Introduction:

Thyroid disease is relatively common among the general population, and certain thyroid conditions may be more common among pregnant women. These are usually hyperthyroid states. Additionally, the physiologic changes of pregnancy can mimic thyroid disease or cause a true remission or exacerbation of underlying disease. Indications for surgery in the pregnant patient include failure of medical management of thyrotoxicosis, compromise of the patient’s vision secondary to hyperthyroid orbitopathy or if obstructive enlargement causing airway compression is present.

Acute airway comprise coupled with a complicated pregnancy is a rare occurrence. Management of these patients can be complex. We describe a patient who presented to our institution in her third trimester of pregnancy, with a large neck mass and worsening respiratory symptoms. Because these patients are generally young and healthy, they are usually able to compensate well which can delay the diagnosis of compressing masses or thyroid disease. Additionally, failure to prepare for possible complications in managing these patients can result in catastrophic outcomes.

Study Design: Case report and literature review.

Methods:

1. Review of patient medical records
2. Medline search for medical literature pertinent to airway compression in the pregnant patient.

Case Presentation:

A 31 year old African American female presented to the Maternal Fetal Medicine clinic at 33 weeks gestation complaining of a severe headache and difficulty breathing when recumbent. She reported a history of a “thyroid problem.” She denied other health problems. On exam, she was noted to be hypertensive, stridorous while supine and to have a large midline neck mass. She was diagnosed with preeclampsia, admitted to the hospital and an otolaryngology consultation was called for the management of the stridor and neck mass. A computed tomography scan was recommended to further delineate the mass.

Past Medical History/Surgical History: G2 now P1
Medications: Prenatal Vitamins
No Allergies
Social History: No tobacco, no alcohol
Family History: No thyroid disease or cancers

Computed tomography
Markedly enlarged heterogeneous thyroid gland
Substernal extension (Figure 3)
Mass effect on the trachea (Figure 4)

Discussion:

Acute airway obstruction in the setting of complex pregnancy is a unique management dilemma. Pregnancy can mask an underlying diagnosis of a mediastinal mass or thyroid dysfunction as the patients are generally young and healthy and can compensate well.

Physiologic changes related to the thyroid gland occur during pregnancy and have been well described. Starting in early pregnancy, there is an increase in thyroid-binding globulin (TBG) secondary to an estrogenic stimulation of TBG synthesis and reduced hepatic clearance of TBG. Basal levels increase two to threefold. Therefore, levels of bound proteins, total thyroxine, and total triiodothyronine are increased and resin triiodothyronine uptake (RT3U) is decreased. The second physiologic adaptation is a reduction in plasma iodide. Plasma iodide levels decrease during pregnancy because of fetoal use of iodide as well as increased maternal renal clearance of iodide.

Increased goiter prevalence during pregnancy has been reported, and a long-term goitrogenic effect of pregnancies has also been shown.

The literature contains several case studies that address the management of obstructive goiter during pregnancy. However, there isn’t a discussion about the multidisciplinary plan we used for our patient. Nor does it discuss the potential for loss of the airway and preparing for airway compression in the pregnant patient.

Conclusions:

Acute airway obstruction in the setting of complex pregnancy is a unique management dilemma. A multidisciplinary approach and careful planning was integral to the appropriate management of this patient. Preparing for potential difficulties can lead to successful results and avoid catastrophic outcomes.

References: