

PATIENT PRESENTATION

82 y/o male presents for Right Total Hip Arthroplasty (THA)
PMHx of:

- HTN, HLD, CAD/AWMI s/p LAD stent (2004), ICM s/p AICD (2016), CHF (EF 35-40%), Atrial Fibrillation s/p Watchman procedure
- BPH, SCC of the scalp, Osteoarthritis of bilateral hips
- **Guillain-Barré Syndrome (GBS)** with residual weakness of hip flexors and paresthesia with decreased sensation of UEs and LEs
 - ❖ Diagnosed 3 years prior to THA
 - ❖ Acute onset ascending lower extremity weakness thirteen days after a COVID19 vaccine-booster
 - ❖ Despite treatment with IVIG and physical therapy, lower extremity weakness and paresthesia persisted
 - ❖ Ambulates with the assistance of a cane

THE DILEMMA: Neuraxial vs General

- 1) Decreased need for airway support, avoids risk of respiratory depression from GA
- 2) Decreased risk of perioperative DVT
- 3) Greater cardiac stability than the cardiovascular fluctuations of GA

- 1) Risk of further neurologic damage in a patient with preexisting neurologic deficits (trauma or local toxicity)
- 2) Risk of incomplete block
- 3) Lack of airway protection
- 4) Can potentially cause hypotension which may be difficult in patient with autonomic instability

DISCUSSION

- GBS is an immune-mediated acute polyneuropathy with demyelination of nerves in the peripheral nervous system, which is ascending and may lead to flaccid paralysis, with possible respiratory muscle involvement
- Can occur after infection, medications, surgeries, and vaccinations
- GBS that results secondary to surgery is possibly more severe with a poorer prognosis (1)
- Limited data comparing general anesthetic versus Neuraxial (NA)/regional anesthetic techniques in patients with any history of GBS
- Potential for GBS exacerbation and lack of response to typical GBS treatment after administration of neuraxial analgesia (2)
- Potential exists for recovery after worsening of GBS after neuraxial anesthesia, but can require a severely prolonged course (3)
- Interaction between anesthetic agents used in neuraxial anesthesia and the peripheral nervous system myelin or local trauma have been postulated as possible risks of utilizing NA/regional anesthetic techniques (4)
- Such varied outcomes and risks create a challenge for anesthesiologists when determining safe anesthetic plans for patients with h/o GBS



MRI C+ showing enhancement of the anterior nerve roots of the Cauda Equina
Source: Case courtesy of Abdulmajid Bawazeer, Radiopaedia.org, rID: 75340

On MRI C+ can see thickening and contrast enhancement of the spinal nerve roots (most commonly anterior), especially in the region of the Cauda Equina and Conus Medullaris

OUTCOME

- After review of published evidence and discussion with the patient regarding benefits and risks of both anesthetic techniques, the patient opted for spinal anesthesia.
- He tolerated the procedure well under spinal anesthesia with mild IV sedation.
- Postoperative neurologic status at baseline; able to ambulate prior to discharge on POD3.

CONCLUSIONS

- GBS presents a unique challenge for procedures usually performed under neuraxial anesthesia
- More rigorous studies are needed to evaluate the safety of NA and incidence of post-operative neurologic complications in patients with pre-existing refractory GBS
- In the interim, shared decision making after informed consent is recommended

REFERENCES

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