723, Fauchard completed the manuscript of *Le Chirurgien Dentiste ou Traite des Dents* (translated to: *The Surgeon Dentist or Treatise on the Teeth*),<sup>2</sup> a text that would shape the future of dentistry. He wrote it to encourage greater education and the development of the dental profession. However, *Le Chirurgien Dentiste* was not published until five years later, in 1728.<sup>3</sup> It was now a work of 783 pages.<sup>7</sup> Fauchard wanted this text to be as clean, accurate, and comprehensive as possible. It was published as a two-volume work and is seen as the first dental textbook.

In the text, Fauchard passionately revealed and condemned the practices of the many charlatans of the day. He described in great detail the trickery those individuals were playing on the unsuspecting people in dire need of dental treatment. He exposed them for what they were and also exposed the damage that they were inflicting upon their patients.

He proposed a unique idea—that dental patients be seated in an armchair. Until that time, all individuals, regardless of age, who required an extraction were seated on the floor.<sup>5</sup>

*Le Chirurgien Dentiste* also described the anatomy, function, development, and eruption of teeth in an elaborate fashion.<sup>1</sup> When the subject turned to areas in which Fauchard himself felt a little unsure, such as tooth development and the histology of dental tissues, he inserted quotations or let another member of the Parisian Academy speak concerning the subject.<sup>1</sup>

Fauchard went on to illustrate certain theories he had on various aspects

of dentistry based on his many years of study and observation. These theories are now seen to be very innovative and the basis for many of the fundamental beliefs of modern dentistry. He stated that “the most common cause of the loss of teeth is the negligence of those people who do not clean their teeth when they might” and that “tartar is one of the greatest enemies of the teeth . . . it does not act on them alone but also on the gums.”<sup>6</sup> Fauchard described the use of metals to restore cavities, and he stressed the importance of removing all traces of caries.

Fauchard’s text was way ahead of its time, even in a preventive sense. When patients complained that their teeth had more pain after being cleaned, he responded that the pain was not due to the procedure to clean the teeth but, rather, due to the patient’s neglect of his or her teeth over a long period of time. Fauchard suggested that in order to prevent such pain from occurring again, patients should have their teeth examined by a competent dentist on a regular cycle of every four to six months.<sup>3</sup>

The fundamental teachings of Fauchard were brought to the United States by James Gardette, who had studied dentistry in Paris and settled in Philadelphia, Pennsylvania, in 1774. Gardette practiced in Philadelphia until 1830, a year before his death.<sup>3</sup>

Fauchard was recognized in his day as being far ahead of his contemporaries; however, like the best in any field, he was a target for jealousy by the less successful members of dentistry.<sup>3</sup> Fauchard died in 1761 after having spent a lifetime transforming the image, status, and future of dentistry.

### Lasting Legacy

Today, an international honorary dental organization, the Pierre Fauchard Academy, exists to honor the memory and contributions of Pierre Fauchard. The organization recognizes outstanding dentists and celebrates their achievements. Its goal is to exemplify the traits that

Fauchard first taught the profession—to support the ideals of dentistry throughout the world, while conducting an ethical and moral practice.

In 1992, the Pierre Fauchard Academy established its International Hall of Fame of Dentistry to honor certain individuals’ immense contributions to the dental profession in areas such as education, research, and humanitarian service.<sup>8</sup> Pierre Fauchard was the first inductee. ■

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# The Toothbrush Plant

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**Figure 1. Two lions snacking under a large, tree-sized toothbrush plant (*Salvadora persica*).**



**Figure 2. A large leopard walking by a small toothbrush plant.**

## Abstract

**T**he toothbrush plant is a low-growing shrub that is found throughout Africa and the Middle East. It is used by the native peoples as a chew stick for cleaning their teeth. When the end of the wood is chewed, it becomes frayed and can be used as a natural brush that delivers therapeutic minerals and chemicals, present in the wood fiber, to the teeth and gingiva. The use of this wood for oral care could be a great benefit to people in industrialized nations.

## The Toothbrush Plant

The toothbrush plant, *Salvadora persica*, grows throughout Africa and is used by the inhabitants as a tool for cleaning their teeth.<sup>1</sup> The plant is a low-growing shrub (see Figures 1 and 2), somewhat woody with an easily peeled bark and a fibrous pulp. It quickly splays out into a brushlike form when chewed. If allowed to grow unmolested, this plant will form a low scrubby tree. The plant has numerous names, depending on where it is used and by whom. It is sometimes called the “salt bush” because it often grows in salty soils.<sup>1</sup> In northern Africa and the Middle East, it is called the “arak bush.”<sup>1</sup> In southern Africa, it is often called “mswak,” which is Swahili for “toothbrush.”<sup>1,2</sup> Yet another name for this plant is “werek.”<sup>3</sup>

The toothbrush plant has a slightly tart-bitter taste, almost sour, which is apparent when the sap or wood is chewed. The wood is white or slightly beige in color (see Figure 3). It has a soft, fibrous quality and does not easily break off or fragment when chewed or rubbed on the teeth. The patient selects a pencil-sized stick of this wood, 15 cm (6 inches) in length, preferably fresh and pliable. It is snapped off the tree and used individually,

or harvested, cut, trimmed, and sold in local markets for the equivalent of about 6 cents (see Figure 4). The soft, smooth bark can be peeled with the fingernails, and the end of the stick is usually chewed until it is mashed into a fan-shaped mass of bristles (see Figure 5). These are rubbed against the teeth and gingiva like a brush (see Figures 6 and 7).

The wood fibers are quite strong and do not easily decompose, even after multihour brushing sessions. Most often, a stick is placed in the mouth during walks or rides and used intermittently over long periods of time. Most Africans will take long walks or bus rides to distant destinations, resulting in a greater amount of “free time” than we tend to see in the industrial world’s societies. This creates a significant opportunity to “clean” the teeth and gingiva. All ages and genders use this stick, sometimes constantly throughout the day.

