The success of our clinic is a result of the continuous support and numerous referrals from practicing professionals in the community. Because you allow us to participate in the care of your patients, in appreciation, we dedicate this newsletter to you. Within this issue we will introduce you to new team members and summarize our accomplishments of the past year. We also want you to be aware of the services we can provide to your patients beyond the diagnosis and management of patients with temporomandibular disorders (TMD) and associated postural dysfunction. These include management of sleep apnea including oral appliances, all aspects of oral medicine and non-odontogenic tooth pain. Our multi-disciplinary team will address both the physical diagnosis and psychosocial and behavioral issues related to all of these disorders. Since the latter factors typically predict patient outcome best, our team includes a health psychologist to address mind-body issues. We are also including a brief case report that focuses on differential diagnosis and reflects the care we take with your patients.

We are also very involved in the educational, research and service mission of the School of Dentistry (SOD). Besides the courses we routinely offer the undergraduate students each year and the courses we offer the graduate residents, we increased our teaching effort for the dental community through more continuing education. Finally, we completed research projects, submitted four grants to the National Institute of Health (NIH) and established national and international collaborative research projects. All of these activities improve our ability to help you manage your patients by addressing their concerns and therefore improving their quality of life. We appreciate your support.

Eric Schiffman DDS MS
Director of the Division of TMD and Orofacial Pain

Clinic Faculty and Staff

Dentists
Gary Anderson, DDS, MS
Subha Giri, DDS, MS
Cory Herman, DDS, MS
Mike John DDS, MPH, PhD
Mariona Mulet, DDS, MS
Donald Nixdorf, DDS, MS
Eric Schiffman, DDS, MS

Physical Therapists
Karen Decker, PT
Patti Weber, PT

Health Psychologist
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Hours
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8:30am to 4:00pm

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2009 Upcoming Events
TMD Miniresidency
September 21-23, 2009

Management of the Behaviorally Challenging Patient:
A Lecture & Workshop
October 16, 2009

For information go to: www.dentalce.umn.edu or call: 612-625-1418
Education Updates

In conjunction with the U of M Continuing Dental Education, four TMD courses were offered during the fall semester of this year. In September, we had our annual TMD mini-residency that includes dentists and physical therapists from across the country. This three day course features both didactic and clinical training for treatment of TMD. During this unique intermediate level course, participants observe both evaluations and treatment of patients with varying symptoms of jaw, head and neck pain. Course participants finalize this clinical experience by evaluating and developing a treatment plan for a new patient under the supervision of TMD faculty. Participants also learn to integrate health psychology into the patient’s overall management strategies when appropriate. This year the TMD mini-residency is scheduled for September 21-23, 2009. Please contact dentalce.umn.edu to register.

The faculty also presented two advanced seminars in TMD, Orofacial Pain and Oral Medicine. Senior faculty presented lectures varying from case presentations to the effect of occlusion on TMD. The second course began with Dr. Schiffman’s interpretation of his research findings and the effect this research has on his own clinical practice. The course also offered opportunities for participants to choose topics of interest. Finally, the participants interacted with faculty team members utilizing a case presentation format. In late October Dr. Gary Anderson presented an evening of TMD with emphasis on case presentations at Clinical Grand Rounds. We are always willing to consider other continuing education topics that interest you.

Training for American Board of Orofacial Pain (ABOP)

The AAOP was founded in 1994 in response to the need for a valid certification process for dentists managing patients with TMD and Orofacial Pain. The ABOP offers an annual certification practice-related examination in the field of orofacial pain to qualified candidates. Dentists who have successfully completed the ABOP credentialing process and examination are issued certificates as certified by the American Board of Orofacial Pain and designated as Diplomates of the American Board of Orofacial Pain.

The University of Minnesota TMD, Orofacial Pain and Oral Medicine Clinic faculty sponsors an annual Mock Board examination. This ‘mock’ exam consists of both written and oral examination questions that will prepare you for success in the ABOP certification examination. This year was the first year that residents from other TMD and Orofacial Pain Programs around the US and Canada were invited to participate in this unique and challenging learning opportunity. Please contact Dr. Mulet at mulet001@umn.edu if you would like to register for 2010.
Research Updates

After five years of effort and dedication to validate the Research Diagnostic Criteria for Temporomandibular Disorders, Eric Schiffman and his team submitted seven manuscripts for publication from the results of the $8.2 million NIDCR funded research grant. The Journal of Orofacial Pain will publish the results in an upcoming issue dedicated to these findings. The findings were also the workshop topic during the annual meeting of International Association for Dental Research (IADR) in Toronto. A second workshop to develop empirically derived diagnostic criteria for all orofacial pain conditions will occur at the 2009 IADR meeting in Miami.

