

Case Report: Rare, Severe Complication During Paravertebral Nerve Block

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Introduction



Patient:

- 48-year-old active female

Admitted for: Bilateral mastectomy and breast reduction

Patient History:

- Right invasive ductal carcinoma (IDC)
- Chronic sinus bradycardia (heart rate: 42–46 bpm)
- Remote situational syncope (2 episodes in her 20s during intense emotional stress; extensive cardiac/neurologic workup was unrevealing)
- Mild anxiety

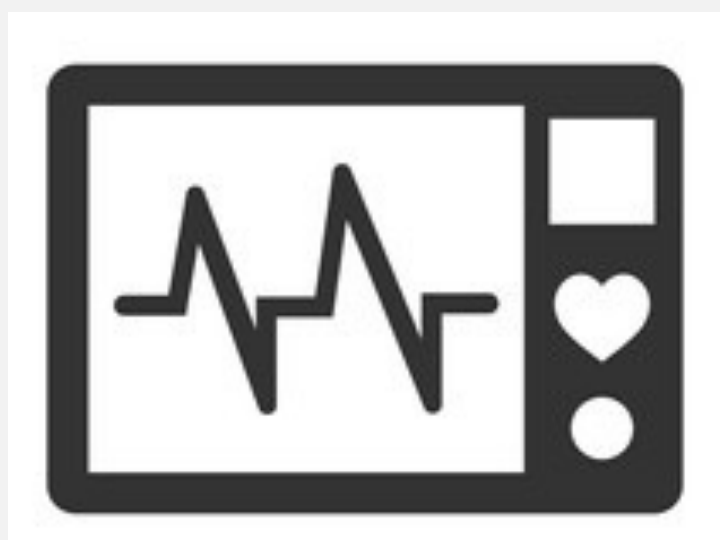
Key Preoperative Note:

During her pre-op assessment, her history of syncope was discussed, but her persistent bradycardia was attributed to exercise-induced adaptation, and she remained asymptomatic

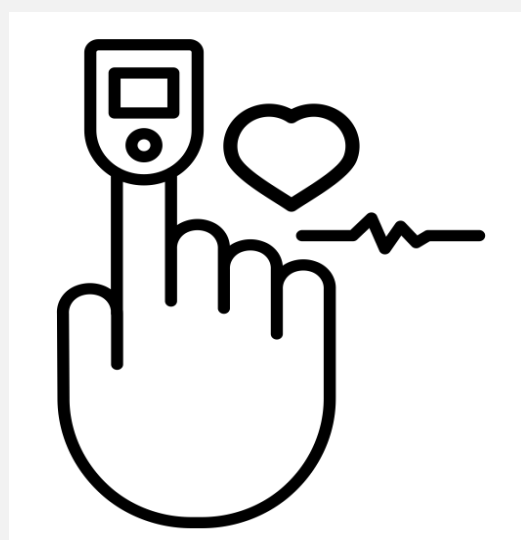
Consent → Block Started →
Bradycardia → ❌ Asystole → 🔄 ROSC (15 sec)

Materials & Methods

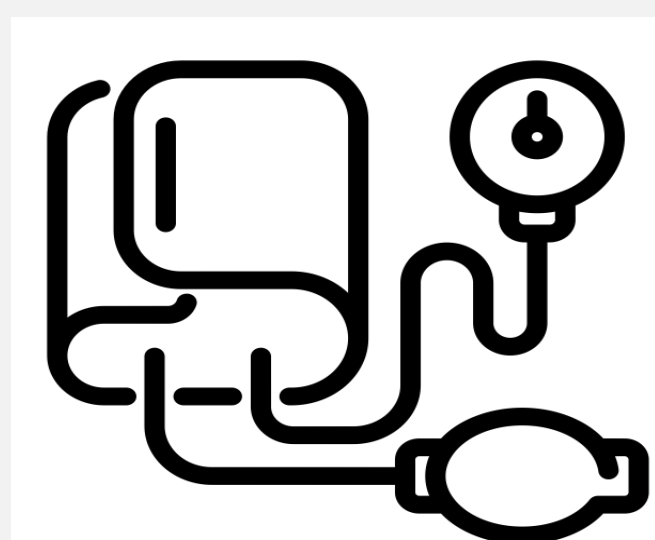
The bilateral paravertebral nerve block was performed under sterile conditions using ultrasound guidance. The patient was continuously monitored throughout the procedure with:



