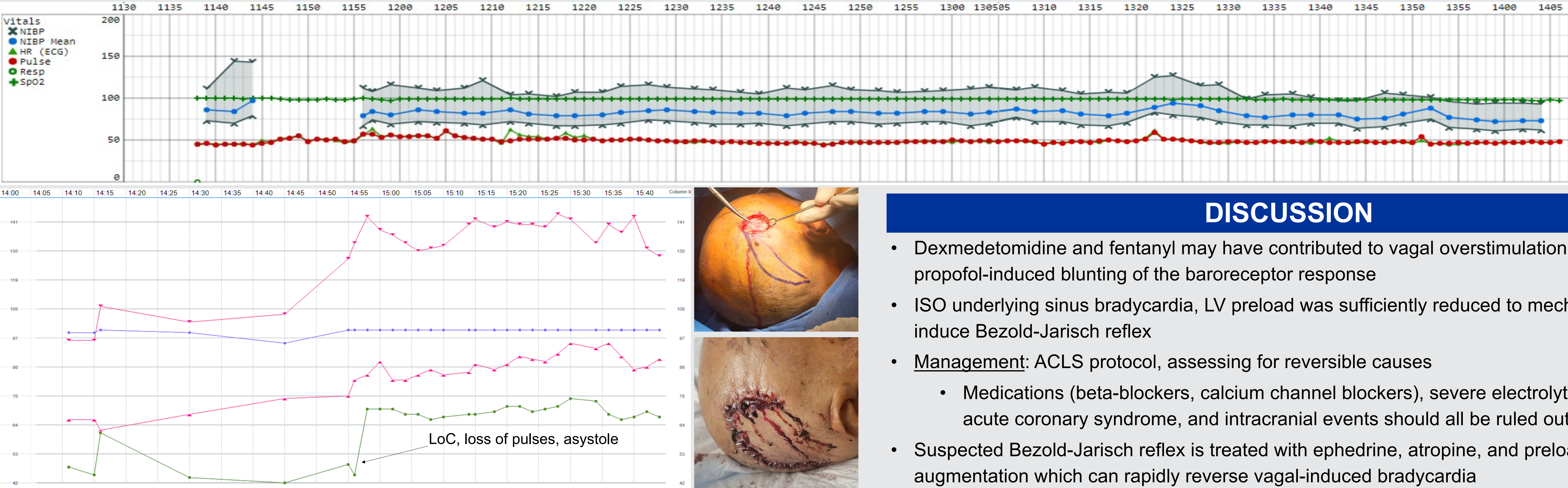


Post-Operative Bezold-Jarisch Reflex with Asystole after Monitored Anesthesia Care

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BACKGROUND

- Sinus bradycardia is a common arrhythmia in surgery, often requiring no treatment¹
- The Bezold-Jarisch reflex is a cardioinhibitory reflex, mediated by intracardiac vagal sensory neurons, that can cause hypotension, bradycardia, apnea, and syncope²
- Anesthetic agents may potentiate the Bezold-Jarisch response and cause severe bradycardia in predisposed patients, with potential for asystole
- Continual for signs of cardiovascular collapse is key to management of this patient population



DISCUSSION

- Dexmedetomidine and fentanyl may have contributed to vagal overstimulation alongside propofol-induced blunting of the baroreceptor response
- ISO underlying sinus bradycardia, LV preload was sufficiently reduced to mechanically induce Bezold-Jarisch reflex
- Management: ACLS protocol, assessing for reversible causes
 - Medications (beta-blockers, calcium channel blockers), severe electrolyte imbalances, acute coronary syndrome, and intracranial events should all be ruled out
- Suspected Bezold-Jarisch reflex is treated with ephedrine, atropine, and preload augmentation which can rapidly reverse vagal-induced bradycardia

CASE PRESENTATION

- 67-year-old male with h/o sinus bradycardia, prior uncomplicated general anesthesia, presented for resection of R parietal BCC
- Operative Events**
 - Preoperative scalp block of bupivacaine 0.5% (8 mL), dexmedetomidine (30 mcg), dexamethasone (2 mg), epinephrine (100 mcg)
 - Sedation/analgesia maintained with dexmedetomidine load (74 mcg total), low dose propofol infusion, and ketamine (100 mg) and fentanyl (50 mg) doses
 - Injection of 5 cc's lidocaine 1% by ENT

- Postoperative Events**
 - 45 minutes following arrival to PACU, suddenly became unresponsive with nonpalpable pulses and asystole on EKG
 - Following 30 seconds of compressions, pulse was palpable in 40s
 - 1mg atropine given with HR 40s → 70s, BP 130/80, and regaining of consciousness
 - Labs and Imaging
 - VBG: 7.36 / 42 / 71 Lactate: 1.3
 - hsTrop: <5 CBC, CMP: wnl
 - EKG: no ST changes or TWIs. Normal QTc.
 - POCUS: good contractility on PLAX, substernal views
 - Admitted for overnight monitoring on telemetry, CXR, discharged in AM with no complications

DIFFERENTIALS

- LAST?**
 - Max dose of bupivacaine 0.5% with epinephrine: 47.89 mL
 - Following 8 mL bupivacaine 0.5%, remaining safe dose of lidocaine: 31.03 mL
 - Block occurred 3 hours prior
- ACS?**
 - No evidence of cardiac ischemia
 - Rapid improvement uncharacteristic
- Intracranial event?**
 - No Cushing triad/signs of increased ICP or neurologic PE findings
- No electrolyte abnormalities, acidosis**

LEARNING POINTS

- Careful consideration of underlying cardiac dysrhythmias is crucial when considering anesthetic agents
- Bezold-Jarisch reflex can lead to cardiovascular collapse and should be considered as an important etiology in post-operative bradycardia-associated cardiac arrest
- Communication with surgical staff regarding maximum safe local anesthetic dosing should occur during all intraoperative instances of LA injection

REFERENCES

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