

Is TIVA in obstetrics an essential skill?

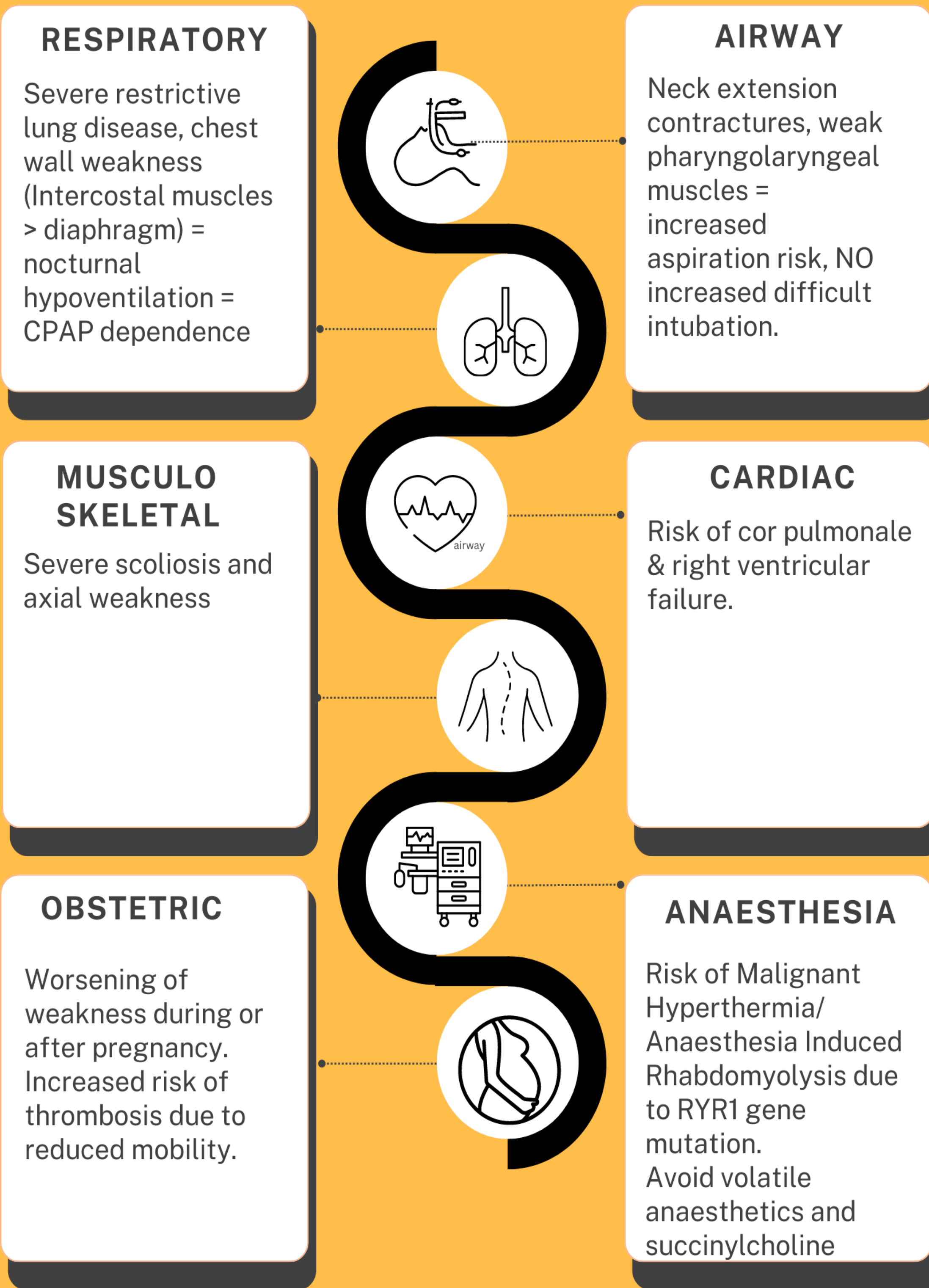
An elective caesarean section in a patient with Multicore Myopathy Disease (MmD).