EKG



Pulse
oximetry

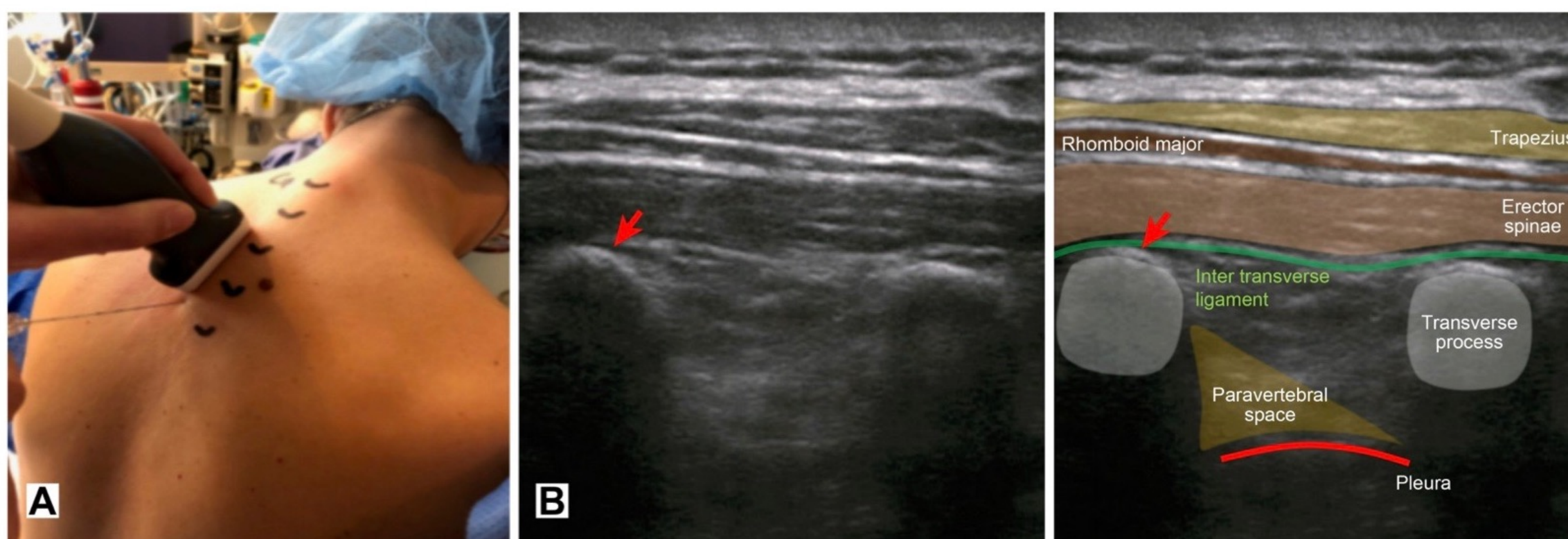


Blood Pressure

Premedication included:

- Fentanyl 50 mcg
- Midazolam 2 mg

Ultrasound Guided Paravertebral Nerve Block



Technique Description: A. Probe and needle placement. B. Echoanatomy and injection site (red arrow).

Image from: Antoine Premachandra, Xiaomeng Wang, Mary Saad, Sahar Moussawy, Roman Rouzier, et al.. Erector spinae plane block versus thoracic paravertebral block for the prevention of acute postsurgical pain in breast cancer surgery: A prospective observational study compared with a propensity score-matched historical cohort. PLoS ONE, 2022

Results/Case Report

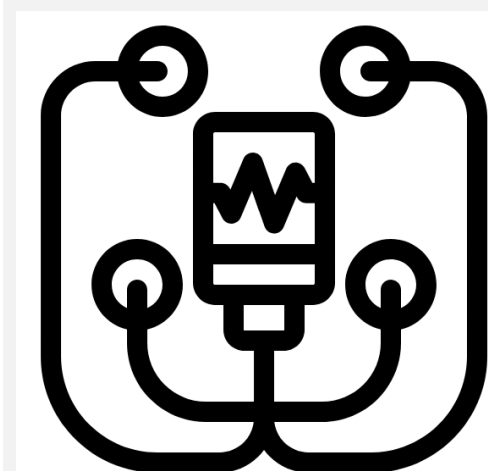
Right-sided block placement was uneventful. During needle positioning on the left side, the patient developed severe bradycardia and subsequently experienced a vagal episode resulting in asystole.



After return of spontaneous circulation (ROSC) within 15 seconds of initiating basic life support (BLS), the patient remained hemodynamically stable. Immediate EKG review confirmed sinus rhythm, and no external pacing was required.



Transthoracic echocardiogram showed normal cardiac function (EF 60–65%) with no structural abnormalities. She remained on continuous telemetry, which showed intermittent sinus bradycardia but no sustained arrhythmias.



The patient was discharged home with a 30-day Holter monitor, which showed no further events. She underwent a successful bilateral mastectomy 40 days later without the use of a regional block and had an uneventful postoperative course.

