Ear, Nose and Throat Manifestations in Pregnancy

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INTRODUCTION

A significant number of changes occur throughout the body of a female during pregnancy. Although most of these processes produce no harm to the expectant mother or foetus, some can become pathological. The hormonal and physiological processes that take place during this period may affect the ear, nose and throat of expectant mothers and often cause considerable discomfort and anxiety.

Although most symptoms are transient and minor, it is important that the Otolaryngologist recognizes the etiology of these symptoms in order to manage and reassure the patients.

An understanding of the treatment options and their attendant risks will facilitate an informed consultation with the mother allowing safe and acceptable treatment options to be instigated.

PREGNANCY AND THE NOSE.

Rhinitis. Rhinitis of pregnancy occurs in about 22% of pregnancies and can begin during any trimester. Rhinitis of pregnancy is defined as nasal congestion during pregnancy without other signs of respiratory tract infection, with no known allergic cause, and with complete resolution of symptoms within 2 weeks after delivery.

Female sex hormones, which continue to rise throughout the anti-natal period, have been implicated as the main etiologic factor. Another theory postulated is an increase in sensitivity to allergens in women who may have a pre-existing subclinical allergy. Uncommon sequelae of rhinitis of pregnancy include an exacerbation of intercurrent asthma leading to significant effects on quality of life.

Management of rhinitis of pregnancy should be conservative; nasal lavage with any commercially available salt water spray has no deleterious effects on either the mother or the foetus. It reduces contact time with potential antigens, soothes the nasal lining, minimizes the mucus aggregation and reduces the risk of an intercurrent subclinical infection.

While observational studies have examined the use of low-dose water-based surface acting steroid sprays in both asthma and rhinitis of pregnancy, and while no deleterious effects to the foetus have been identified, the only randomized controlled trial for allergic rhinitis in pregnancy failed to demonstrate any additional benefits of low-dose water-based surface acting steroid sprays as compared to saline douches. Hence their use in rhinitis of pregnancy is not recommended.

First-generation oral antihistamines such as chlorphenamine are considered to have no increased teratogenic effects. However, second-generation products such as Loratidine have been linked with hypospadias.
**Smell.** Olfactory perception is frequently reported as being disturbed during pregnancy. It has been described as either an increase or a reduction in sensitivity. Clinical studies confirm that smell intensity tends to increase in pregnancy. By using the University of Pennsylvania smell identification test it is possible to demonstrate that a pregnant cohort has a higher self rated olfactory sensitivity than a nonpregnant cohort.

**Epistaxis.** Epistaxis during pregnancy is common and may occur in up to 20% of pregnant women compared with 6% of nonpregnant women. Causes may be due to increased vascularity of the nasal mucosa as a result of hormonal changes. The most common cause of nose bleeding in pregnancy are the so-called bleeding polyps of pregnancy (also known as gravida granuloma) or diffuse nasal haemangiomas. The latter tend to be less common but cause more severe bleeding.

An interesting fact, supported by the literature is that women demonstrating epistaxis during the anti-natal period are more likely to have postpartum haemorrhages (10.7% as compared to 6.2% in those with no nosebleeds).

Management of acute epistaxis must always prioritize the safety of the mother. Control of the bleeding should be conservative either by Tamponade, chemical cautery or surface acting ointments.

The bleeding polyp of pregnancy is thought to arise due to the sensitivity of the nasal mucosa to sex hormones associated with glandular hyperplasia and increased vascularity. In most women these pyogenic granulomas tend to resolve postpartum.

It is always important to examine the oral cavity of women with such granulomas because their prevalence in the oral cavity is higher than the prevalence in the nose and may be a cause of very stressful oral bleeding.

**PREGNANCY AND THE EAR.**

**Hearing loss** as a manifestation of pregnancy is not commonly reported in the literature. There have been case reports of sudden sensorineural hearing loss during pregnancy but the prevalence in pregnant women is the same as the prevalence in the population at large.

**Otosclerosis** is one of the most common causes of acquired hearing loss and is widely accepted as being related to pregnancy. It is now considered that otosclerosis is simply more prevalent in women of childbearing age and that pregnancy per se, and the hormonal changes associated with it, have no deleterious effects on hearing loss. Current management is entirely conservative and supportive with any surgery delayed until after pregnancy and breast-feeding.
The fluxes in estrogen and progesterone levels have been postulated as affecting sensory nerve function and this may have a role to play during sensorineural hearing deterioration during pregnancy. Most of the literature suggests that the hearing loss associated with this hormonal sensory dysfunction occurs in the 1st trimester in the range between 125 and 500 HZ. This cannot be regarded as a true functional hearing loss.

