Dynamic tracheal obstruction : a unique presentation

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Introduction

Acute onset stridor may signify a rapidly progressing airway emergency. This coupled with the anatomical and physiological changes of pregnancy, which already predispose the parturient to increased risk of airway management problems, result in a concerning presentation.

Tracheal obstruction in pregnancy is rarely cited in the literature. We describe a case of acute onset stridor in late pregnancy which caused significant concern in the multidisciplinary setting of the delivery suite.

Flexible Nasendoscopy appearance of subglottis:



Case Report

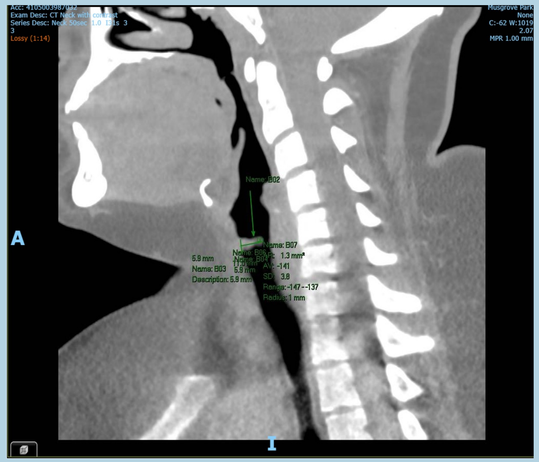
A 28-year-old primigravida woman presented at 35 weeks gestation with stridor and an inability to lie flat. With a short history of a viral illness in the weeks preceding with persistent cough, a BMI of 44 and a macrosomic baby estimated to be on the 97th centile.

Three years previously she had been seen and investigated for shortness of breath where no cause was identified. She had also been seen by rheumatology with regards to ongoing joint pains but with no formal diagnosis.

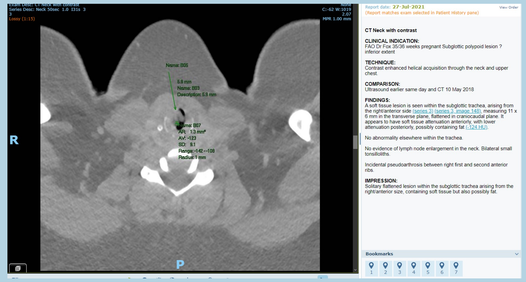
Initial treatment with IV steroids and nebulised Adrenaline led to an improvement in stridor, tachypnoea and ability to talk in full sentences. This also provided some time to investigate and make a safe multidisciplinary management plan.

Fibreoptic nasendoscopy demonstrated 3 subglottic lesions, possibly cystic in origin, causing dynamic obstruction of the tracheal lumen from 50% – near 100%.

Focused Computed tomography (CT) scan of the neck revealed a solitary flattened lesion within the subglottic trachea arising from the right anterior side measuring 11 x 6 mm.



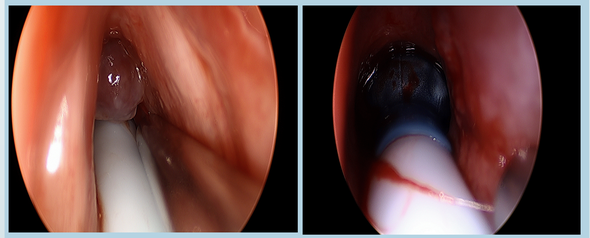
Management



In an MDT discussion involving obstetrics, anaesthetics and ENT, we discussed the risks and benefits of surgically treating this lesion urgently versus waiting until she had delivered. It was felt that risk of continuing without surgical treatment was much higher due to a potential airway emergency whilst delivering on labour ward. The risk of general anaesthesia whilst heavily pregnant for non obstetric surgery was perceived to be smaller. This was discussed with the patient and the shared decision made to electively operate. LASER excision of the subglottic lesion was performed on day 6 of admission under general anaesthesia.

We chose to induce general anaesthesia intravenously with a modified RSI technique using Propofol and Rocuronium. High Flow Nasal Oxygen was used for pre and apnoeic oxygenation until an endotracheal tube was in place. C Mac videolaryngoscope was used for intubation with a size 5 microlaryngeal tube. Two obstetric anaesthetic consultants and two ENT surgeons were present in theatre along with full obstetric and neonatal teams with equipment on stand-by.

Pre and post resection appearance of subglottis:



Discussion

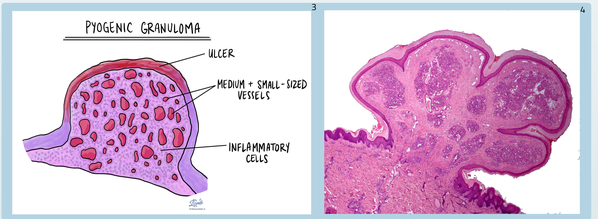
This case presented not only clinical but logistical challenges for us. The clinical management of acute stridor in the third trimester of pregnancy in a patient with a high BMI is complex. Moreover, the logistical challenges of a weekend presentation and the involvement of multiple teams in order to agree on a safe plan, safe location and safe timing of intervention was challenging.

We believe that answering the following questions was crucial in planning a safe airway management strategy in this case;

- How critical is the stridor? Is conservative treatment able to buy more time to plan?
- Are appropriate teams involved in the MDT discussion? Anaesthesia, Obstetric, ENT, Theatres and Neonatal teams in this instance.
- What is the safe place, timing, equipment and personnel required?
- What is the back up plan of oxygenation should plans fail and are the team aware of it?

Following successful excision of this lesion, histology demonstrated a Pyogenic Granuloma. Pyogenic granuloma is an acquired benign proliferation of capillary blood vessels of the skin and oral cavity. It can occur secondary to hormonal changes in up to 5% of pregnancies and hence has many synonyms including granuloma gravidarum or pregnancy tumour.[2]

This lady was discharged on day 1 post operatively with complete resolution of her symptoms and went on to have a Cat 2 LSCS under epidural top up at term. We believe that identifying the risk to patient safety, a multidisciplinary approach and effective coordination between teams led to a successful outcome in this challenging case.



References

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