

Combined Spinal-Epidural Anesthesia in a Patient with Bilateral Vocal Cord Paralysis and Formalized Stoma

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INTRODUCTION

- Combined spinal-epidural was first discovered in 1979
- Provides benefits of both spinal and epidural
- As efficient as general anesthesia
- Reduces incidence of deep vein thrombosis, decreases surgical time, improved surgical muscle relaxation, and improved time to adequate block
- The incidence of difficult mask ventilation is approximately 1.4-7.5%, and of those patients 25% were found to be difficult to intubate.
- A difficult airway leaves an anesthesiologist with the dilemma of whether to use regional anesthesia or general anesthesia.

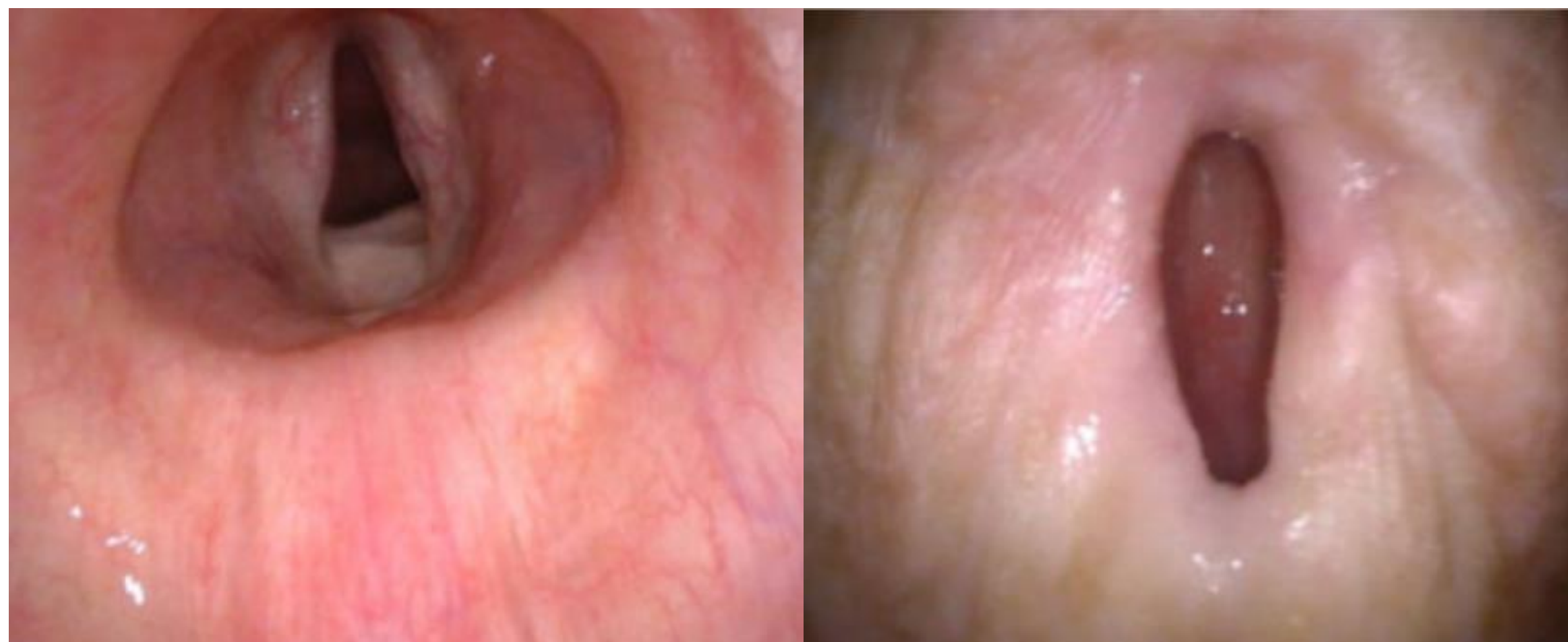
CASE PRESENTATION

60-year-old female presents for right total hip arthroplasty

Past Medical History: Unprovoked pulmonary embolism, asthma, cerebral aneurysm, pulmonary fibrosis, obstructive sleep apnea

Complex Past Airway History:

- Bilateral vocal cord immobility following complicated pleurodesis
- Multiple specialists for airway symptoms – Cleveland Clinic, OHSU, University of Washington, Mayo Clinic
- Cordotomy (2008)
- Placement of multiple tracheal appliances – Shiley tracheostomy, Jackson tracheostomy, tracheal buttons
- Underwent formalization of tracheostomy (2021)
- Continued to struggle with pain and leaking air around tracheostomy site