A hyper coagulable state which can occur as part of a normal pregnancy, has been postulated as leading to vascular occlusion of the microcirculation in the inner ear and if any high frequency hearing loss occurs this needs to be considered.

Another process that may lead to a transient sensorineural hearing loss is pre-eclampsia. Preeclampsia or toxemia of pregnancy, is a syndrome in which hypertension occurs from 20 weeks gestational age, in the presence of proteinuria and endothelial dysfunction.

**Tinnitus.** Tinnitus is the most common auditory complaint during pregnancy with proposed theories of pathogenesis including hyper dynamic circulation, increase in Perilymph fluid pressure, and hormonal changes. Various studies have suggested that up to 33% of pregnant women report tinnitus as compared to about 10% of nonpregnant women. It is important to realize that tinnitus has been speculated as an early warning sign of gestational hypertension or preeclampsia and is important for such patients to have their blood pressure carefully monitored.

**Autophony.** Autophagy is a classic complaint from patients suffering from a patulous Eustachian tube. The typical patient with PET has lost a dramatic amount of weight, resulting in shrinkage of the peritubal mucous membrane. It is commonly seen postpartum in women who have had excessive weight gain during pregnancy.

**Unilateral facial nerve paralysis.** Bell’s palsy has an increased incidence during pregnancy. Most bells palsy appears to be concentrated in the 3rd trimester which may be due to the suppression of herpes simplex virus reactivation in early pregnancy and the increased susceptibility to infection and reinfection in late pregnancy.

The 3rd trimester is also the time when the extracellular volume is at its maximum, supporting the theory that fluid retention leads to perineural oedema leading to a facial nerve palsy.

Management of Bell’s palsy in pregnancy requires careful consideration of both the mother and the foetus. Management tends to be conservative with eye care being of paramount importance. The use of oral steroids during pregnancy was thought to be associated with an increased risk of foetal cleft lip and palate especially when used in the 1st trimester. Following a review by the Committee on Safety of Medicines in May 1998 it is now the general consensus that there is no convincing evidence that
Corticosteroids increase the incidence of congenital abnormalities and that doses of prednisolone up to 40 mg daily are unlikely to have any systemic effect on the foetus.

**Balance.** Vertigo and dizziness are frequently experienced during pregnancy and are among the most common complaints from pregnant women to primary care physicians. Most are due to non-vestibular causes.

Ménière’s disease does not appear to be significantly affected by pregnancy and should appropriately be treated conservatively by salt and caffeine restriction alone.

Postpartum vertigo may be caused by many things; the abrupt changes in middle ear and intracranial pressure secondary to labor can lead to trauma of the vestibular system including perilymph fistula formation. If postpartum vertigo occurs, and persists patients should be assessed by an Otoneurologist.

**External Ear canal.** Bleeding polyps of pregnancy can occur in the external ear canal most frequently in the 2nd and 3rd trimesters. The pathogenesis of these lesions may be hormone mediated with the dilation and proliferation of blood vessels.

**Pregnancy and the Throat.**

**Dysphonia.** Disturbance in the quality of voice is another common complaint during pregnant females. In fact, due to the increased lubrication of the vocal cords a better quality of voice can occur in the 1st and 2nd trimesters. When dysphonia occurs a number of etiological factors must be considered including altered breathing support, nasal obstruction, and laryngo pharyngeal reflux.

**Vocal fatigue** does occur in pregnancy leading to a reduction in maximum phonation time. This is essentially due to alterations in the volume of the thoracic cage due to the enlarging uterus.

There are a few published cases of Larygopathica Gravidarum which relates to transient changes within the laryngeal mucosa and is considered a hormonal response of the larynx resulting in edema of the mucosa.

**Reflux.** Gastroesophageal reflux is thought to occur in approximately 30 to 50% of pregnancies with the causative factor predominately being a decrease in the lower esophageal sphincter pressure secondary to the influence of progesterone. Laryngopharyngeal reflux is considered to play a major role in most dysphagia, dysphonia, throat clearing and globus symptoms during pregnancy. These symptoms often occur in the absence of classic heartburn symptoms.

Conservative management via lifestyle and dietary modification should be the first step. These include avoidance of eating late at night, elevation of the head of the bed, abstaining from tobacco and alcohol, and the avoidance of known dietary
triggers such as fatty food, chocolate and caffeine.

If symptoms persist, treatment should take place with liquid alginates such as Gaviscon liquid 3 times a day after meals and before retiring at night.

There is little evidence that the use of proton ion pump inhibitors, or histamine antagonists is indicated to control reflux of pregnancy.

**CONCLUSION**

Significant physiological changes occur during pregnancy and many of these affect the ear, nose and throat. It is important to have an overview of the etiology, clinical severity, natural history and optimal treatment of these conditions to appropriately and safely reassure and treat women during pregnancy.
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