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Guest Editorial Anomalies in Health Care Attributable to the Separation of Medicine and Dentistry

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It is unusual to find an article on a resolutely dental topic (periodontal disease) in a medical journal (see Palomo et al[1] in this issue). Menopause (the condition) is such a pervasive, multisystem phenomenon that it makes abundant sense that a journal named for that condition should bring together under one roof information about all those organ systems that are afflicted—including the stomatognathic system, to use a fancy term for the mouth and masticatory apparatus. From the perspective of a double-degree oral and maxillofacial surgeon, it is encouraging to see such an article in *Menopause*.

Before commenting on this article by Palomo et al[1] entitled "Periodontal assessment of postmenopausal women receiving risedronate," I wish to call to the attention of the readership of *Menopause* a strange sociological phenomenon: the occasional shortfall in quality of health care that is attributable to the historical accident whereby medicine and dentistry evolved as separate professional realms with reciprocal educational blind spots. The separation is said to go back to the Medieval "guild" system in which "tools of the trade" provided an organizing principle. Dentists and the "pullers of teeth" were grouped with the apothecaries (shopkeepers) and surgeons with barbers.[2] The separation in more contemporary times has been perpetuated based on disparate educational requirements, with dentistry focusing on the mastery of highly technical mechanical skills and the use of specialized materials and instrumentation.

A compelling example of the impact of this separation on patient care is evident in the evolution of medical and dental practices in the management of patients with dental sepsis and infective endocarditis. Based on a classical experimental model of endocarditis, transient bacteremias exceeding a critical threshold—especially those thought to have been provoked by manipulation of teeth and gums by dental professionals—used to be viewed by physicians as the most likely causative factor in cases of infective endocarditis.[3] Such thinking led to stringent AHA recommendations for prophylactic administration of antibiotics before dental and other invasive procedures.[4] In the 1970s, the Draconian requirement for preoperative intravenous antibiotics for any patient with a valvular prosthesis or a prior episode of endocarditis who required an invasive dental procedure paradoxically created a barrier to the effective provision of preventive dental care in non-hospital-based dental offices. Eventually, it was noted that selectively protecting the patient from only those transient bacteremias induced in dental offices made limited sense when one considered that a typical citizen goes to the dentist twice a year but experiences a transient bacteremia with every meal and with all home dental hygiene activities.[5] As thinking on this subject evolved, studies started to suggest that the risk of life-threatening allergic reactions to prophylactic antibiotics is comparable with the risk of an episode of endocarditis arising from an unprotected dental procedure.[6,7] Currently, transient bacteremias are held to be a common denominator in infective endocarditis with subtle anatomical and immunologic actors being regarded as important etiologic considerations.[8] Recommendations for antibiotic prophylaxis have become more moderate, and the value of dental health maintenance to at-risk patients has been reaffirmed.[9]

The treatment of temporomandibular joint dysfunction (TMD) is a second realm in which there has been a significant gulf between medical and dental communities. When neither a traumatic insult nor a systemic disease can be invoked, TMD is an entity for which a psychosomatic explanatory model provides useful insights and therapeutic opportunities.[10] Because of the emphasis placed on the acquisition of complex mechanical skills in dental education, most dentists share with many physicians a skills deficit and a built-in reluctance to explore psychological issues with patients or to make referrals for psychological evaluation and treatment. Deeply entrenched patterns of referral based on the anatomic locus of presenting symptoms lead most patients with TMD symptoms to seek treatment from dentists and oral and maxillofacial surgeons who, as a group, have little formal training in the recognition and management of psychosomatic illness. (Were it the case, however, that all such patients were directed to psychologists or psychiatrists, the physical concomitants of this complex condition might well be addressed inadequately.)

HIV/AIDS is a third condition in which diagnosis and treatment was initially complicated by the educational divide alluded to above. Unknown before 1981, HIV/AIDS rapidly emerged as a systemic disease with enormous global impact. Characteristic lesions found in the mouth (hairy leukoplakia; HIV-associated gingivitis, periodontitis, and salivary gland disease; oral candidiasis; and Kaposi's sarcoma) have prognostic significance in marking the progression of HIV infection to full-blown AIDS.[11] Initially confusing to both groups of clinicians, this disease entity forced dentists to learn more about the immune system, infectious diseases, and universal precautions, whereas physicians needed to learn about the oral manifestations of systemic disease.

In their report in this issue of *Menopause*, Palomo et al[1] convincingly present evidence that the use of risedronate in the (medical) treatment of osteoporosis in postmenopausal women also confers a (dental) periodontal benefit as judged by a variety of standard indices.

