

Anaesthetic challenges of caesarean delivery in a parturient with central airway obstruction.

Introduction

We present the anaesthetic management of a primiparous patient in her third trimester presenting with **acute dyspnoea and left lung collapse** secondary to newly diagnosed **endobronchial tumour**. Written informed consent for publication was obtained, and approval from the trust Caldicott Guardian.

Presentation

- A primip in her early 20s was transferred to a tertiary obstetric unit at **38 weeks' gestation** with worsening dyspnoea. She had no significant past medical history.
- She reported a **3 month history of progressively worsening SOB**, with a marked deterioration over the preceding 3 weeks.

Initial assessment

- Airway:
 - Patent, but tracheal deviation noted
- Breathing:
 - Hypoxic at rest, desaturating to **87% on room air**
 - Requiring **5 L/min oxygen**
 - Rapidly escalating oxygen requirement → **high-flow nasal oxygen (HFNO)** within hours of admission

Investigations

- Chest x-ray:** complete left lung collapse with mediastinal shift
- CT pulmonary angiography:**
 - 13 mm lesion in proximal **left main bronchus**, adjacent to carina
 - Near complete obstruction with left lung collapse
 - Right lung hyperexpansion → suggesting chronicity
- Strong suspicion of **carcinoid tumour**: 24 hour urinary catecholamines sent

Empiric treatment

- IV abx: Piperacillin/tazobactam
- IV dexamethasone
- Differential included **carcinoid tumour**: octreotide prepared and available

Management decision

- Multidisciplinary team:** anaesthetics, thoracic surgery, obstetrics, critical care
- Decision for **expedited delivery** to:
 - Reduce maternal respiratory burden
 - Mitigate worsening hypoxia in late pregnancy
 - Enable subsequent definitive airway management

Anaesthetic Management

Category 3 LSCS at 38+1 weeks

Technique

- Combined spinal-epidural (CSE) in sitting position
- 2 mL heavy bupivacaine + 300 micrograms diamorphine

Physiological targets

- SpO₂ ≥84% accepted on specialist advice

Positioning & Intraoperative Management

- Unable to lie supine**
- Semi-recumbent (30°) with left uterine displacement
 - Oxford HELP pillow + ramped positioning
- High-flow nasal oxygen therapy applied
- Slow block rise in semi-seated position
 - Required **epidural augmentation**
 - Sensory level T5 achieved at 35 min

Delivery

Surgical exposure challenging due to positioning

Delivery at 7 min → immediate improvement in dyspnoea and oxygen saturations.

Postoperative course

Day 1 post delivery:

- Rigid bronchoscopy performed
- Pedunculated lesion arising from posterior tracheal wall
- Complete excision using cryotherapy**

Histology:

- Initial concern for leiomyoma vs leiomyosarcoma
- Reviewed at respiratory and sarcoma MDT meetings
 - Final diagnosis: benign leiomyoma**

Further investigations:

- Pelvic MRI → no gynaecological primary identified

Outcome:

- Discharged home with baby on postoperative Day 3
- Ongoing follow-up with oncology