The toothbrush plant contains a large collection of chemicals, which may significantly help the teeth resist oral disease.<sup>2-6</sup> Besides the effects of the plant fibers on the physical removal of plaque and stain, the toothbrush stick helps stimulate gingival circulation and exercise jaw muscles.<sup>7-13</sup> The plant acts as a drug delivery system to the mouth. Using *Salvadora persica* chew sticks can help clean and whiten the enamel, as well as reduce halitosis and gingivitis by simple food removal.<sup>7</sup> When used regularly, it lowers the Community Periodontal Index (CPI) significantly.<sup>12</sup>

*Salvadora persica* contains a host of active microbials.<sup>2-6,12</sup> The stems contain benzyl nitrite, eugenol, thymol, eucalyptol, alkali salts (which raise pH and lower acidity), silica (an abrasive), and small amounts of fluoride that influence the rate of caries and periodontal disease.<sup>5</sup> An aqueous solution of the wood sap possesses strong inhibitory qualities.<sup>8,11</sup> It has been found to kill *Strep mutans*, *E. coli*, lactobacilli, and a variety of common oral fungi when exposed *in vitro*.<sup>10</sup> The sap contained in the wood is more concentrated. In addition to having antibiotic qualities, the three essential oils (eugenol, thymol, and eucalyptol) will cause a slight topical analgesia of the gingiva, allowing the patient to clean harder and longer in an otherwise sensitive mouth.<sup>4</sup> The toothbrush plant has been favored in those areas where the Muslim religion dictates that all the faithful must clean their mouths (including teeth) several times a day as a prelude to prayers. In other areas, the toothbrush plant use is purely cultural.<sup>6</sup>

In comparison with the standard toothbrushes of industrialized nations, *Salvadora persica* has been shown to be more effective in plaque removal experiments; however, operator technique and the time the instrument is applied to the teeth is a significant variable. Most First World people will not use their toothbrushes for hours each day as many Africans and Middle Easterners do with their toothbrush plant brushes.

There are some North American plants that are occasionally used in the same way as the Africans use the toothbrush plant. *Zanthoxylum americanum* is a gum tree that has been favored as a North American toothbrush.<sup>13</sup> It does not contain the beneficial cocktail of chemicals in the sap and wood, but physically it makes a great brush and chew stick.



Figure 3. A close-up view of the toothbrush plant. The leaves are warped due to excessive drought.



Figure 4. A child selling prepared toothbrush plant sticks at an Ethiopian market. The cost is 6 cents each (to foreigners).



Figure 5. A chewed toothbrush plant stem. This is used to rub against the teeth and gingiva.

*The toothbrush plant has demonstrated that toothpicks and chew-stick toothbrushes can be an effective method in preventing, reducing, and treating dental disease.*



**Figure 6. A South African game ranger brushing with the toothbrush plant.**



**Figure 7. The author demonstrates brushing with the toothbrush plant.**

### Suggestions for Use

The toothbrush plant helps the user in two basic ways. First, it acts as a brush that physically removes plaque and massages the gingiva. Second, it is also a drug delivery system that supplies naturally produced drugs (e.g., eugenol, fluoride) to the teeth and mouth. In the industrialized world, the use of wooden toothpicks has always been popular; they are offered at most restaurants and found in many homes. Designer toothpicks made of wood are also available and often recommended to patients by the dental community.

The toothbrush plant has demonstrated that toothpicks and chew-stick toothbrushes can be an effective method in preventing, reducing, and treating dental disease. U.S. Food and Drug Administration testing requirements, as well as product liability concerns, have precluded the use of drug-containing toothbrushes and toothpicks due to the economics and the liability involved. Utilization of *Salvadora persica* wood in our toothpicks and chew sticks worldwide would bypass these handicaps and give dentists a new, inexpensive tool in oral health care. The author would recommend that toothpick manufacturers consider producing their products from *Salvadora persica* rather than from birch, basswood, redwood, pine, and other North American trees. ■

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# A Clinico-Pathologic Correlation: Primary Ewing's Sarcoma of the Mandibular Body-Ramus

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**Figure 1.** An initial panoramic radiograph shows a radiolucent lesion of the posterior left mandibular body and inferior ramus. There is resorption of the lamina dura and obliteration of the periodontal ligament spaces around the apices of involved teeth #17, 18, and 19. The developing tooth bud of #17 has been displaced from its crypt.



**Figure 2.** An initial periapical radiograph shows the indistinct anterior border of the radiolucency, resorption of the lamina dura, and obliteration of the periodontal ligament spaces around the apices of involved teeth #17 and 18.

A 15-year-old Asian male was referred to the department of oral and maxillofacial surgery at Tufts University School of Dental Medicine (TUSDM) for evaluation of a radiolucent lesion on the posterior left mandible. The patient was initially evaluated by his primary dentist for pain of two months' duration associated with teeth #17 and 18. Radiographic examination was performed and the panoramic radiograph revealed a radiolucent lesion involving the left mandibular body and ascending ramus, along with resorption of the roots of the predetermined teeth. Considering odontogenic infection, the patient was placed on antibiotics and referred to TUSDM for further evaluation and treatment.

## History and Clinical Findings

The patient's medical history was otherwise noncontributory, and he was in good general health. Upon further evaluation, the patient was found to be febrile. A lymph node approximately 1 x 2 cm in size was palpated in the ipsilateral submandibular region. Furthermore, an indurated expansion of the lingual and buccal aspects of the left mandibular body was obvious. Overlying mucosa was intact. Teeth #17 and 18 were tender to percussion. Patient had paresthesia of the left lower lip.