Currently, four new grant proposals have been submitted to NIH to investigate the clinical relevance of TMJ intra-articular disorders, to develop guidelines for use of TMJ imaging (Lead Eric Schiffman) and to further refine the diagnostic criteria for TMD pain (Lead Mike John). In addition, we proposed to assess the relationship between TMD pain and co-morbid conditions of migraine and fibromyalgia (Lead Ana Velly) as well as the methodology to develop personalized care for TMD patients (Lead James Fricton). At the same time, Don Nixdorf has received NIH funding to work with the Dental Practice-Based Research Networks (DPBRN) to investigate the incidence of post-operative pain associated with endodontic procedures as well as the presumed low incidence of chronic pain after these procedures. We are excited to continue with our tradition of funded and meaningful research to help a diverse group of patients with orofacial pain.

New Research Faculty

Please welcome Dr. Ana Miriam Velly as a Research Associate in the Department of Diagnostic and Surgical Sciences in the School of Dentistry and an Epidemiologist in the Division of TMD and Orofacial Pain. Dr. Velly is Director of the Registry for NIH/NIDCR’s TMJ Implant Registry and Repository (TIRR). She is currently serving as President of the Neurosciences group of the International Association of Dental Research. Dr. Velly has been highly innovative as an investigator throughout her career. Her strength lies in the diversity of her science education. Besides her dental degree, she has her master’s degree in Neurological Sciences, PhD in Epidemiology and completed a Postdoc in the Randomized Clinical Trial Unit in the Department of Epidemiology at McGill University. Ninety percent of Dr. Velly’s effort is focused on clinical research in TMD and Orofacial Pain. She lectures in courses related to epidemiology and clinical research. Dr. Velly is also actively engaged in many international projects.

Collaborative Research and Visiting Scholars

We have had the pleasure of collaborating with three visiting researchers during this year. Dr. Adel Moufti from Newcastle University (United Kingdom) worked with Dr. John in measurements of outcome following TMD treatment and the influence on the patients’ quality of life. Dr. Daniel Reissmann from the University of Leipzig (Germany) also worked with Dr. John and shared his expertise in the development of a comprehensive and meaningful Oral Health Questionnaire. Dr. Thomas List, a senior researcher and professor at Malmö University (Sweden), visited our division during his sabbatical leave and worked with Dr. Schiffman on their mutual research about the relationship between TMD and different headaches types. In October Dr. Schiffman spent two weeks at Malmö University continuing this collaborative endeavor. In addition to the research activities, each scholar attended and presented seminars to the faculty and residents.
Case Report

A 24 year-old female who is an event coordinator presented with a chief complaint of tooth pain of #19. [To maintain privacy personal data was modified].

HPI: She described the onset of pain in the tooth/area 4-5 years ago as an intermittent pain that lasted “seconds” at an intensity level of 4-5/10. Her pain was sometimes preceded with a tingling sensation; there were no known aggravating or triggering features. Multiple clinic exams and PA radiographs revealed no pathology. Over the last 8 months, pain has been increasing in frequency and severity. Now, she experiences approximately 5 episodes of 8-9/10 pain per hour that lasts 1-2 minutes. In between episodes she has a dull, achy sensation that she does not consider pain. Her familiar pain can be triggered by brushing her teeth, pursing her lips, eating and drinking. Her perception of pain decreases with digital pressure applied to the inferior border of the mandible, under #19.


PSH: Tonsillectomy, 3rd molar removal.

PDH: H/O full orthodontic banding as an adolescent. H/O regular dental visits, has excellent oral hygiene and 2 composite occlusal fillings, 1 on each maxillary 1st molar. RCT tooth #19: 12 months ago and re-treatment 2 months ago (extra sore after this appointment).

Exam: Vitals are within normal limits (WNL). Weight and height recorded. Cranial nerve exam revealed decreased sensitivity to pin-prick over the skin just inferior to the left vermilion border (patient unaware of this finding). General neuro exam: WNL. Palpation revealed tenderness along the left temporal, masseter & sternocleidomastoid muscles, as well as posterior digastric/mylohyoid muscles. Although not definitive, the patient recognized that palpation of the floor of her mouth reproduced some of her familiar pain. Intra-oral exam revealed excellent oral hygiene, stable occlusion bilaterally, no other missing teeth, adequate saliva, and mild-moderate percussion sensitivity of #19.

