

Considerations of the pregnant dental patient

Abstract

There are many myths surrounding pregnancy and what is safe and what is not. The modifications necessary for the pregnant dental patient in each trimester will be discussed. Additionally, dental imaging and medications for each trimester will be reviewed. The dental provider must remember to keep both mother and fetus in mind when treating a pregnant patient. During the first trimester, routine preventive dental examinations and cleanings are safe while other procedures should be postponed; however, it is essential to promptly treat oral infections, pain, and emergency situations. Postponed procedures are usually considered "safe" to perform in the second trimester; though, minimization of exposure is essential and interprofessional communication with the patient's obstetric provider should be done prior to treatment. Through the third trimester, basic dental care is fine, and non-essential procedures should be postponed until after delivery due to the increased risk of preterm labor. If there is an indication for medication at any time during gestation, then FDA Pharmaceutical Pregnancy categories A or B are the safest options. Although there are many things to consider when treating the pregnant patient related to mother and fetus, regular dental care throughout pregnancy is safe and should be an essential part of a healthy pregnancy.

Keywords: pregnancy, oral health, dental provider, trimester, medications

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Linda May

Division of Foundational Sciences and Research, East Carolina University, USA

Correspondence: Linda May, Division of Foundational Sciences and Research, East Carolina University, 1851 MacGregor Downs Rd, MS 701, Greenville, NC, US 27834, USA, Tel 252-737-7072, Email mayl@ecu.edu

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Introduction

There are many myths surrounding pregnancy and what is safe and what is not. For example, many women believe they should not go to the dentist during pregnancy and that dental imaging should never be done while pregnant. Although dental providers know this is a myth, nearly half of women queried did not receive regular dental care, and lacked awareness of relevant oral health issues.¹⁻⁴ Since this is a critical time period for both mother and baby, more should be done to encourage pregnant women to see their dental providers. It is critical for dental providers as well to encourage women of child bearing years to continue their dental care if they become pregnant. Additionally, it is essential for the dental provider to stay informed of current guidelines regarding the pregnant patient.

Although previous findings state 91% of obstetricians did not want to be contacted regarding routine dental care⁵, the current idea and practice of interprofessional care and collaboration is the best model for competent health of patients. For the pregnancy patient collaboration with obstetric providers will be helpful in not only improved care, but establishing care with patients too. Research has shown that most pregnant women are not aware of the importance of oral health issues and regular dental care; thus, do not seek dental care during pregnancy, which can affect pregnancy outcomes.^{1,4,6-8} However, encouragement by an obstetric provider of healthy behaviors increases a pregnant woman's likeliness to actually do the healthy behavior.⁹⁻¹³ Once a pregnant woman visits the dentist, it is imperative to be cognizant of the status of both patients- mother and fetus. Since many dentists feel they lack clinical skills or knowledge to treat pregnant patients, this article will review the maternal and fetal changes that occur in each trimester.^{3,14-17} The best times to perform general and other treatments will be outlined. The modifications necessary for the pregnant dental patient in each trimester and postpartum will be discussed. Additionally, a review of dental imaging and medications for each trimester and into the postpartum period will be reviewed. The dental provider must remember to keep both mother and fetus in mind when working with a pregnant patient.

Pregnancy: in general

There are a few general procedures that should be done for pregnant patients, similar to any patient. For example, prior to initiating any examinations, a thorough review of the woman's medical history is essential in determining any medical issues that may change treatment options and pregnancy health. For example, any medications or chronic illnesses may lead to complications for mother, fetus, or both. Any issues, such as gestational diabetes, pre-eclampsia, or history of premature labor, which classify the pregnancy as high risk may lead to deferral of dental treatment until after delivery. Any issues, or potential medical issues, should initiate a consult with the obstetric provider. This review will focus on anatomic and physiologic changes in low risk, healthy singleton pregnancies to help explain why regular dental care throughout pregnancy is safe and an important for a healthy pregnancy.¹⁸

First trimester

The first trimester is an exciting time for the mother and involves many physiological changes for her and hence may require slight modifications on the part of the dentist in order to keep her comfortable. For example, the most common symptom in the first trimester is fatigue and or nausea. In order to accommodate the fatigued pregnant patient, it behooves the dentist to have an empathetic and soothing environment; this can be achieved by pleasant decor (i.e. plants without smells) and soothing music. Changes in progesterone¹⁹ influences structures with smooth muscle such as the gastrointestinal tract. If the pregnant patient is experiencing nausea, vomiting, then it is essential to check her teeth for erosion and counsel her on good oral health after vomiting. With the nausea, heartburn, and vomiting, women usually feel more comfortable with a more upright position. Due to changes in cardiovascular system, it is common for pregnant patients to have postural hypotension; these symptoms include lightheadedness, weakness, sweating, pallor, and possibly unconsciousness or convulsions.²⁰ Therefore, the patient should change positions more slowly during pregnancy, especially if lying supine. Additionally, it helps to have the dental chair in a more upright

position. It is important to allow for restroom breaks before and after appointment and to try to keep appointments as brief and comfortable as possible.

