Correlation Between Periodontal and Cardiovascular Diseases

Presented by Dr. Edward R. Scott II D.M.D.
December 11, 2010
Agenda

- Review presentation objective
- Discuss clinical based discoveries
- Pictorial review of the impact of periodontal disease
- Discuss recent oral health developments in identifying the relationship between periodontal disease and cardiovascular disease
- Questions and answers
Objectives

• Establish Why Oral Hygiene is Important to Overall Health
• Discuss the consequences of periodontal disease and its relationship to cardiovascular disease
• Discuss recent developments
African Americans & Cardiovascular Diseases

% Deaths

A. Cardiovascular Disease
B. Cancer
C. Accidents
D. Assaults
E. Diabetes

Males

Females

A  B  C  D  E

A  B  C  D  E

32.3  21.9  6.5  5.2  3.9

35.9  21.6  5.0  3.1
What Your Dentist Knows About Your Health

- Teeth and Gums say a mouthful about your health
  - Predicting heart disease
  - Diabetes
  - Premature Birth
  - Revealing Leukemia
  - Eating disorders
  - Vitamin Deficiencies
Gum Disease and Your Overall Health

- Approximately 75% of Americans have a form of gum disease
- Brushing and Flossing are often taken for granted
- Visits to dentist for regular checkups is the best preventative for gum disease
What is Periodontal Disease?

- Periodontitis is a set of inflammatory diseases affecting the periodontium — that is, the tissues that surround and support the teeth. Periodontitis involves progressive loss of the alveolar bone and attached gingiva around the teeth.
Contributing Factors

- Periodontal disease (gum disease) is mainly caused by bacteria from plaque and tartar build up
- Other factors include:
  - Tobacco use
  - Clenching or grinding your teeth
  - Certain medications
  - Genetics
Types of Gum Disease

• **Gingivitis** - The beginning stage of gum disease, often undetected, but is reversible.

• **Periodontitis** - Untreated Gingivitis
  – May lead chronic inflammatory response
  – The body breaks down the bone and tissue in the infected area of the mouth, ultimately resulting in tooth and bone loss.
Stages of Gum Disease

Healthy Teeth and Gums
Stages of Gum Disease

Early Onset periodontitis
Stages of Gum Disease

Moderate periodontitis
Stages of Gum Disease

Advanced periodontitis
Signs and Symptoms

Healthy Gums
• Coral pink color
• Gums hug teeth tightly
• No bleeding
Signs and Symptoms

Gingivitis

- Bleeding while brushing or during probing
- Inflamed, sensitive gums
- Possible bad breath and/or bad taste in mouth
Signs and Symptoms

Moderate periodontitis

- Teeth may look longer due to gum recession
- Gum boils or abscesses may develop
- Possible bad breath and/or bad taste in mouth
- Teeth may begin to drift and show spaces
- Pockets 4-6 mm deep
Signs and Symptoms

Advanced periodontitis

- Teeth may become mobile or loose
- Constant bad breath and/or taste in mouth
- Teeth sensitive due to exposed roots
- Pockets $>6$ mm deep
- Some teeth may be extracted (pulled)
The Progression of Periodontal Disease
(An Underlying Look)

Normal, Healthy Gingiva (Gums)
Healthy gums and bone anchor teeth firmly in place
Gingivitis
Plaque and its byproducts irritate the gums, making them tender, inflamed, and likely to bleed.
The Progression of Periodontal Disease
(An Underlying Look)

Periodontitis
Unremoved, plaque hardens into calculus (tartar). Gums pull away from teeth, pockets form between teeth
The Progression of Periodontal Disease
(An Underlying Look)

Advanced Periodontitis
Gums recede further, destroying more bone and periodontal ligament, may lead to extractions
Gum Disease Links to heart Disease and Stroke

Heart Disease
Several theories exist to explain the link between periodontal disease and heart disease
Gum Disease Links to heart Disease and Stroke

Heart Disease

One theory is that bacteria can affect the heart when they enter the blood stream, attaching to fatty plaques in the coronary arteries.
Gum Disease Links to heart Disease and Stroke

Heart Disease
Another possibility is that the inflammation caused by periodontal disease increases plaque build up, which may contribute to swelling of the arteries.
Heart Disease

Periodontal disease can also exacerbate existing heart conditions. Patients at risk for infective endocarditis may require antibiotics prior to dental procedures.
Heart Disease & Stroke

• Studies suggest gingivitis may increase the risk of heart disease and stroke
  - High levels of bacteria found in infected areas of the mouth
  - As the level of periodontal disease increases, the risk of cardiovascular disease may increase
  - Other studies have suggested that the inflammation in the gums leads to chronic inflammation in other parts of the body
  - Has also been implicated in increasing the risk of heart disease and stroke.

1. (Richard Crout, D.M.D., Ph.D., associate dean for research in the WVU School of Dentistry)
Heart Disease & Stroke

- Periodontal Disease ➔ Coronary Disease
  - Oral bacteria affects the heart when it enters the bloodstream
  - Causes plaque buildup ultimately narrowing the blood vessels leading to heart attack and stroke
Bleeding Gums Linked To Heart Disease
(Royal College of Surgeons in Ireland)

- Science Daily (Sept. 11, 2008)
  - Infrequent flossing results in bleeding gums
    - Provides entry into bloodstream of 700 types of bacteria from the mouth
  - The mouth is the dirtiest place in the body
    - Bacteria sticks to platelets resulting in clotting within blood vessels resulting in heart attacks
    - This sticking/clumping protects bacteria from antibodies which would normally kill bacteria
  - Professor – University of Bristol
    - It doesn’t matter how fit, slim or healthy you are, bad teeth could lead to heart disease
Bleeding Gums Linked To Heart Disease

(Harvard School of Dental Medicine)

• 12 Year study
  • 41,000 healthy men
  • Initially all free from cardiovascular disease
  • At end of study those with periodontal disease and less than 25 teeth had a higher risk of blood-clot related stroke

• Harvard Longevity study
  • A major contributor to longevity is daily flossing
  • Flossing removes bacteria from teeth and gums
    • Men with Periodontal disease have a 72% greater risk of coronary disease
    • Men with Gingivitis have a 42% greater risk of coronary disease
Bleeding Gums Linked To Heart Disease

(Harvard School of Dental Medicine)

Miscellaneous Facts

• The connection between gum disease and heart attacks is higher than the connection between high cholesterol and heart attacks.
• Risk for stroke is 2.8 times greater for individuals with gum disease than those without periodontal disease.
Periodontal Disease Treatment

• **Goal of Treatment**
  • Arrest and control disease progress
  • Place periodontal tissues in maintainable state
  • Restore supporting structures
    • Bone
    • Gum Tissue
    • Ligaments
Periodontal Disease Treatment

• Scaling and Root Planing

**Scaling**
Plaque and tartar (yellow or brown hardened plaque) are scraped off the tooth’s crown and root

**Root Planing**
After scaling the rough surfaces of the root are smoothed providing a healthy surface for healing
Periodontal Disease Treatment

- **Benefits of Treatment**
  - Keep dental costs down
  - Research links periodontal infection to more serious problems
  - Prevent surgical intervention
Recent Developments

- Cardiologists may begin to examine a patient’s mouth, looking for significant tooth loss, visual signs of oral inflammation and receding gum lines
- Periodontists may begin asking questions about heart health and family history of heart disease
The Eyes are the window to the soul,

The Mouth is the window to the body
Questions and answers
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