Discussion

- How should we manage patients at high risk for Bezold-Jarisch reflex undergoing nerve blocks?
- Should these patients be premedicated with positive chronotropic medications?
- Should these medications be drawn and ready at the bedside?
- Should external pacing pads be placed?
- Should this be considered a contraindication and the patient not be offered a nerve block?

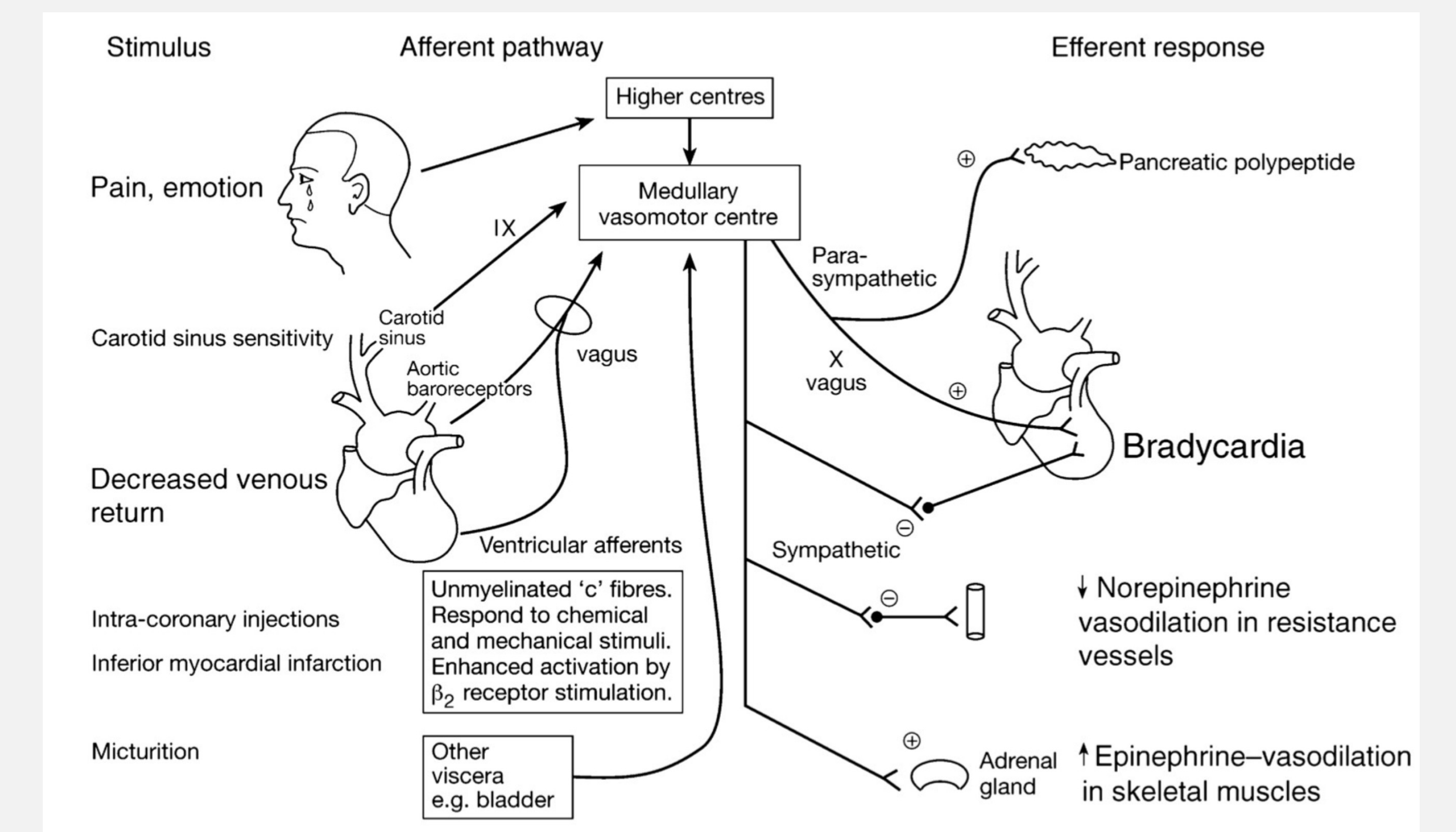


Fig 1 Neurally mediated syncope. IX, glossopharyngeal nerve; X, vagus nerve; ⊕, stimulates; ⊖, inhibits.
Image from: Perioperative bradycardia and asystole: relationship to vasovagal syncope and the Bezold–Jarisch reflex
Kinsella, S.M. et al., British Journal of Anaesthesia, Volume 86, Issue 6, 859 - 868

References

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