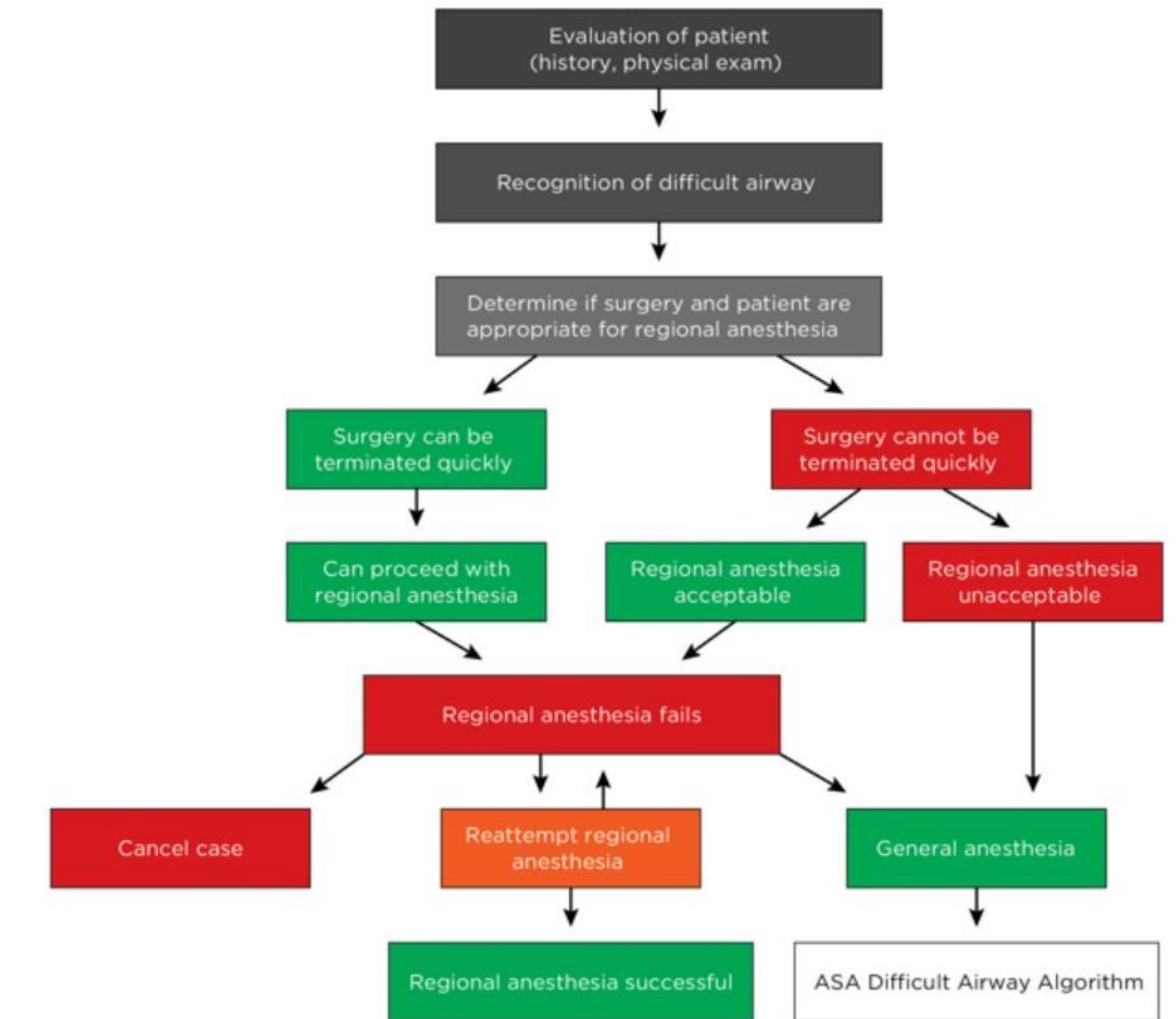
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ANESTHETIC PLAN

Technique	Pros	Cons
Combined Spinal-Epidural	- Limited amount of sedation - No need for airway instrumentation - Shorter PACU stay - Prolonged analgesic effect - Lower chance of hemodynamic compromise	- Possible epidural hematoma formation - Potential need to convert to general anesthesia - Unsecured airway - Unpredictable local anesthesia spread (total spinal block) - Possible injury from needle placement - Failed or incomplete block
General Anesthesia with intubation via stoma	- Akinesia - Amnestic effect - Patient comfort - Secured airway	- Require a pediatric endotracheal tube due to narrowing of stoma site - Irritation and pain to stoma site and stretch it. - Increased leakage of air after surgery - Hemodynamic perturbations
General Anesthesia with intubation via oropharynx and traversing vocal cords	- Akinesia - Amnestic effect - Patient comfort - Secured airway	- Need to be placed distal to the stoma site to prevent leaking - Cause further vocal cord injury and increased hoarseness of voice - Hemodynamic perturbations

DISCUSSION

- Initially, a spinal was selected given its low failure rate (<1%) as compared to epidural failure rates of 14-41.4%. CSE failure rates are around 3-6.6%. Notably, CSE data is limited to mostly the obstetric literature.
- Combined spinal-epidural has been shown to have a shorter onset, better quality block, and lower failure rate compared to epidural anesthesia with less major morbidity and mortality.
- Patient successfully underwent total hip arthroplasty without IV or oral sedation with good pain control postoperatively.
- The patient suffered no postoperative complications in the post-anesthesia care unit (PACU) and was discharged home.



LEARNING POINTS

- Anesthesiologists must remain adaptable and develop skills that will enable the care of patients with multiple comorbidities.
- We emphasize the importance of tailoring anesthetic plans to patient needs as well as considering alternate methods of surgical anesthesia.
- Regional anesthesia is a recommended option for patients with difficult airways because standard anesthesia induction may put them at risk for a “cannot ventilate, cannot intubate” situation.

REFERENCES