## Radiographic Findings

A mixed radiolucent-radiopaque lesion with ill-defined borders approximately 3.5 x 1.6 cm, arising from the bony mandibular body extending to the floor of the mouth perforating the lingual bony aspect of the left mandible, was identified on a computed tomography (CT) scan examination. The lesion appeared to involve the ascending ramus superiorly. Within the lesion, there were apparent scattered calcified matrixes. Further radiographic evaluation with a magnetic resonance imaging (MRI) scan showed extension of the lesion beyond the lingual bony wall of the mandible and involvement of the medial pterygoid muscle (see Figures 1 and 2).

## Differential Diagnosis

- Ameloblastoma
- Odontogenic keratocyst
- Ewing's sarcoma
- Osteosarcoma
- Rhabdomyosarcoma
- Central giant cell granuloma
- Multiple myeloma
- Non-Hodgkins lymphoma
- Neuroblastoma

## Histopathologic Findings

An initial biopsy was performed along with extraction of teeth #17 and 18, and the specimen was submitted for histopathologic examination. Histopathologic examination showed a wedge of mucosa surfaced by hyperplastic stratified squamous epithelium. The fibrous connective tissue exhibited scattered odontogenic rests and an extensive area of a nested, neoplastic small blue cell infiltrate, with small fragments of vital bone present at some specimen edges (see Figure 3). The infiltrate consisted of a highly cellular, monotonous population of small cells with indistinct cell borders and scant cytoplasm. Cells were small, round, and uniform, with hyperchromatic nuclei.

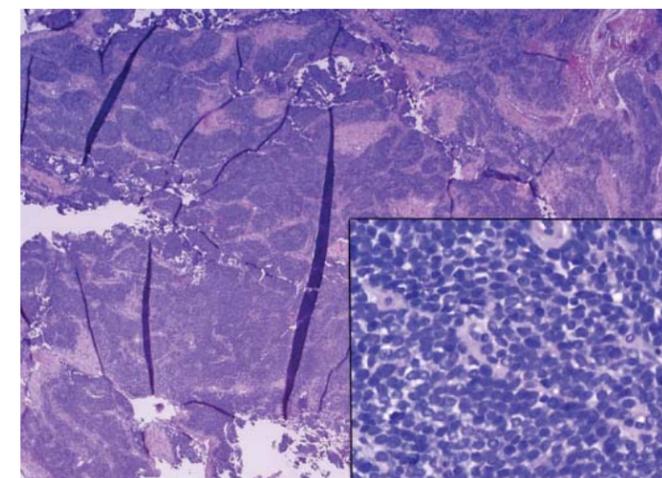
Periodic acid-Schiff staining (PAS) showed that neoplastic cells were positive for diastase-sensitive cytoplasmic glycogen. The neoplastic cells were diffusely and strongly positive for CD99 (see Figure 4a). A cellular proliferation marker, Ki-67, showed that about 40 percent of the cells were in active phases of the cell cycle (see Figure 4b). Chromosomal mapping showed translocation of chromosomes 11 and 22.

## Diagnosis

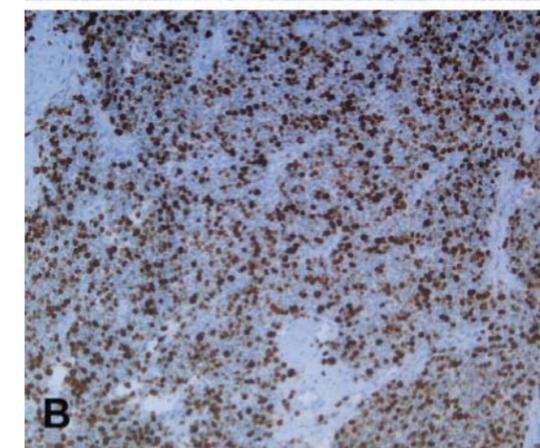
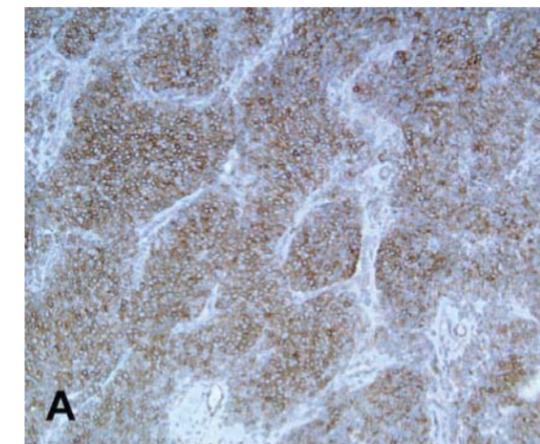
Ewing's sarcoma of the mandible.

## Treatment

A whole-body scan was performed and found to be negative for distal metastasis. The combination of chemotherapy and surgical resection with primary reconstruction with osseomyocutaneous



**Figure 3.** H&E-stained sections at low power showed oral mucosa containing a nested infiltrate of monotonous small, round blue cells (magnification is 2X). Inset: High-power view (magnification is 40X).



**Figures 4a and 4b.** Immunohistochemical studies. In Figure 4a, tumor cells were diffusely and strongly positive for membranous CD99 expression. In Figure 4b, antibodies to Ki-67 showed about 40 percent of the cells were in active phases of the cell cycle. Original magnification of both photomicrographs is 10X.

free fibula flap was the treatment of choice. Induction chemotherapy of four weeks was initially prescribed to the patient to achieve tumor shrinkage and decrease the possibility of hematogenous spread during the surgical resection. This was followed by postsurgical chemotherapy. A total of 13 weeks of chemotherapy with rounds of Ifosfamide-Etoposide-Mesna (IE), Vincristine-Doxorubicin-Cyclophosphamide-Mesna (VDC), and Vincristine-Cyclophosphamide-Mesna (VC) were administered.