Increased progesterone and estrogen can lead to pregnancy gingivitis in the first trimester and increase to the third trimester.²¹ Pregnancy gingivitis is characterized by tooth mobility, and gingiva that is red, tender, and may bleed. Always make sure the pregnant patient is receiving adequate amounts of vitamin C through her diet or supplement. Further, this can be treated by debridement, chlorohexidine rinse, as well as improved oral hygiene. If the pregnancy gingivitis continues, then it may develop into a pyogenic granuloma “pregnancy tumor”.²² If the granuloma continues to enlarge, then it must be excised; surgery should be completed by clinician’s, with specific training and experience working with pregnant patients.

During the first trimester, the placental is forming, as well as organs and systems. This can make the fetus during this trimester more sensitive to teratogens and hypoxia. For example, this trimester is when many spontaneous abortions occur. Although it is highly unlikely the spontaneous abortions are caused by a dental examination, careful consideration should be given to procedures beyond routine preventive dental examinations and cleanings. However, it is essential to promptly treat oral infections and pain. Non-emergency dental work and irradiation should be postponed until later. The key during pregnancy is that if dental radiographic dental imaging is necessary for diagnosis and treatment, the exposure should be minimized as much as possible. The best treatment during this trimester is good oral hygiene to reduce the potential of bacterial transmission from mother to fetus.^{23,24}

Second trimester

The second trimester of pregnancy still has many changes for mother and fetus; however this is considered the safe trimester. Published guidelines by the American Dental Association (ADA) recommend pregnant women receive elective dental care during the second trimester and the first half of the third trimester.^{25,26} For most pregnant women, this trimester provides relief from the tiredness and nausea of the first 13 weeks of gestation. Due to the growing size of the fetus and hence the uterus, women will experience a greater urgency and frequency of urination. It is best to offer pregnant patients to use the restroom immediately prior to sitting in the dental chair, as well as afterwards. In addition to the growing fetal-placental unit the changes in vascular muscle relaxation will cause most pregnant women to experience postural hypotension. For this reason the dental provider can place a pillow under the patient’s right side to roll them towards their left in order to maintain a patent inferior vena cava. With this in mind, your pregnant patient should always change positions gradually. For example have your pregnant patient transition from a more reclined position to an upright sitting position, then from a sitting position to standing with assistance. Furthermore, pregnant women are more prone to hypoglycemia, which can lead to fainting. Pregnant patients should be advised to have a healthy snack and plenty of fluids about one hour prior to their dental appointment. Since progesterone¹⁹ is still increasing in the second trimester the smooth muscle tone of the gastrointestinal tract is affected. If your pregnant patient is still experiencing nausea, or has started to have heartburn, and/or constipation, then have her sit in a more upright position.

During the second trimester, the placental has formed and the organ systems are fairly well established. However, tooth formation is

beginning during this term. Although prophylactic systemic fluoride was previously prescribed during pregnancy, current evidence suggests fluoride treatment should be done after delivery since caries prevention is mainly after tooth eruption.²⁷ With the organ systems established and focused on growth and maturation, the second trimester has a decreased chance of malformation to occur.²⁸ Therefore, this is the safest pregnancy term to perform elective procedures if medically necessary. If dental imaging is required during pregnancy, then this can be safely done in the second trimester. Dental staff should follow the as low as reasonable achievable rule to minimize exposure, via lead apron and thyroid collar, high-speed film, and focused dental imaging. To date, there are no increases in congenital abnormalities due to radiation during pregnancy and is beneficial compared to not treating pregnant patients.^{19,23}

Similar to the first trimester, dental visits should be focused on good oral health; however, management of oral infections can be done as well as procedures (i.e. excision of granulomas) that were postponed from the first trimester. If this is the case, the treatment plan should be discussed with her obstetric provider, especially if it involves long-term follow-up. Keep in mind that pregnancy heightens a woman’s sense of smell and taste and sometimes dislike of them. Since, this increased sensitivity can cause symptoms such as gagging, nauseousness, and vomiting, dental staff should be aware of this and minimize irritants.

