Oral Health During Pregnancy

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Learning Objectives

• To address general health, oral health and the connection with pregnancy
• Review recommendations based on guidelines from health professionals guidelines
• Review findings on periodontal research
• Plan for how to provide the best care for expectant mothers
• Review Sun Life’s program
What is Oral Health?

- Surgeon Generals report “Oral Health in America,” states that oral health, includes health of gums, teeth and jawbone and is a mirror for general health and well-being.

- Oral health is an important component of general health that if not attended to has been associated with many disease processes including cardiovascular diseases, diabetes, Alzheimer disease, respiratory infections, and osteoporosis of the oral cavity.
Oral Health During Pregnancy
Oral health during pregnancy

• In 2007-2009, 35% of U.S. women reported that they did not visit a dental provider and 56% of women did not visit a dentist during pregnancy.
“The achievement of optimal oral health in pregnant women (itself has been) ... hampered by myths surrounding the safety of dental care during pregnancy. “

Access to Dental Care

- **Barriers** to dental care during pregnancy include:
  * inadequate dental insurance
  * lack of education
  * lack of access to transportation
  * lack of dental providers
  * persistent myths about the effects of pregnancy on dental health
  * concerns of dental treatment
  * inadequate collaboration between perinatal providers and oral health providers
MYTHS

• You lose a tooth every pregnancy

• Babies take the calcium from teeth

• It is unsafe to see the dentist while pregnant

• You cant have x-rays while pregnant
Access to Dental Care

• Lack of national clinical guidelines for the management of common oral conditions in pregnancy

   http://www.health.state.ny.us/publications/0824.pdf

2. CDAF’s Perinatal Oral Health Clinical Guidelines
   www.cdafoundation.org/portals/0/pdfs/poh_guidelines.pdf

3. Oral Health Care During Pregnancy: A National Consensus Statement
   www.mchoralhealth.org
Physiologic changes during pregnancy may result in changes of the oral cavity and can include:

* Caries
* Pregnancy Oral Tumors
* Mobile teeth
* Gingivitis
* Periodontitis
* Tooth Erosion
Periodontitis and Pregnancy

- Numerous studies have been conducted across the world since 1996
- Different outcomes have come from these studies
- Predisposing factors can include race and age
- All reports have concluded that there is no harm to mother or fetus from treatment of periodontal conditions
Periodontal Disease Can Affect Your Heart & Body

Emerging evidence shows a relationship between periodontal disease, cardiovascular disease and other chronic diseases — the common link is inflammation.

The presence of periodontal diseases may be associated with heart attacks, strokes, kidney disease, diabetes, preterm births and prosthetic joint complications.
• Studies have shown that pregnant women with untreated disease are at risk for preterm labor.

• The health of the unborn child is dependent on the mother’s oral health.
Periodontitis and Poor Pregnancy Outcomes

- Approximately 40% of pregnant women have some form of periodontal disease

- According to postpartum survey data from Pregnancy Risk Assessment Monitoring System in 10 states, 59% of women did not receive any counseling about oral health during pregnancy

- Periodontal disease has been associated with
  * Preterm labor/low birth weight
  * preeclampsia