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Readers of *Menopause* and potential prescribers of bisphosphonates need to know that, in the oral and maxillofacial surgical literature and elsewhere, an alarming number of cases of osteonecrosis of the jaws are now being reported in association with the intravenous use of bisphosphonates in cancer patients. Palomo et al[1] somewhat tentatively cite a recent article reviewing 63 cases in which this complication occurred, but they have imbedded this citation in a paragraph that opens with a reference to an article suggesting a *therapeutic* use for bisphosponates in osteomyelitis. They end the same paragraph with a claim that such complications are not reported in large clinical trials of low-dose bisphosphonates used in the treatment of osteoporosis.

It is important to note that the Ruggiero et al[12] article cited by Palomo et al[1] includes seven patients taking oral bisphosphonate therapy for osteoporosis in addition to 56 patients receiving intravenous therapy for cancer. These 63 patients came to light cumulatively in just two hospitals. We are seeing in this and other reports[13] what may prove to be the proverbial tip of an iceberg. Given the wide clinical use and the tenacious persistence of the bisphosphonates in human tissues, it is possible that we may be in the early stages of an emerging epidemic of cases of avascular necrosis of the jaws in which cases associated with oral medication manifest themselves with a long latency period.

Perhaps cases of aseptic necrosis of the jaws associated with oral bisphosphonate use in the treatment or prevention of osteoporosis will prove to have a low frequency of occurrence relative to cases associated with intravenous bisphosphonate use for cancer. Such cases may also prove to be much less severe, less likely to occur spontaneously, and to be more dependent on dental extractions or other invasive procedures. However, given the large number of patients being treated for osteoporosis relative to those being treated for cancer, aseptic necrosis associated with oral bisphosphonates may eventually emerge as a significant concern from the oral and maxillofacial surgical perspective and, of course, for the individual patient so afflicted.

The Palomo article[1] stops short of recommending oral bisphosphonates for use in the treatment or prevention of periodontal disease. Such caution seems well advised, especially in light of the emerging aseptic necrosis story. It is interesting that the dental benefits currently claimed for bisphosphonates have also been cited as a benefit of hormone therapy (August M, personal communication).

Here is another clinical entity seen from different perspectives by members of the medical and dental communities. It is one in which an emerging clinical concern demands an interdisciplinary approach to problem solving. I applaud the inclusion of the Palomo article[1] in *Menopause*, and I thank the editors for this opportunity to comment.

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References

1. Palomo L, Bissada NF, Liu J. Periodontal assessment of postmenopausal women receiving risedronate. Menopause 2005;12:685–690.
2. Lyons AS, Petrucelli RJ II. History of Medicine. New York: Abrams, 1987.
3. Durack DT, Beeson PB. Experimental bacterial endocarditis. I. Colonization of a sterile vegetation. Br J Exp Pathol 1972; 53:44–49.
4. Kaplan EL. Prevention of bacterial endocarditits. Circulation 1977;56:139A–143A.
5. Guntheroth WG. How important are dental procedures as a cause of infective endocarditis? Am J Cardiol 1984;54:797–801.
6. Clemens JD, Horwitz RI, Jaffe CC, Feinstein AR, Stanton BF. A controlled evaluation of the risk of bacterial endocarditis in persons with mitral-valve prolapse. N Engl J Med 1982;307:776–781.
7. Tzukert AA, Leviner E, Benoliel R, Katz J. Analysis of the American Heart Association's recommendations for the prevention of infective endocarditis. Oral Surg Oral Med Oral Pathol 1986; 62:276–279.
8. Seldin EB. Dental factors in infective endocarditis [editorial]. Circulation 1985;71:1093–1094.
9. Dajani AS. Prevention of bacterial endocarditis. JAMA 1990; 264:2919–2922.
10. Management of temporomandibular disorders. National Institutes of Health Technology Assessment Conference Statement. J Am Dent Assoc 1996;127:1595–1606.
11. Greenspan JS, Greenspan D (eds). Oral Manifestations of HIV Infection. Chicago: Quintessence, 1995.
12. Ruggiero SL, Bhoomi M, Rosenberg TJ, Engroff SL. Osteonecrosis of the jaws with the use of bisphosphonates: A review of 63 cases. J Oral Maxillofac Surg 2004;62:527–533.
13. Marx RE. Pamidronate (Aredia) and zoledronate (Zometa) induced avascular necrosis of the jaws: A growing epidemic. J Oral Maxillofac Surg 2003;61:1115–1117.