Surgical resection of the tumor with good 2 cm resection margins was achieved. The left condyle was saved and reconstruction of the temporomandibular joint was avoided (see Figure 5). Intraoperative frozen sections were negative for marginal extension of the lesion. The patient was primarily reconstructed with osseomyocutaneous free fibula flap harvested from the left leg (see Figure 6).

## Discussion

Ewing's sarcoma is a rare malignancy that represents only 4 to 15 percent of all bone tumors.<sup>1</sup> However, in children it is the second-most-common primary malignant bone tumor.<sup>1</sup> Approximately 80 percent of cases occur in the first two decades of life.<sup>2</sup> Although Ewing's sarcoma may present in any bone, it has a strong predisposition for the long bones of the extremities and



**Figure 5.** Resection specimen shows the perforation of the lingual plate by the tumor.



**Figure 6.** Reconstruction was achieved by osseomyocutaneous free fibula flap. This panoramic radiograph was taken six weeks postsurgery and shows the intact plating.

the pelvis. Ewing's sarcoma involving the head-and-neck region is relatively rare and only accounts for approximately 7 percent of all cases,<sup>3</sup> and Ewing's sarcoma of the mandible, as seen in our patient, represents only 0.7 percent of all cases.<sup>4</sup>

Ninety percent of Ewing's sarcomas in the mandible are primary tumors, whereas only 10 percent progress to metastatic tumors.<sup>5,6</sup> Common symptoms of Ewing's sarcoma in the mandibular region include swelling, followed by pain, loose teeth, and paresthesia.<sup>7</sup> Typical radiographic presentation includes poorly defined osteolytic lesions, soft-tissue masses adjacent to the affected site, and destruction of unerupted teeth follicle cortices.<sup>7</sup> The most common radiographic result may be a "moth-eaten" destructive radiolucency with or without erosion and cortical destruction.<sup>5,6,8</sup> CT scans best depict this destruction. A variable periosteal "onion-skin" reaction may also be seen, as may a "sun ray" appearance; however, these are rarely manifested in the jaws.<sup>1,2,5,8-11</sup>

MRIs help to evaluate the exact location of the primary tumor and its extension. The soft-tissue contrast allows for precise assessment of the marrow and extramedullary extent of the tumor. In addition, MRIs may be used throughout treatment to identify recurrent or residual tumors.<sup>3,4</sup>

Microscopically, Ewing's sarcoma appears as a proliferation of uniform, closely packed, round cells.<sup>5</sup> These cells may be surrounded by fibrous bands and very little stroma.<sup>5,6</sup> Individual

cells have one or two round-to-oval nuclei with distinct nuclear membranes and finely dispersed chromatin.<sup>8,9</sup> Necrosis is common. The cytoplasm stains with a PAS stain in 75 percent of the cases, thus indicating the presence of glycogen.<sup>5</sup> In addition, immunostaining for CD99 (Mic-2) is expressed in more than 90 percent of Ewing's sarcoma tumors, with a characteristic membranous pattern.<sup>8,12-14</sup>

The diagnosis of Ewing's sarcoma can be very difficult and necessitates differentiation from other primitive tumors, including metastatic neuroblastoma, malignant lymphoma, small cell osteosarcoma, embryonal rhabdomyosarcoma, and primitive neuroectodermal tumor.<sup>6</sup>

Historically, Ewing's sarcoma diagnosis relied on light microscopy and immunochemical markers, which were difficult to differentiate from other round cell tumors.<sup>15</sup> However, the more recent discovery that most Ewing's sarcoma cases exhibit a reciprocal translocation of the long arms of chromosomes 11 and 22 has provided an important diagnostic tool for the determination of Ewing's sarcoma.<sup>5</sup> In this instance, the fourth band in the second region of the long arm of chromosome 11 and the second band in the first region of chromosome 22 are translocated.<sup>8,13,15,16</sup> Due to the (11;22) translocation, the hybrid protein's transcription activation domain FLI-1 is replaced by the Ewing's sarcoma sequence. This common cytogenetic feature is present in 90 to 95 percent of all cases.<sup>15</sup>

Typical treatments for Ewing's sarcoma include surgery, radiation, and, in the case of metastases, chemotherapy. The most common sites of metastatic spread are the lungs and bones.<sup>3</sup> Surgery is the treatment of choice for local control and should be carefully considered in each patient, depending on extension and location of the tumor. In our case, we used neoadjuvant chemotherapy after confirmation by biopsy to shrink the tumor mass and control occult distant metastasis. This was followed by systemic chemotherapy and radical surgery to remove the extent of the tumor. Advances in craniofacial and reconstructive surgery allow for resections of the mandibular bone with safety margins, along with simultaneous reconstruction. The vascularized fibular flap is a good solution for the reconstruction of bone defects in the mandible. The function and esthetic results obtained in our patient prove the excellence of this procedure (see Figure 7).

The prognosis for Ewing's sarcoma patients depends on early detection and metastatic spread. Patients typically experience a high incidence of relapses, which can occur up to 10 to 15 years after diagnosis.<sup>1</sup> However, facial cases of Ewing's sarcoma typically have a better prognosis than other sites because of early diagnosis.<sup>2</sup> Radical surgery, radiation treatment, and chemotherapy for systemic control of subclinical micro-metastasis has achieved a survival rate of 50 to 70 percent.<sup>5</sup> In our patient's case, he has been under regular follow-up and currently has no evidence of recurrence after two years. He will continue to be followed periodically. ■

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**Figure 7.** This clinical photo was taken six weeks postsurgery and shows a well-healed graft site.