Periodontal Complex

Toxins Produced

Inflammatory Response

Pockets become infected

Peridontium is broken down

Recurrent Bacteremia

Triggers the hepatic acute phase response

Production of cytokines, prostaglandin, and interleukins

Inflammatory markers have been found in the amniotic fluid of women

<table>
<thead>
<tr>
<th>Clinical recommendation</th>
<th>Evidence rating</th>
<th>References</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Periodontitis may be associated with preterm birth and low birth weight.</td>
<td>B</td>
<td>19</td>
<td>Recommendation from nine case-control studies, two cross-sectional studies, seven cohort studies, two RCTs, and two meta-analyses</td>
</tr>
<tr>
<td>Preliminary evidence suggests that deep root scaling in pregnant women with periodontitis may help prevent preterm birth and low birth weight.</td>
<td>B</td>
<td>20-22</td>
<td>Consistent findings in two small RCTs&lt;sup&gt;21,22&lt;/sup&gt;; one RCT found no relationship&lt;sup&gt;20&lt;/sup&gt;</td>
</tr>
<tr>
<td>Use of oral topical antibacterial treatment of dental caries in mothers in late pregnancy and/or the postpartum period can lower maternal oral bacterial load and reduce transmission of bacteria to infants.</td>
<td>B</td>
<td>26, 27</td>
<td>Consistent findings for xylitol and chlorhexidine (Peridex) in two small RCTs</td>
</tr>
</tbody>
</table>

*RCT* = randomized controlled trial.

*A* = consistent, good quality patient-oriented evidence; *B* = inconsistent or limited quality patient-oriented evidence; *C* = consensus, disease-oriented evidence, usual practice, expert opinion, or case series. For information about the SORT evidence rating system, see page 1063 or [http://www.aafp.org/afpsort.xml](http://www.aafp.org/afpsort.xml).
Term Stillbirth Caused by Oral Fusobacterium nucleatum

Yiping W. Han, PhD, Yama Fardians, PhD, Casey Chen, DNS, PhD, Karla G. Jacamero, MD, Victoria A. Peraino, Jaime M. Shamonki, MD, and Raymond W. Redline, MD

BACKGROUND: Intrauterine infection is a recognized cause of adverse pregnancy outcome, but the source of infection is often undetermined. We report a case of stillbirth caused by Fusobacterium nucleatum that originated in the mother’s mouth.

CASE: A woman with pregnancy-associated gingivitis experienced an upper respiratory tract infection at term, followed by stillbirth a few days later. F. nucleatum was isolated from the placenta and the fetus. Examination of different microbial floras from the mother identified the same clone in her subgingival plaque but not in the supragingival plaque, vagina, or rectum.

CONCLUSION: F. nucleatum may have translocated from the mother’s mouth to the uterus when the immune system was weakened during the respiratory infection.

This case sheds light on patient management for those with pregnancy-associated gingivitis.

Obstet Gynecol 2010;115:442-5

Stillbirth is a significant public health concern, accounting for 60% of perinatal deaths. Infections account for 10–25% of all stillbirths. In this report, we present a case of unusual term stillbirth caused by Fusobacterium nucleatum, a gram-negative anaerobic bacterium prevalent in intrauterine infection but not associated with stillbirth before. We demonstrate that this organism may have originated from the mother’s oral cavity.

CASE

A 35-year-old primigravid Asian woman reporting decreased fetal movements was admitted to Saint John’s Health Center at 39 5/7 weeks gestation. Up to the day of hospitalization, the patient had received routine prenatal care and the pregnancy had been uncomplicated with the exception of a two-vessel umbilical cord found by ultrasonography. Subsequent serial ultrasounds revealed no other anatomical abnormalities. On the day of admission, the patient reported that she had last felt the fetus move at approximately 5:00 that morning. The mother had been mildly ill with an upper respiratory tract infection for the previous 3 days, running a low-grade fever of 37.8°C. There was no history of amniotic fluid leakage, bleeding, or abnormal uterine contractions. At admission, absence of fetal heartbeat was confirmed by ultrasonography. The membrane was ruptured artificially by the obstetrician, who noted slightly bloody and strongly foul-smelling amniotic fluid. Over the next several hours, the patient’s labor progressed without difficulty, and a significantly macerated stillborn female fetus weighing 3,323 g was delivered vaginally early the next morning. Titors for toxoplasmosis, other viruses, rubella, cytomegalovirus, and herpes simplex viruses, and panovirus drawn before delivery were negative.

