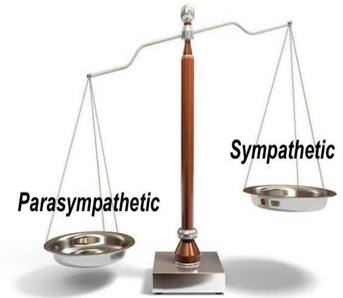
Regional Anesthesia for Baroreceptor Activation Therapy in a Patient with Severe Pulmonary Arterial Hypertension: A Case Report

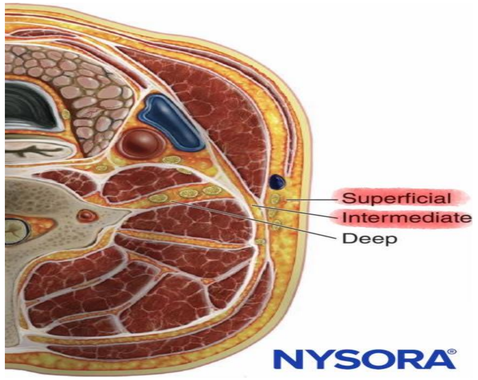
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Introduction

- Baroreflex activation therapy (BAT) works by restoring baroreflex sensitivity and rebalancing of autonomic systems[1].
- BAT with Barostim device is an emerging option for patients with autonomic imbalance like advanced heart failure[1].
- Such patients with significant cardio-pulmonary comorbidities often present elevated perioperative risk arising from right ventricular dysfunction and hemodynamic instability.





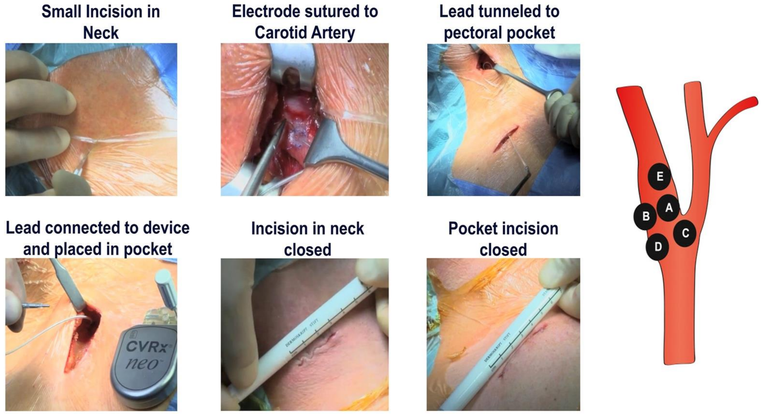
Case Presentation

- A 55 y.o male of BMI 50 with acute on chronic systolic heart failure (EF 30%), Nonischemic cardiomyopathy, Mobitz type 1 HB, Pulmonary Hypertension (mPAP: 55 mmHg) and OSA was scheduled for Barostim device implantation to improve autonomic regulation and overall functional status.
- **Anesthesia technique:** Ultrasound guided combined superficial and intermediate cervical plexus block was performed with 10cc of 0.5% Ropivacaine. 1% Lidocaine infiltration performed by the surgeon over the pectoralis incision. Spontaneous breathing with supplemental oxygen and sedation was maintained with Remifentanil infusion
- **Monitoring**: Standard monitoring + Continuous invasive monitoring demonstrated stable hemodynamics throughout.
- Procedure well tolerated with no intra-op or post-op cardiac complications and was discharged on POD 1.

Discussion

- Usually, implantation of the Barostim device occurs under MAC or general anesthesia[2].
- The physiologic profile of majority of the patients undergoing BAT make them susceptible to the hemodynamic vulnerabilities of general anesthesia. They might not tolerate MAC for prolonged periods
- In a case of severe cardio-pulmonary co-morbidities, avoiding airway manipulation and mechanical ventilation may reduce perioperative right ventricular strain and preserve cardiopulmonary stability.
- Alternative anesthetic strategies that minimize physiologic stress, better patient tolerability and comfort while maintaining procedural safety are of growing interest[3].
- This case highlights the feasibility and safety of performing Barostim implantation under regional anesthesia in patients with severe comorbidities who are poor candidates for general anesthesia or MAC.
- Regardless, individualized anesthetic planning and careful physiological optimization are critical for best patient outcomes in this high-risk population.

BAT Implant Technique



Requires no leads in the heart or vasculature

Conclusion

Regional anesthesia with minimal sedation is a viable and safe anesthetic method for Barostim implantation in select patients with severe cardiopulmonary comorbidities, potentially reducing perioperative risk while maintaining procedural success.

References

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