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## Incidental Findings on Dental Radiographs: Dentigerous Cyst

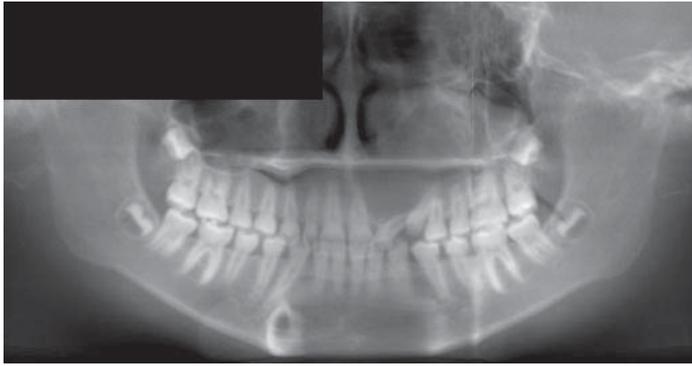


Figure 1. Panoramic image generated from CBCT data.

**D**entigerous cysts are the second-most-common cysts occurring in the jaws. A dentigerous cyst is formed as a result of fluid accumulation in the reduced enamel epithelium surrounding an unerupted tooth. These cysts typically present as well-defined pericoronal radiolucencies either superior or lateral to the unerupted tooth. Dentigerous cysts involving the posterior maxillary teeth tend to grow into and fill the maxillary sinus and, hence, are discovered late. Posterior mandibular dentigerous cysts commonly extend well into the ramus. There are often no clinical symptoms, with the exception of swelling once the cyst reaches a considerable size.

Management of a dentigerous cyst is by surgical removal, most often including the tooth or marsupialization. This is a report of one such case of dentigerous cyst involving the anterior maxilla.

An 11-year-old girl presented with a swelling in the upper jaw, asymmetry of the face, and malposition of maxillary left anterior teeth. On clinical examination, there was a swelling in the left anterior maxilla. The overlying mucosa appeared smooth and pink. There was significant displacement of the maxillary left permanent lateral incisor and canine.

The panoramic radiograph showed displacement of the left maxillary lateral incisor and canine (teeth #10 and 11), with possible loss of lamina dura on the distal aspect of the central incisor (tooth #9). The floor of the left maxillary sinus could not be discerned.

**ARUNA RAMESH, BDS, DMD, MS  
TARUNJEET PABLA, BDS, MS**

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Figure 2. Axial CBCT view showing buccolingual thinning and expansion of the maxilla by the cyst.

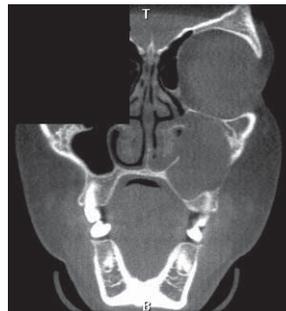


Figure 3. Coronal CBCT view showing involvement of the entire left maxillary sinus.

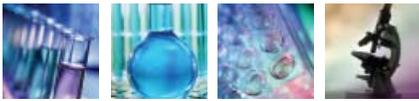


Figure 4. Sagittal CBCT view depicting tooth displacement and buccolingual maxillary expansion and thinning.

A cone-beam computed tomography (CBCT) scan was done for better evaluation of the extent and characteristics of the lesion. The CBCT scan showed a well-defined corticated expansile lesion in the left anterior maxilla displacing teeth #9, 10, and 11. The lesion measured 46 x 33 x 39 mm and appeared to be continuous with the lamina dura of the lateral incisor. The lesion extended from the distal aspect of tooth #9 to the distal aspect of the second premolar. There was significant buccolingual expansion and thinning of the maxilla, with thinning and displacement of the floor and the lateral wall of the nasal fossa. The left maxillary sinus was found to be almost completely opacified, along with possible thinning of the orbital floor.

The differential diagnosis for the lesion, based on the radiographic presentation and the age of the patient, included benign odontogenic cysts and tumors, such as dentigerous cyst, odontogenic keratocyst, ameloblastic fibroma, unicystic ameloblastoma, and adenomatoid odontogenic tumor.

The patient was referred to oral surgery for biopsy and management. Histological diagnosis was a dentigerous cyst. Surgical removal with extraction of the lateral incisor and canine was the treatment of choice. ■



## PATHOLOGY SNAPSHOT

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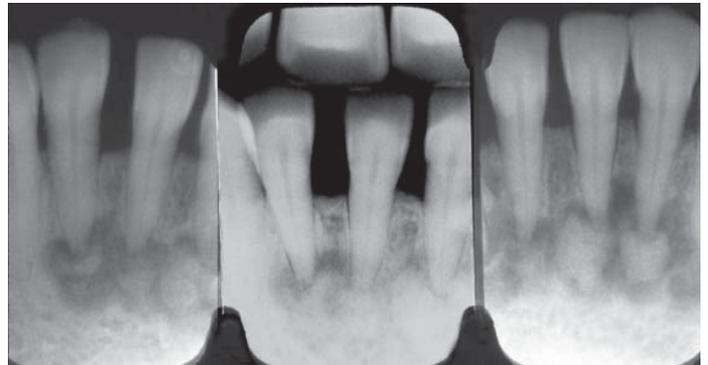
# CEMENTO-OSSEOUS DYSPLASIA

**S**INGLE- OR MULTIFOCAL CEMENTO-OSSEOUS LESIONS OF THE JAWS are commonly encountered in clinical practice and are typically discovered during the course of routine radiographic examination. These lesions evolve from completely radiolucent in the initial phase to mixed radiolucent-radiopaque in the intermediate stage to completely radiopaque in the end stage. In the initial radiolucent stage, the lesion can be easily confused with a periapical cyst, granuloma, or abscess.<sup>1</sup> When the lesion is totally radiopaque, it is indistinguishable from generally well-recognized radiopaque lesions, such as condensing osteitis or osteosclerosis.