Imaging: Brain MRI with and without contrast revealed no abnormal findings, ruling out a vascular loop near CN V nerve-root (a potential cause of trigeminal neuralgia). Cone-bean CT revealed over-extension of distal root filling material of #19, but not into the inferior alveolar nerve canal. Review of PA radiographs confirmed overfill occurred with endodontic re-treatment 2 months prior.

Can you determine the differential diagnosis? See answer on the last page.

Featured Alumnus of the University of Minnesota TMD Graduate Program

After receiving his Masters’ degree in 1994, Edward F. Wright, DDS, MS, MAGD, was promoted as the head Air Force dentist for TMD, and he was selected as the Military consultant to the Surgeon General for TMD. He has since retired from the Air Force and is now a faculty member of the University of Texas Health Science Center in San Antonio. Dr. Wright states, “The program gave me an appreciation for the multidisciplinary approach of diagnosing and treating TMD.....[It] gave me the skills to provide much more timely and effective therapies for TMD and other associated problems.”

During the residency, Dr. Wright learned to conduct a clinical trial assessing the effectiveness of splint therapy. Subsequently, this research experience enabled him to conduct clinical trials with physical therapists, rheumatologists and otolaryngologists. Through his clinical trials he has answered some of his burning questions regarding cost-effective TMD treatment techniques, modified his treatment approaches and shared his findings with both his colleagues and his patients through numerous publications. Besides his published research literature, he wrote the Manual of Temporomandibular Disorders for the general dentist available at 800-862-6657. Dr. Wright has also been very active developing guidelines based on the evidence based research on TMD. He continues to direct courses at the University of Texas. When asked about his current interests and hobbies, Dr. Wright states, “I am a humanitarian who’s..... hobby is to advance society’s knowledge and skills in TMD.” We are the beneficiaries of his commitment and dedication to this field.
Meet Our Residents

As each new graduate dentist begins the TMD program, he selects a research topic and establishes a hypothesis and research plan. When not working on academics and their research endeavors, the four outstanding resident dentists successfully integrate into our clinic with senior faculty and staff. In order to begin clinical rotations, each dentist must fulfill academic requirements for didactic courses including anatomy and pathophysiology of TMD/orofacial pain. Under the supervision of the faculty, each dentist must demonstrate competency in evaluation skills, differentiating diagnoses and developing treatment plans. Our residency program allows the graduate dentist to thrive academically and provides supervised clinical opportunities in the management of conditions related to TMD/orofacial pain, oral medicine, and sleep. As faculty we see the transformation of our residents from novice learners to capable professionals who can integrate evidence based research with case history, TMD signs and symptoms and who can compassionately provide appropriate treatment.

Rodrigo Lima, DDS, MS

Our chief resident, Dr. Rodrigo Lima is from Brazil. He completed his DDS and MS in Oral Rehabilitation and is in the process of completing his PhD from the University of Sao Paulo. While at the University of Minnesota, he is working with Drs. Schiffman and Nixdorf and is studying whether psychophysical factors influence the sensation of pain through quantitative sensory testing (QST). The aim is to determine the most clinically relevant psychophysical factors influencing pressure pain threshold values as a specific QST factor in the TMD population.

Thiago Nascimento, DDS, MS

Dr. Thiago Nascimento is from Brazil as well. He obtained his DDS from Sao Paulo State University - School of Dentistry. After obtaining his degree he did a dental fellowship in TMD/Orofacial Pain and completed his MS in Neuroscience with emphasis in headaches at the University of Sao Paulo Medical School. He is currently working under the mentorship of Dr. John on a prospective cohort study, to evaluate if the presence of migraine headaches in a TMD population is associated with jaw pain intensity in follow up appointments.

Robert Utsman, DDS

Dr. Robert Utsman obtained his DDS from the University of Latina of Costa Rica. Before coming to Minnesota, he completed a dental fellowship in Oral Medicine at the University of Illinois at Chicago. He is currently working with Drs. Nixdorf and Hellekant (University of Minnesota, Duluth) in a cross-sectional research project to explore the correlation of taste disturbances and the severity of TMD pain.

