Soli Deo Gloria

INDICATIONS AND CONTRAINDICATIONS FOR REGIONAL ANESTHESIA

Lecture 3

Developing Countries Regional Anesthesia Lecture Series
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Disclaimer

- Every effort was made to ensure that material and information contained in this presentation are correct and up-to-date. The author can not accept liability/responsibility from errors that may occur from the use of this information. It is up to each clinician to ensure that they provide safe anesthetic care to their patients.

General Considerations

- Suitability for the type of surgery being performed
- Surgeon’s preference
- Experience in performing the block
- Physiological/mental state of the patient

Generic Advantages of Peripheral Nerve Blocks

- Improved patient satisfaction
- Less immunosuppression
- Less nausea and vomiting
- Non-general anesthetic option for patient with malignant hyperthermia
- Patient who is hemodynamically unstable or too ill to tolerate a general anesthetic

Generic Risks for Peripheral Nerve Block

- Toxicity of local anesthetics
- Transient or chronic paresthesia
- Nerve damage
- Intra-arterial injection (seizures/cardiac arrest)
- Block failure (need to supplement or induce general anesthesia)

Contraindications to Peripheral Nerve Block

- Pediatric patients, combative patients, demented patients
- Bleeding disorders
- Sepsis
- Local anesthetic toxicity risk
- Pre-existing peripheral nerve neuropathies

Indications for Neuraxial Blockade

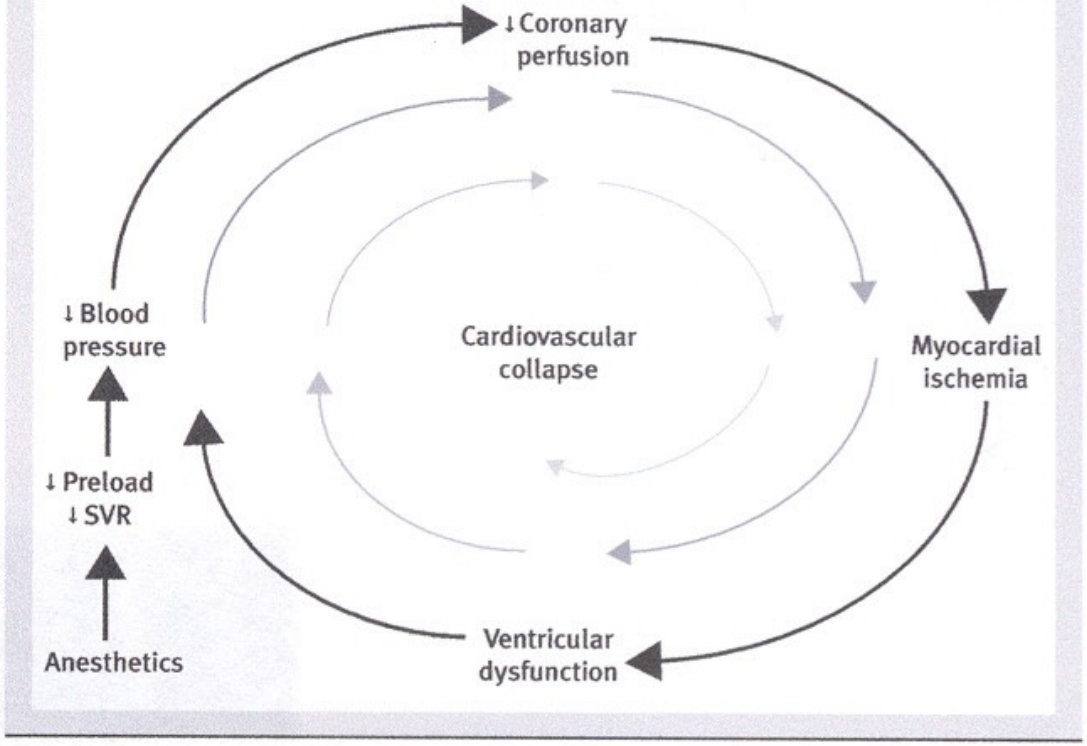
- In addition to some of the peripheral nerve block indications…
- Patient mentally prepared to accept neuraxial blockade
- No contraindications
- No need for routine labs unless meds or conditions dictate this