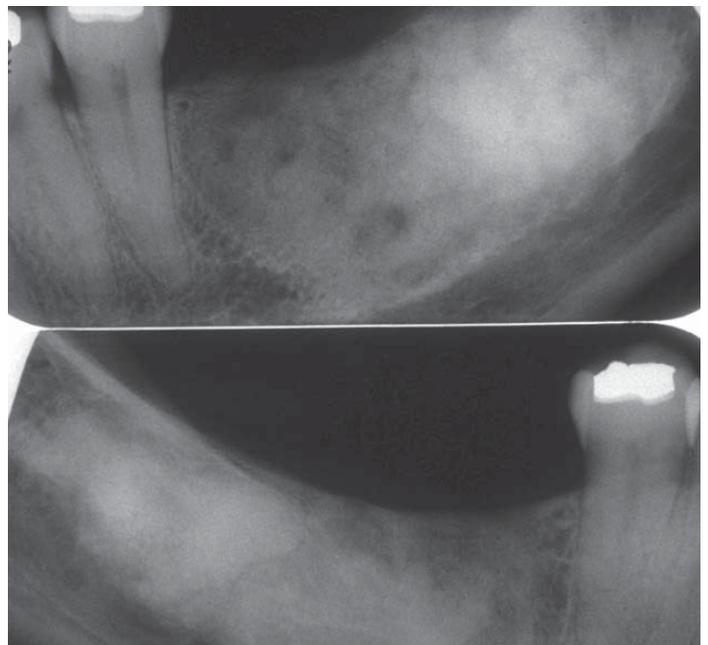
The classic radiographic presentation of cemento-osseous dysplasia is in the anterior mandible, generally restricted between canine and canine. A more diffuse process involving two or more quadrants is referred to as florid cemento-osseous dysplasia. While both of these entities are more commonly noted in middle-aged black females, a solitary area of radiopacity referred to as the focal subtype of cemento-osseous dysplasia may be seen with increased frequency in white females. It is useful to remember that in the absence of any symptoms or cortical expansion, these lesions do not typically require further treatment. Careful assessment with pulp vitality testing and to ensure lack of cortical expansion will help separate these innocuous lesions from those lesions that require more definitive therapy. In mature lesions of florid cemento-osseous dysplasia when the bone is entirely radiopaque, spontaneous formation of simple bone “cysts” (empty cavity) has been described.<sup>2</sup> Additionally, it is important to note that when any procedure is undertaken in these hypovascularized areas of bone, such as implant placement, the patient is at increased risk of developing osteomyelitis. ■

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**Figures 1 and 2. Mixed radiolucent and radiopaque lesions representing periapical cemento-osseous dysplasia (above) and florid cemento-osseous dysplasia (below).**



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## CLINICAL CASE STUDY

**MICHAEL CWIKLINSKI, DMD, MSED**

*Dr. Cwiklinski is a periodontist with Brookline Periodontal Associates.*

# ROOT COVERAGE IN THE ESTHETIC ZONE USING THE SUPRAPERIOSTEAL ENVELOPE PROCEDURE

**A**CHIEVING ROOT COVERAGE IN THE ESTHETIC ZONE CAN BE DIFFICULT using traditional techniques. Placing a subepithelial connective tissue graft or acellular dermal matrix graft over areas of recession often involves using vertical releasing incisions and/or splitting the interdental papilla to raise a flap. These surgical incisions can lead to possible scarring and loss of papilla height, which may be unacceptable to patients in the esthetic areas of the mouth. By using a supraperiosteal envelope technique, the need for incisions across the papilla or vertical incisions is avoided, leading to better healing and a more rapid esthetic result.

The patient presented is a 45-year-old male who wished to

have veneers placed on the maxillary teeth to remake his smile. He was referred for soft-tissue grafting to cover the recession on teeth #5, 6, and 8 through 12 (see Figure 1). Due to the esthetic nature of the case and acceptable local factors, it was decided to perform a supraperiosteal envelope technique. Subepithelial connective grafts were harvested from the palate using a single-incision, split-thickness technique. Incisions were made through the buccal sulci of each tooth and a split-thickness dissection was done, tunneling under the overlying tissue to connect each tooth (see Figure 2). The grafts were placed and sutured (see Figure 3). The esthetic goal was achieved, as represented by the eight-week postoperative photo (see Figure 4). ■



**Figure 1. Preoperative photograph of 45-year-old male prior to undergoing supraperiosteal envelope technique.**



**Figure 2. Supraperiosteal tunnel elevated.**



**Figure 3. Connective tissue graft sutured in place (teeth #5 and #11 and 12 were done at a different appointment).**



**Figure 4. Eight-week follow-up depicts the desired esthetic outcome.**

### 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.

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## The 8th Annual MDS Foundation Golf Tournament: A Resounding Success

Turner Hill Golf Club in Ipswich was buzzing with activity on Monday, June 29, 2009, as more than 140 MDS Foundation supporters gathered for a day of golf, dinner and live auction bidding. The rainy morning gave way to an afternoon of sunshine as golfers made their way along the challenging and spectacular course. The day was capped off with a cocktail hour in the historic grand mansion followed by a delicious dinner and exciting live auction hosted by MDS Foundation President Dr. Richard LoGuercio and Drs. John A. Herzog and Michael P. Seidman, and Heidi Olwell of Dental Associates of Cape Cod. Thanks to everyone who attended the outing and to all of the sponsors and donors who supported this fundraiser, which raised approximately \$55,000 for the MDS Foundation.

Throughout the day, golfers had the opportunity to participate in various contests: Drs. Herzog and Seidman, Tom Picone of 3M ESPE, and Renato Perfetti won Closest to the Pin contests; Jesse Rodriguez sank the 30-foot putt to win the Putting contest; James McDonough and Betsy Totten won the Longest Drive contests; and Dennis O'Toole won the Closest to the Line contest.