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Introduction

Multicore Myopathy Disease (MmD) is a rare, congenital myopathy characterised by pathognomonic non-oxidative cores within muscle tissue¹. We present the case of a multiparous woman with MmD who underwent an elective caesarean section (CS).

Key MmD Anaesthetic Issues



Case Report

Case Summary

- 28 year old lady, 38/40, G3P1 with MmD

Medical History

- Previous scoliosis repair at age 15
- Chronic severe asthma
- Respiratory failure requiring nocturnal NIV.
- Exercise tolerance: 200 yards
- Multiple hospital admissions with LRTIs including previous admission with Pneumonia & T2RF requiring intubation and ventilation and pre-term emergency caesarean section at 28/40.
- Anxiety/Depression.

Drug History

- NKDA (except potential MH risk drugs)
- Tiotropium inhaler, Fluticasone/Vilanterol inhaler, Salbutamol inhaler prn.

Examination

- BMI 26.3
- Airway Assessment: MP1, Full ROM neck,
- Back: Scar extends to the sacral area.

Investigations

- Bloods: Hb 102, WCC 7.1, Plat 198.
- Echo: Normal LV size with good function EF 65%. Right heart non-visualised. No significant valve disease.
- Resp Function: VC 0.6L

Delivery Plan:

- Elective LSCS at 38/40.
- Previous surgical repair of her MmD-associated scoliosis contraindicated neuraxial anaesthesia.
- GA complicated by:
 - malignant hyperthermia (MH) risk
 - chronic severe asthma,
 - MmD-associated respiratory failure

Perioperative Management:

- Extensive risk counselling and multidisciplinary collaboration
- MH risk reduction as per AAGBI guidance² (volatile flushing of the anaesthetic machines, utilising total intravenous anaesthesia (TIVA) and rocuronium paralysis.

Outcome:

- Uneventful postoperative course. The patient received her baseline NIV on maternity HDU and was discharged home on day three.

TIVA in Obstetrics

Potential Benefits of TIVA ^{3,4}:

- Reduced Post Op Nausea & Vomiting (PONV)
- Neuraxial/inhalational contraindication, e.g. MmD
- Reduced PPH. Inhalational anaesthesia worsens uterine tonicity; propofol equivocal.

Difficulties of TIVA ^{3,4}:

- Time consuming to set-up and unfamiliarity within obstetrics ³
- TCI models accuracy in obesity ⁵ and paucity of evidence in pregnancy → Collectively: potential worsening of already known high AAGA risk cohort
- Vasodilatory and bradycardic haemodynamic instability coupled with additional opioid concern to neonate (APGARs unlikely affected) ⁶

Safe principles ^{3,4}:

- Senior led with TIVA experience
- Non-time critical → NOT CAT.1
- DOA monitoring mandatory → <50 before incision
- Bolus: Propofol/NDMR/opioid (or remi)
- Immediate TCI infusion: Remifentanyl 4 ng/ml (2-8 range), Propofol 4mcg/ml (3-8 range)

Discussion

MmD is a rare genetic disorder which poses multisystem anaesthetic challenges¹. Airway management is complicated by neck extension contractures and an increased aspiration risk. Scoliosis may complicate or preclude neuraxial anaesthesia. Concurrent restrictive lung disease requires careful pre-operative evaluation, particularly to identify evolving right ventricular dysfunction. The risk of malignant hyperthermia mandates the avoidance of volatile anaesthetics and succinylcholine. Post-operatively, there is an increased risk of thrombosis, and worsening weakness may occur, necessitating close observation¹. This case underscores the importance of meticulous planning, interdisciplinary collaboration and individualised care when managing high-risk obstetric patients with rare genetic disorders.

While total intravenous anaesthesia (TIVA) in obstetrics demonstrates potential benefits, there are still challenges to implementation in many hospitals. This case illustrates the need for greater familiarity and training in TIVA among obstetric anaesthetists. The role of TIVA in obstetrics also remains under-researched. Studies such as Obs-TIVA UK, a prospective multicentre study, are anticipated to shed much-needed light on current TIVA practices in the UK and associated maternal and foetal outcomes.

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