The placenta was relatively small (fifth percentile for 39 weeks of gestation) and had a single umbilical artery. Acute chorioamnionitis with umbilical phlebitis, chorionic vascu-

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OBSTETRICS & GYNECOLOGY
Oral Health During Pregnancy

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Oral health care in pregnancy is often avoided and misunderstood by physicians, dentists, and patients. Evidence-based practice guidelines are still being developed. Research suggests that some prenatal oral conditions may have adverse consequences for the child. Periodontitis is associated with preterm birth and low birth weight, and high levels of cariogenic bacteria in mothers can lead to increased dental caries in the infant. Other oral lesions, such as gingivitis and pregnancy tumors, are benign and require only reassurance and monitoring. Every pregnant woman should be screened for oral risks, counseled on proper oral hygiene, and referred for dental treatment when necessary. Dental procedures such as diagnostic radiography, periodontal treatment, restorations, and extractions are safe and are best performed during the second trimester. Xyloflorin and chlorhexidine may be used as adjuvant therapy for high-risk mothers in the early postpartum period to reduce transmission of cariogenic bacteria to their infants. Appropriate dental care and prevention during pregnancy may reduce poor prenatal outcomes and decrease infant caries. (Am Fam Physician. 2008;77(8):1139-1144. Copyright © 2008 American Academy of Family Physicians.)

Comprehensive prenatal health care should include an assessment of oral health, but this is often overlooked. Only 22 to 34 percent of women in the United States consult a dentist during pregnancy. Even when an oral problem occurs, only half of pregnant women attend to it. This problem is compounded by a lack of national clinical guidelines for the management of common oral conditions in pregnancy. The American Dental Association and the American College of Obstetricians and Gynecologists provide only advisory brochures on oral health for pregnant patients. New York recently became the first state to create an evidence-based prenatal oral health consensus document. In the absence of practice guidelines, fear of medicolegal action based on negligent or substandard treatment of oral conditions during pregnancy abounds, but it is largely unfounded.

In addition to a lack of practice standards, barriers to dental care during pregnancy include inadequate dental insurance, persistent myths about the effects of pregnancy on dental health, and concerns for fetal safety during dental treatment. Patients, physicians, and dentists are cautious, often avoiding treatment of oral health issues during pregnancy. Nevertheless, pregnancy is a time when women may be more motivated to make healthy changes. Physicians can address maternal oral issues, potentially reducing the risk of preterm birth and childhood caries through oral disease prevention, diagnosis, early management, and dental referral.

Common Oral Problems in Pregnancy

ORAL LESIONS
During pregnancy, the oral cavity is exposed more often to gastric acid that can erode dental enamel. Morning sickness is a common cause early in pregnancy; later, a lax esophageal sphincter and upward pressure from the gravid uterus can cause or exacerbate acid reflux. Patients with hyperemesis gravidarum can have enamel erosions. Management strategies aim to reduce oral acid exposure through dietary and lifestyle changes, plus the use of antiemetics, antacids, or both. Rinsing the mouth with a teaspoon of baking soda in a cup of water after vomiting can neutralize acid. Pregnant women should be advised to avoid brushing their teeth immediately after vomiting and...
Oral Health Care During Pregnancy and Through the Lifespan

ABSTRACT: Oral health is an important component of general health and should be maintained during pregnancy and through a woman’s lifespan. Maintaining good oral health may have a positive effect on cardiovascular disease, diabetes, and other disorders. In 2007–2009, 35% of U.S. women reported that they did not have a dental visit within the past year and 56% of women did not visit a dentist during pregnancy. Access to dental care is directly related to income level; the poorest women are least likely to have received dental care. Optimal maternal oral hygiene during the perinatal period may decrease the amount of caries-producing oral bacteria transmitted to the infant during common parenting behavior, such as sharing spoons. Although some studies have shown a possible association between periodontal infection and preterm birth, evidence has failed to show any improvement in outcomes after dental treatment during pregnancy. Nonetheless, these studies did not raise any concern about the safety of dental services during pregnancy. To potentiate general health and well-being, women should routinely be counseled about the maintenance of good oral health habits throughout their lives as well as the safety and importance of oral health care during pregnancy.