Third trimester

As a woman’s body prepares for labor and delivery in the last trimester, the dentist should keep in mind some key changes for his patient. Now in the last trimester of pregnancy, women begin to feel similar symptoms as the first trimester along with feelings of elation and anxiety. Again an empathetic and soothing environment can help the fatigued pregnant patient. A supportive and calming environment is also helpful during this time of increased anticipation and anxiety, especially for nulliparous women. Some pregnant women still experience nausea and heartburn in late pregnancy and along with an increasing abdominal girth, she feels more comfortable in a semi-reclined position. Postural hypotension may still occur in the third trimester; therefore your patient should change positions more slowly and/or lean towards the left side while in the dental chair. Women may have constipation and are experiencing a need to frequently urinate, thus allow for restroom breaks before and after appointment and to try to keep appointments as brief and comfortable as possible.

The last trimester for the fetus is one of growth in size and maturation of organ systems, especially the nervous system and tooth development. Basic dental care is fine, but conservative treatments and short appointments are essential. Research has shown gingivitis is the most common condition during pregnancy.²⁹ Increasing gestational age is association with increased prevalence of periodontal disease.³⁰ Due to the association between periodontal and adverse pregnancy outcomes and pre-term labor, it is important to maintain a healthy balance of oral bacteria.³¹ Since a single treatment of scaling and root planning in the second trimester has not been shown to resolve issues (such as periodontitis), pregnant women with poor periodontal health should have multiple treatments to decrease risk or poor birth outcomes.³² Although this trimester has a decreased chance of malformation to occur, many procedures should be postponed until after delivery due to the increased risk of preterm labor.

Overview of medicines

Since many medications can affect maternal cardiorespiratory functions or cross the placental barrier and acts as a toxin or teratogen; it is essential to use the safest medication possible defined by the pregnancy drug risk categories define by the US Food and Drug Administration³³ and to consult the obstetric provider, especially in the first trimester. Fortunately most medications utilized in dentistry are Pregnancy Risk Category A or B. Category A is described as human studies have failed to demonstrate risk to the fetus during the first trimester of pregnancy. Whereas Category B suggests animal studies have failed to demonstrate risk to the fetus during the first trimester of pregnancy or animal studies have shown an adverse risk, but human studies have failed to show fetal risk. The safest local anesthetics are etidocaine and lidocaine (both category B). When using lidocaine with epinephrine up to 0.1 mg, there are have no reports of pregnancy complications.³⁴ As a category B analgesic, acetaminophen is the safest for short-term use (2-3 days) during pregnancy. Aspirin and non-steroidal anti-inflammatory medications should be avoided especially during the third trimester since this will increase the risk of ductus arteriosus constriction and postpartum hemorrhage, as well as delayed labor. Opioids should not be used during pregnancy either due to respiratory depression of the mother, which will cause hypoxia in the fetus, and associated congenital abnormalities. Often antibiotics need to be administered during pregnancy; safe choices, category B, are clindamycin, azithromycin, and penicillin/cephalosporin (i.e. 1st and 2nd generation are safe choices). If antivirals need to be prescribed, then category B choices are famciclovir and valacyclovir. Nystatin is a category B antifungal for 1st and 2nd trimesters, but should be avoided (category C) if possible during the 3rd trimester. Few anxiolytics are safe during pregnancy; however, if one needs to be used then nitric oxide is the safest choice if used in 2nd or 3rd trimester for less than 30 minutes while delivering 50% oxygen throughout procedure. As a dental care provider remember the treatment of oral disease following these guidelines does not increase the maternal and fetal risk relative to the risk of not providing necessary care.^{13,23,35}

Summary

Our main goal was to review the special considerations related to the pregnant patient- mother and fetus. First, it is essential to promptly treat oral infections, pain, and emergency situations, regardless of stage of pregnancy. Within the first trimester, routine preventive dental examinations and cleanings are safe, but other procedures should be postponed. Postponed procedures are usually considered “safe” to perform in the second trimester; though, minimization of exposure is key and communication with the obstetric provider is critical to both patients’ health. During the third trimester, basic dental care is acceptable, while non-essential procedures should be postponed until after delivery due to the increased risk of preterm labor. If there is an indication for medication, then category A or B are the safest options throughout pregnancy. Although there are many things to consider when treating the pregnant patient related to mother and fetus, regular dental care throughout pregnancy is safe and an essential part of a healthy pregnancy.

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Conflict of interest

The author declares that there is no conflict of interest.

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