Vladimir Leon-Salazar, DDS, MS

Dr. Vladimir Leon-Salazar is from Peru and obtained his DDS at Inca Garcilaso de La Vega University in Lima. After one year of practicing general dentistry, he moved to Brazil where he earned a certificate and MS in Orthodontics at the University of Sao Paulo. Dr. Leon-Salazar is in the Oral Biology PhD program. He is currently working under the guidance of Dr. Beiraghi on a cross-sectional research project to assess the frequency of facial and dental dysmorphologies in patients with Robinow syndrome and patients with Velo-Cardio-Facial-Syndrome.

The diversity of backgrounds of both residents and faculty make our educational program unique, and one of the strongest in the country.
Faculty Recognition

In May of 2008 UMN President Robert Bruinick’s announced the recipients of the “2007 President’s Award for Outstanding Service.” Dr. John Look was recognized for more than three decades of exceptional service and commitment to global health care. Dr. Look formally retired this year but continues to serve the Division as a research consultant. He has served in remote areas of Africa, India and Central America. Within our division Dr. Look actively integrated his epidemiology, statistics and grant writing skills and collaborated with Drs. James Fricton and Eric Schiffman in TMD research. He has numerous publications and provides leadership and training in the many research endeavors within the TMD Division. We all have benefited from his commitment to excellence during his 20 years of service within the SOD and his contribution as lead epidemiologist and researcher in the Division of TMD-Orofacial Pain. We are very proud of him.

Snoring and Obstructive Sleep Apnea: Our Role in Multidisciplinary Treatment

Obstructive sleep apnea (OSA) is a common sleep disorder characterized by multiple apnea events, due to short-duration blockages of the upper airway during sleep, resulting in decreased airflow to the lungs. In the USA it affects approximately 24% of men and 9% of women in middle-age. OSA in general decreases the quality of life of the affected adults. In fact, it is a life threatening condition and has been reported as a risk factor for depression, hypertension, cardiovascular diseases, reduced vitality, impotence, diabetes, obesity, and occupational and motor vehicle accidents.

Classic symptoms of OSA include loud snoring and arousal/awakening from sleep, daytime sleepiness, tiredness, and lack of concentration. However, patients with OSA may not present clinically with these symptoms. Since, there are three types of apnea – central, mixed, and OSA – an accurate medical history and an overnight polysomnography studying at a sleep clinic are necessary to diagnose the condition.

Among the non-surgical treatment options for OSA are: behavioral modification, CPAP, medication, and intraoral mandibular advancement appliances. The scientific literature reports that mandibular advancement appliances have been successfully used as an alternative option for treating mild-to-moderate OSA in adults who do not tolerate the continuous positive airway pressure (CPAP) therapy. Most intraoral appliances hold the jaw forward which opens the airway.

Our dental team treats patients referred by sleep specialists and diagnosed with OSA by fabricating intraoral appliances. In our opinion, when appropriately used, the custom made intraoral appliance is effective in treating snoring and mild-to-moderate OSA. Patients report a decrease of their symptoms and experience an improvement in the quality of sleep.
Clinic:

Our newly renovated clinic on the 6th floor of the School of Dentistry provides a private, pleasant and relaxing environment to welcome and manage your patients. Far more importantly, we have a wonderful staff with years of experience. Kathy, Mary, and Cindy have been part of the group for more than 20 years and are the “engine” of our clinic. In fact, patients frequently comment on the friendliness and professional manner of our very capable staff. If you would like to refer to the clinic or if you have any questions, feel free to contact any one of us at 612-626-0140.

CASE STUDY Differential Diagnosis:
1) Atypical Odontalgia,
2) Trigeminal Neuralgia,
3) Myofascial Pain of the Posterior Digastric and Myohyoid Muscles.

University of Minnesota
TMD, Orofacial Pain and Oral Medicine Clinic

Dentists
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Cory Herman, DDS, MS
Mike John, DDS, PhD
Mariona Mulet, DDS, MS
Donald Nixdorf, DDS, MS
Eric Schiffman, DDS, MS

Patient name:___________________________________________________________

Telephone:_____________________________________________________________

Referring Dr. (first & last name):___________________________________________

Office Mailing Address/Telephone/E-mail Address:___________________________

Dental Sleep Medicine

Teledentistry

Health Psychologists

Leesa Morrow, PhD, JD, LP

Physical Therapists

Karen Decker, PT
Patricia Weber, PT

Primary Concerns:_______________________________________________________

________________________________________________________________________

________________________________________________________________________

Please forward any relevant patient records to us, including x-rays. Thank you.

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