This year's tournament would not have been possible without the dedication of the MDS Foundation Golf Committee, chaired by Dr. Herzog. Special thanks to our tournament sponsor Gentle Dental, as well as MDS Insurance Services, Inc., Plaza Catering & Deli, Blue Cross Blue Shield of Massachusetts, Nobel Biocare, UBS, Doral, and Rosen & Associates, LLP, for their sponsorships and support.

In addition, the following MDS district dental societies generously supported the tournament:

- Berkshire—\$400
- Cape Cod—\$1,000
- East Middlesex—\$250
- Merrimack—\$1,000
- Metropolitan—\$1,000
- Middlesex—\$500
- North Metropolitan—\$500
- North Shore—\$1,000
- Southeastern—\$2,000
- South Shore—\$1,000
- Wachusett—\$1,000
- Valley—\$1,000



Please consider making a donation to the MDS Foundation at [www.mdsfoundation.org/giving](http://www.mdsfoundation.org/giving) so that we can continue to deliver oral health care to the underserved. All proceeds benefit the MDS Foundation, the charitable arm of the Massachusetts Dental Society. The MDS Foundation is dedicated to improving access to dental care for underprivileged children and adults, and enhancing educational opportunities for those who wish to pursue a dental auxiliary career.

### Tournament Winners

#### 1<sup>ST</sup> PLACE GROSS

Charles Hoye, DMD  
Sam Gelso, DMD  
William Hoye, DDS  
Bruce Doyle, DMD

#### 2<sup>ND</sup> PLACE GROSS

James McDonough, DDS  
Tom Picone  
James McDonough  
Peter McAllister, DMD

#### 1<sup>ST</sup> PLACE NET

Peter Hjorth, DMD  
David Cormier, DDS  
Matthew Curtin, DMD  
Peter Flaherty

#### 2<sup>ND</sup> PLACE NET

Alan K. DerKazarian, DMD  
Alan H. DerKazarian  
Mark DerKazarian, DMD  
Edward DerKazarian

#### 3<sup>RD</sup> PLACE NET

Richard LoGuercio, DDS  
Renato Perfetti  
Michael Matonis  
Sean Murphy

#### 1<sup>ST</sup> PLACE SCRAMBLE

Brian McDowell, DDS  
Carl Getman  
Todd Rowe, DMD

#### 2<sup>ND</sup> PLACE SCRAMBLE

Doyle Williams  
Brian Donahue  
Michael Jensen  
Tom Watson



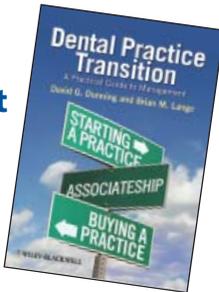


**NORMAN BECKER, DDS, EDITOR EMERITUS**

## Dental Practice Transition—A Practical Guide to Management

**DAVID G. DUNNING, PHD,  
BRIAN M. LANGE, PHD**

*Wiley-Blackwell*



Although this text basically is aimed at the recent graduate, in the newly tightened economy we are all facing, it can be used to reevaluate all of our practices. With individual, almost stand-alone chapters, the editors have gathered practical advice from various sources, such as private practitioners, academics, practice management consultants, financial advisors, and behavioral scientists to “reflect on the process of making a career choice and some of the key issues in that process.”

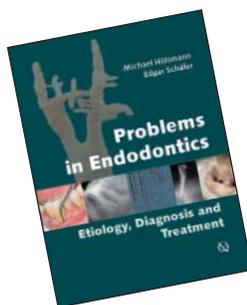
A look at the contents of one of the chapters demonstrates the value to be gathered from these experts. The chapter’s section titles include: Internal marketing and customer service: How do they relate?; Internal marketing; The three levels of patient-friendly customer service; Excellence in communication skills; Asking for referrals; First impressions count; The welcome packet; Morning huddle; Portraying a professional image; Guidelines for dental dress for success; The significance of the team to the patient; and Definition of patient services.

This type of format is repeated throughout the text, with each chapter presenting practical hints for practice management. And let’s face it: We can all use refreshing hints within our practices.

## Problems in Endodontics—Etiology, Diagnosis and Treatment

**MICHAEL HÜLSMANN,  
EDGAR SCHÄFER (EDITORS)**

*Quintessence Publishing*



“Endodontics is enjoyable” kicks off the preface of this book. It seems that this view is shared by many in the profession, in spite of the often difficult conditions that prevail in everyday practice. This notion has led to a sort of “endodontic euphoria” in the past few years. As ever, when procedures are not only fascinating and absorbing, but also have good prognoses, even under ordinary practice conditions—provided that basic treatment principles are upheld—there is a tendency to go deeper and deeper into the subject and risk treating increasingly more complex and difficult cases. The editors and their contributors use this textbook to try to make those more complicated cases easier to handle.

Starting with diagnosis, the text covers topics such as preserving pulp vitality, treatment planning, health-related issues, anesthesia, access, and visualization. Chapters feature discussion of other topics, such as the mechanics of preparing

teeth for obturation, as well as lessons in managing accidents and other problems that may occur.

Chapters are nicely presented, with warning hints and color-coded important suggestions and messages prominently displayed, making for an easy reference. Each chapter also includes informative case reports. The use of charts, radiographs, and photographs adds to the learning experience. The techniques and instruments for clinical management are discussed and referenced by scientific literature.

The text offers a wealth of tips and treatment options for the specialist, as well as the general practitioner.

