

## **The Oral-Systemic Health Connection**

There is abundant literature showing the connections of chronic oral infections and various medical conditions. Like you, we see the winds of the medical-legal standards-of-care starting to shift to include multi-disciplinary management of compromising health conditions such as diabetes, heart disease, and pregnancy, to name a few. As this standard-of-care shifts to embrace oral health status, physicians and dentists are recommending, if not insisting, that their patients deal with chronic oral infections. (Worthy of note, some medical carriers are now covering periodontal treatments.)

As The Center for Dental Medicine in Southeast Washington, our practice seeks to build a bridge in the medical/dental community to benefit patients and to help health professionals avoid the problems associated with failure to diagnose and treat important diseases related to the presence of chronic oral infections. We hope that you will view this information in a new light, and that it will serve to reassure you that you have a knowledgeable partner who is capable of helping you accomplish health objectives with your patients that by its very nature you are unable to obtain without our assistance.

This brief review of the negative impact chronic oral infections have on your patients should prove helpful.

### **Periodontal Disease**

Periodontal disease affects 80% of our population. It is a local inflammatory process caused by the body's response to bacterial insult. It is also characterized by host systemic inflammatory markers that are believed to contribute to a higher risk for cardiovascular disease and diabetes. Other systemic conditions have also been connected with chronic oral infection, including: metabolic syndrome, complications of pregnancy, colon cancer, formation of blood clots, obesity, respiratory disease, damaged heart valves, endocarditis, osteoporosis, etc.

Clinically, periodontal disease usually presents with gum swelling, bleeding and halitosis. Pain is not a feature until late stages. 'Volatile sulfur compounds' (VSC) are more than a cosmetic problem. These bacterial gases are responsible for the bad breath characteristic of gum disease. Hydrogen sulfide (H<sub>2</sub>S) & methyl mercaptan (CH<sub>3</sub>SH) increase permeability of intact gingival mucosa and stimulate production of cytokines associated with periodontal disease. Any halitosis problem should be considered suspect.

Periodontitis causes a breakdown in the gum tissue and allows the periodontal bacteria, especially *porphyromonas gingivalis*, to invade the endothelial cell lining of the gingival sulcus. Reports are now surfacing that show the presence of invasive periodontal pathogens at sites of atherosclerotic disease, establishing an unequivocal link and supporting the idea that periodontitis is an exacerbating factor in cardiovascular disease. These periodontal bacteria are gram-negative anaerobes that thrive in deeper periodontal pockets in the advanced stages of periodontitis. *P. gingivalis* is a potent signal for monocyte and macrophage activation, and once established in the host, complicates

diabetes control and increases the occurrence and severity of microvascular and macrovascular complications.

### **C-Reactive Protein**

Periodontal disease is associated with elevated inflammatory markers and increased systemic inflammation. Until now C-reactive protein has been viewed as an ‘innocent bystander’ in the formation of heart disease and diabetes. Current understandings now view elevated CRP as a key culprit that causes inflammation in the arteries resulting in formation of clots and plaques which lead to atherosclerotic conditions, and to the exacerbation of diabetes. This information is now beginning to modify the standard-of-care for addressing heart disease risk factors such that aggressive treatment is indicated to control CRP levels even when normal cholesterol levels exist.

### **Pregnancy**

Recent studies link gum disease with an increase in preterm and low birth weight babies. Infants who are preterm or low birth weight, had mothers with significantly more periodontal disease than controls with normal babies. Gingivitis during pregnancy has been shown to be an independent risk factor for preterm low birth weight pregnancy complications. This is explained through the translocation of bacteria or bacterial products in the systemic circulation (prostaglandins, cytokines, CRP, etc.).

Consequently, women should begin and maintain their pregnancy without gingivitis or gum disease. If oral infections are found during pregnancy, treatment should begin as soon as possible to reduce pregnancy risks. Periodontal treatment has been shown to reduce these pregnancy complications between 71 and 84 percent in pregnant women with moderate to severe chronic periodontitis.

### **Diabetes**

Diabetes is widespread today. Periodontitis is known to be twice as prevalent in diabetics compared to non-diabetics. Studies have suggested that chronic oral infections affect glucose control in diabetics, and that deep gum pockets were closely related with glucose tolerance status.

Because of the increasing prevalence of diabetes and the research indicating the dangers of gum disease to diabetics, and because treatment can help patients control their blood sugar, we now routinely test all of our periodontal patients for Glycated hemoglobin, HbA1c.

### **Modern Periodontal Therapy**

To effectively deal with the oral-systemic connection today, modern treatment protocols must go beyond the “regular cleaning” mindset and standards we have been so accustomed to. It’s a sad indictment that despite our existing knowledge and treatment

procedures, there is still an 80% incidence of periodontal disease. Thankfully, new science and technology is paving the way for better co-management of problematic medical conditions and of gum disease itself.

At our Center for Dental Medicine we require close medical support for systemic disease management. We utilize anti-microbial agents, ionized sub-gingival irrigation, advanced nutritional support, strict behavior modification, laser decontamination, and laser-assisted periodontal therapy.

**Advanced Center for Dental Medicine Treatment Regimen:**

- thorough evaluation and medical history review
- in-house draw or referral for appropriate blood work (CRP, HbA1c)
- medical referral to physician as indicated for medical management
- patient education, oral hygiene instructions, and behavior modification
- nutritional counseling and supplementation support
- tobacco counseling as needed
- conventional scaling and root planning
- laser bacterial decontamination and laser-assisted periodontal therapy
- removal of bacterial dental plaque and endotoxins impregnating the dental root surface, and other surface contaminants at the sub-gingival level
- sub-gingival irrigation with anti-microbial agents
- correction of contributing dental problems
- daily sub-gingival irrigation with anti-microbial agents
- on-going communication with patient's physicians regarding progress of treatments

We hope that you would feel comfortable in considering The Center for Dental Medicine as a valuable resource in helping you render the best care possible for your patients who have diabetes, or are pregnant, or who have heart disease / risk factors. We look forward to working closely with physicians to manage and treat the hidden sources of chronic oral infection in their patients.