The 2000 Surgeon General’s report Oral Health in America, stated that a “silent epidemic of oral diseases is affecting our most vulnerable citizens,” including the poor and many members of racial and ethnic minority groups (1). Oral health, which includes health of the gums, teeth, and jawbone, is a “mirror for general health and well-being” (1). The World Health Organization Global Oral Health Programme emphasizes this interrelation and notes that oral health is a determining factor for quality of life (2). To prevent tooth decay, oral infections, and tooth loss, the American Dental Association recommends semianual dental examinations and cleanings as well as daily brushing and flossing (3). The American Dental Association also affirms the importance of oral health care during pregnancy (4).

General Health
Oral health disorders, such as periodontitis, are associated with many disease processes, including cardiovascular diseases, diabetes, Alzheimer disease, respiratory infections, as well as osteoporosis of the oral cavity. These are all significant diseases that affect women across the lifespan (5–11). The prevention and treatment of these disorders are essential for general well-being. The efficacy of endocarditis prophylaxis among patients who undergo dental procedures has been controversial based on published studies. However, the American Heart Association recommends that prophylaxis for dental procedures is reasonable only for patients with heart conditions that place them at the highest risk of adverse outcomes from endocarditis (12). For patients with these conditions, prophylaxis is reasonable for all dental procedures that involve manipulation of gingival tissue or the periapical region of teeth or perforation of the oral mucosa (12).

It is important for patients to discuss screening for oral cancer with their dentists. Although the U.S. Preventive Services Task Force concludes that there is insufficient evidence to recommend for or against routine screening for oral cancer, approximately 37,000...
• **What**: An Arizona Agency that was created in 2006 through an initiative that placed a tax on tobacco products to be used for early childhood development and health for children 0-5 years old

• Focuses on the quality of and access to early childhood and pregnant women in health systems

• Since 2006, FTF has provided more than $206 million in funding to children and parents throughout Arizona
• To address this great oral health disparity.....Sun Life applied for a $600,000 Oral Health Grant offered by First Things First

• Sun Life received news on July 1, 2011 that the proposed grant was accepted to address oral health needs in children birth to 5 and expectant mothers
• Reaches its goal of 2,500 oral health screenings each year with the mobile dental van for children aged birth to 5 years old and expectant mothers
• Sun Life collaborates with other community organizations and First Things First to identify areas of need
• Sun Life helps families identify a “dental home” for those who need more than basic screening services
• Other health care needs are referred to Sun Life’s Center for Women and Children to establish a medical home
• Provides **comprehensive oral health screening** services to prenatal woman
• Outreach and dissemination of oral health info and materials
• Parent **education** and training
• Screening for AHCCCS eligibility
• Patient **referral and follow up**
• Sun Life has **established collaborations** with other screening providers and First Things First grantees to streamline screening services
Sun Life's Goal

• Education is Imperative

• Open communication

• Flawless referrals

• PARTICIPATION and SUPPORT by ALL
Oral Health Assessment and Counseling During Pregnancy

• Pregnancy is a “teachable “ moment

• For some women, pregnancy may be the only time that they may obtain dental care

• For many women, the OB/GYN may be the most frequently accessed health care professional

Box 1. Sample Oral Health Questions

1. Do you have swollen or bleeding gums, a toothache, problems eating or chewing food, or other problems in your mouth?
2. When was your last dental visit?
3. Do you need help finding a dentist?

Recommendations

- Discuss oral health during the initial visit
- Educate women that oral health care improves a woman’s general health through her lifespan
- Conduct an oral health assessment
- Reassure patients that prevention, diagnosis and treatment are safe during pregnancy
- Inform women that conditions that require immediate treatment may be managed
- Develop a working relationship with local dentists
- Reinforce routine oral health maintenance
- Advocate for broader oral health coverage
• “The terms oral health and general health should not be interpreted as separate entities".

Oral Health in America: A report of The Surgeon General
Thank you