## Introduction to Metal-Ceramic Technology—Second Edition

**W. PATRICK NAYLOR**

*Quintessence Publishing*



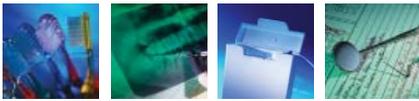
I should put forth a disclaimer before starting my review: This book holds a personal appeal for me, as it is dedicated to the late Ralph W. Phillips, research professor emeritus of dental materials at Indiana University School of Dentistry, who passed away in May 1991. I was fortunate enough as a student at Indiana University to be included on his research staff, and became his friend. He was always available as a mentor, advisor, and friend. Those who knew Ralph still miss him.

This second edition has been updated to present the theory and technical procedures for physically constructing an esthetic metal-ceramic restoration using contemporary dental porcelain systems. The updated text includes an increased emphasis on evidence-based documentation and expanded dental materials content, as well as updated dental porcelain and dental alloy classifications.

Although it may appear that this text is aimed at the dental laboratory technician, the fundamentals involved with this popular restoration will help the practitioner in diagnosis, preparation, and construction of the crown. ■

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## ART OF DENTISTRY

### ERIC K. CURTIS, DDS, MAGD, ELS

*Dr. Curtis is past president of the American Association of Dental Editors. In 2006, he received the American Dental Association's Distinguished Editor Award.*

## SPLITTING HAIRS

I WENT ON VACATION TO SPAIN AND GREW A BEARD. IT WAS A WHIM, really, born of a holiday impulse to escape confinement and heightened by the pleasure of anonymity. OK, and completely ignoring that American icon, Charles Barkley—who said, “Why do bald guys always wear beards? When I started to go bald, I took it like a man”—I may also have been harboring the tiniest curiosity about whether adding hair to my jowls might balance what nature has been busy erasing from my cranium. Friends in Valencia, including an architect who has worn a beard himself for 25 years, encouraged me. Lingering over late-night dinners, they said things like “Give your razor a rest. It makes you look like a professor” and “Now you look like a doctor.”

As stubble bloomed into graying bristle, my wife and kids urged me to keep it going. “You look smart, Dad,” my daughter said. “Literary,” my wife murmured. I read that Sean Connery has sported a beard in some 17 films since the 1990s, and I allowed myself to imagine that my spreading facial hair was more than a novelty. It seemed almost dashing. I looked in the mirror and pictured the neatly combed whiskers of Czar Nicholas II.

But back home, people saw my beard as less Nicholas and more Rasputin. At first, the folks I encountered in my dental practice smiled and called me Abe Lincoln, Brigham Young, and Santa Claus. Then, as if I were missing the message, reactions turned blunt. “What happened? You used to be nice looking,” one woman scolded. “What is that on your face?” another demanded to know. As time went on, the comments grew wilder and woollier. My neighbors greeted me with “Hey, mountain man!” or “Yo, ho, pirate!” My niece allowed that my grizzled snout reminded her of the family schnauzers. Finally, my mother put the truth on the table: She told me I looked like a terrorist.

Although a 2000 video made public in 2006 by the *London Times* revealed that the previously barbigerous Mohamed Atta and Ziad Jarrah shaved for their murderous assignment in 2001, Americans associate beards with bombs. Twentieth-century revolutionaries and dictators from Lenin to Che Guevara to Ayatollah Khomeini wore well-publicized whiskers. The beard's threat to democracy was such that in the 1960s, the Central Intelligence Agency supposedly considered a mission to smuggle depilatory into Cuba to relieve Fidel Castro of his famous wispy strands. (In Cuba, people are said to still evoke Castro without even using words, simply by stroking an imaginary beard.) Washington science teacher Gary Weddle garnered news coverage on the fifth anniversary of 9/11 in 2006 because he stopped shaving after

the September 11 terrorist attacks, vowing to let his beard grow until Osama bin Laden was captured or killed.

Among my peers, my beard rendered me invisible. I spent two days at a professional meeting introducing myself to people I have known for years. “I'm so sorry,” I heard colleagues say over and over, “but I just didn't recognize you.” “You look . . . uh . . . distinguished,” said the association's president. “She means extinguished,” interjected the association's executive director.

But more than anything, to a vocal minority of the people I interact with, at any rate, my beard looked somehow threatening. At one time, beards were “emblems of wisdom and piety,” in the words of Thomas Babington Macaulay. Now they are symbols of shiftiness. While goatees have made a fashion comeback of sorts, full beards still raise eyebrows. Beards are outlandish, even outlawish, the province of bad boys and yokels. Cowboy heroes out West may wear luxurious Wyatt Earp mustaches, but the desperadoes wear beards.

Because I am a dentist—veritable pop-culture icon of pain, power, and brush-twice-a-day routine—many people received my hirsute declaration as a threat to social order. “Who do you think you are now,” several of my patients asked me, “some kind of free spirit?”

Americans are supposed to be comfortable with fluid identities. This, after all, is the land of extreme makeovers. Beards clearly help in this respect. When Robin Williams wants to look serious, he grows a beard. When David Letterman gets bored, he grows one, as he did during the two-month TV writers' strike last year. Back on the air, Williams didn't hesitate to compare Letterman to Robert E. Lee, a rabbi, and an Iraqi mullah, and told him, “You should have your own cough drop.” New York Mayor Michael Bloomberg gave Letterman's beard a key to the city. Letterman himself told his audience, “I know what you're thinking. You think Dave looks like a cattle-drive cook.” Still, a cartoon showed a couple at home watching Letterman's show. “Shhh,” one said to the other, “he's about to do his opening fatwa.”

If hair, as journalist Shana Alexander wrote, “brings one's self-image into focus,” my beard radically scrambled mine. I don't mind projecting wisdom, or even virility, but desperado just doesn't fit my self-concept. Even in Spain these days, a beard may look threatening. A Spanish law professor with a long beard was forced off an airplane a couple of years ago on the island of Mallorca by fellow passengers who feared he was a terrorist. The thought of renewing my passport with a fuzzy-faced photo was enough to make me shave. ■

