



ANAESTHETIC IMPLICATIONS OF VASOVAGAL SYNCOPE TYPE 2B IN A PARTURIENT UNDERGOING CAESAREAN SECTION

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Introduction

- Spinal anaesthesia is often implicated for bradycardia and haemodynamic instability during operative obstetrics.
- Extreme bradycardia or cardiac arrest once the spinal level is established is rare.
- We describe a case of profound sinus bradycardia with hemodynamic instability in a parturient diagnosed with vasovagal syncope following spinal anaesthesia for caesarean section.

Case Report

- A 27 year old primigravida with vasovagal syncope type 2b was reviewed in her second trimester for unprovoked syncope. Her past anaesthetic experience included an alleged cardiac arrest during general anaesthesia for which details were unavailable.
- Her antenatal cardiac investigations were unremarkable. Elective caesarean section was performed at 40+5 weeks. Spinal anaesthetic was established at T4 level for cold sensation and T6 for light touch before surgery commenced.
- Patient experienced profound bradycardia with loss of consciousness just prior to uterine incision. She regained consciousness within one minute following vagolytic medication and chest compressions. High spinal was excluded by testing for level of cold sensation and power of hand grip. Caesarean section was successfully completed without complications.
- Post operative cardiac investigations, electrolytes and acid base status were within acceptable limits.
- Cardiology review attributed vasovagal syncope as the likely cause.

Discussion

- Hypotension and bradycardia during caesarean section occur from a combination of obstetric and anaesthetic factors.¹
- Profound bradycardia and cardiac arrest occur more commonly in young, vagotonic patients.² Pregnancy is known to exacerbate vasovagal syncope due to exaggerated physiological changes.
- Bezold-Jarisch reflex has been attributed to hemodynamic instability following neuraxial anaesthesia but its exact role in vasovagal syncope is unclear.
- There is no firm evidence for pre-emptive anticholinergic administration for vagotonic patients.
- Careful positioning, vigilant monitoring, rapid resuscitation with escalating doses of vagolytic medication and vasopressors should be initiated when faced with profound bradycardia and hemodynamic instability in vagotonic parturient.

Type 1 – Mixed	Heart rate falls at the time of syncope but ventricular rate does not drop below 40beats/min or drops to less than 40 beats/min for less than 10 sec with or without asystole of less than 3 sec. Blood pressure falls before heart rate falls
Type 2A – Cardioinhibition without asystole >3sec	Heart rate falls to a ventricular rate below 40beats/min for more than 10 sec but asystole of more than 3 sec does not occur. Blood pressure falls before heart rate falls.
Type 2B – Cardioinhibition with asystole >3sec	Asystole occurs more than 3 sec. Fall in blood pressure coincides with or occurs after drop in heart rate
Type 3 – Vasodepressor	Heart rate does not fall more than 10% from its peak at the time of syncope

Table 1: Classification of head-up-tilt-table induced vasovagal syncope

References

1. Cook TM, Counsell D, Wildsmith JAW. Major complications of central neuraxial block: report on the Third National Audit Project of the Royal College of Anaesthetists. Br J Anaesth. 2009 Feb;102(2):179–90.
2. Dyamanna DN, Bs SK, Zacharia BT. Unexpected bradycardia and cardiac arrest under spinal anesthesia: case reports and review of literature. Middle East J Anaesthesiol. 2013 Feb;22(1):121–5.