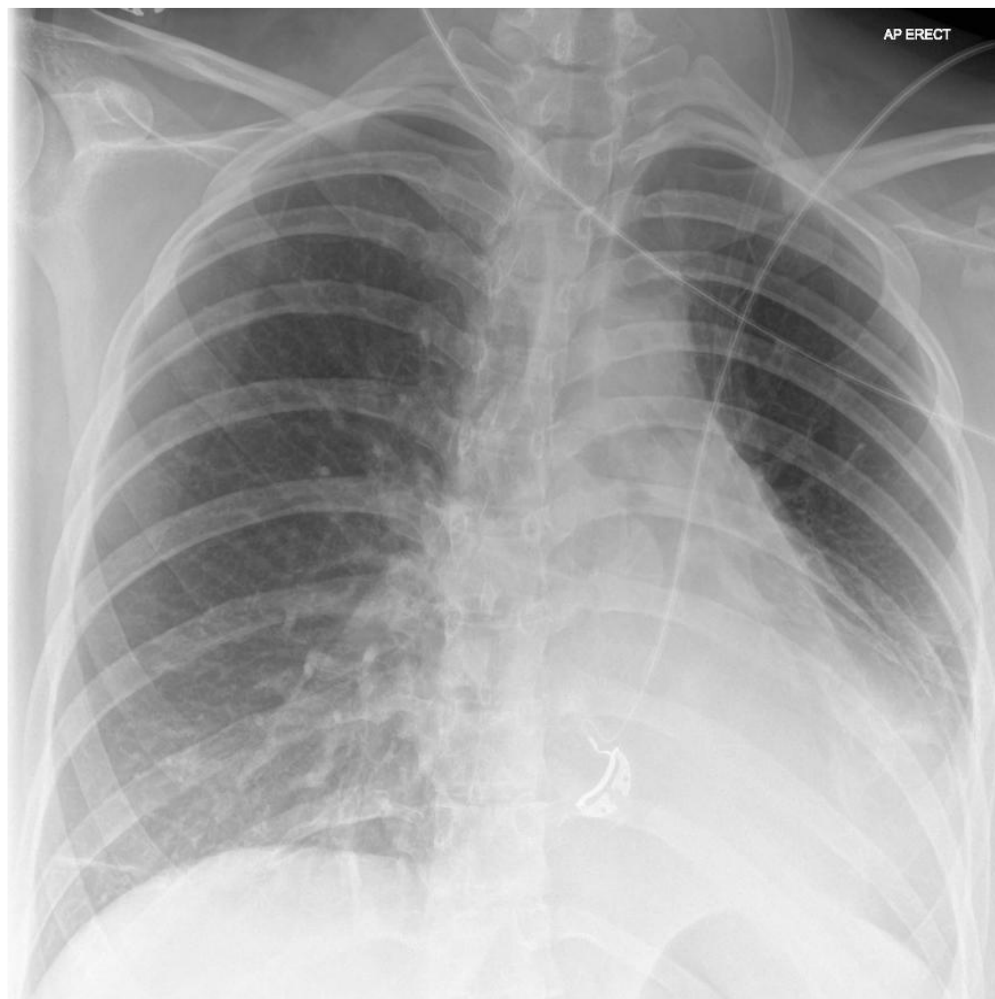
Computed Tomography Pulmonary Angiogram from referring hospital (2 days prior to LSCS) showing endobronchial obstruction at level of the carina



Chest Radiograph on admission to our center (1 day prior to LSCS)



Chest Radiograph 5 hours following LSCS (1 day prior to tumour resection)



Discussion

- Tracheobronchial leiomyomas are exceptionally rare, particularly in pregnancy.
- Only **one prior case** reported in pregnancy, managed with **bronchoscopic resection prior to delivery [1]**.
- No additional cases identified on recent literature review.

Our approach

- No published reports of **expedited delivery** undertaken to relieve maternal cardiorespiratory compromise from a tracheobronchial tumour.
- The patient's term gestation tipped the risks to mother and foetus in favour of delivery.
- Existing literature favours **airway intervention during pregnancy**, with delivery deferred where feasible **[2–4]**.

Anaesthetic challenges:

- Physiology of pregnancy:
 - ↓ Functional residual capacity
 - ↑ Oxygen consumption
- Near complete lung collapse → severe **ventilation–perfusion mismatch**
- Central airway lesion at carina:
 - ↑ Risk with general anaesthesia and positive pressure ventilation
- Regional anaesthesia preferred to maintain spontaneous ventilation
- Limited by inability to tolerate supine positioning

Take home message

- In selected term patients with central airway obstruction:
 - Expedited delivery may act as a therapeutic intervention**
 - Can reduce maternal cardiorespiratory strain
 - May facilitate safer subsequent airway management
- Multidisciplinary planning is essential**

References

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