Absolute Contraindications for Neuraxial Blockade

- Patient refusal
- Infection at the site of injection
- Coagulopathy
- Severe hypovolemia
- Increased Intracranial pressure
- Severe Aortic Stenosis
- Severe Mitral Stenosis
- Ischemic Hypertrophic Sub-aortic Stenosis

Risk of Neuraxial Blockade with Aortic Stenosis/Ischemic Hypertrophic Sub-aortic Stenosis

Figure 4. Potential downward hemodynamic spiral



SVR indicates systemic vascular resistance.

Phillips D. Aortic Stenosis: A Review. AANA Journal, 74:4: 2006

Severe Mitral Stenosis

- Must avoid tachycardia. Tachycardia impairs ventricular filling, increases valvular gradient, exacerbates pulmonary congestion/hypertension.
- An abrupt decline in systemic vascular resistance may result in hypotension and reflex tachycardia.

Relative Contraindications

- Sepsis
- Uncooperative patients
- Pre-existing neuro deficits/neurological deficits
- Demylenating lesions
- Stenotic valuvular heart lesions (mild to moderate Aortic Stenosis/Ischemic Hypertrophic Sub-aortic Stenosis)
- Severe spinal deformities

Controversial

- Prior back surgery
- Inability to communicate with the patient
- Complicated surgeries that may involved prolonged periods of time to perform, major blood loss, maneuvers that may complicate respiration

Neuraxial anesthesia & pre-existing central nervous system disorders: Re-evaluating what we have been taught.

Neuraxial anesthesia and pre-existing CNS disorders

- Taught in the past that (Vandam & Dripps in 1956) to avoid spinal anesthesia in patients that have pre-existing CNS disorders.

JR Hebel, TT Horlocker, DR Schroeder. Neuraxial anesthesia and analgesia in patients with preexisting central nervous system disorders. Anesthesia & Analgesia. 223-228. 103(1), 2006.

Theoretical Reasons

- Mechanical trauma from needles/catheters
- Local anesthetic toxicity
- Neural toxicity (i.e. epinephrine)
- Chronic neural compromise

JR Hebel, TT Horlocker, DR Schroeder. Neuraxial anesthesia and analgesia in patients with preexisting central nervous system disorders. Anesthesia & Analgesia. 223-228. 103(1), 2006.

It is not as simple as that! It is difficult to “isolate” regional anesthesia as the cause of changes in the neurological status.

Contributing factors to deterioration in pre-existing neurological status

- Extremes of age/body habitus
- Surgical trauma
- Tourniquet inflation pressures/length of time for inflation
- Prolonged/difficult labor or normal vaginal delivery can result in a host of neurological deficits.
- Improper patient positioning
- Anesthetic technique
- Some diseases such as Multiple Sclerosis may become worse during the perioperative period.

JR Hebel, TT Horlocker, DR Schroeder. Neuraxial anesthesia and analgesia in patients with preexisting central nervous system disorders. Anesthesia & Analgesia. 223-228. 103(1), 2006.

The Study

- Retrospective study of 139 patients with confirmed pre-existing CNS disorders that included: multiple sclerosis, amyotrophic lateral sclerosis, or post polio syndrome.
- All patients had either neuraxial anesthesia or analgesia. 58 patients received epidural anesthesia and 81 received spinal anesthesia

JR Hebel, TT Horlocker, DR Schroeder. Neuraxial anesthesia and analgesia in patients with preexisting central nervous system disorders. Anesthesia & Analgesia. 223-228. 103(1), 2006.

The Study

- Of the 139 patients there were no reports of new or progressive developments in their disease, even though 74% of the patients reported active neurological symptoms.
- The addition of epinephrine to local anesthetic in 52% of the patients did not cause new or progressive symptoms

JR Hebel, TT Horlocker, DR Schroeder. Neuraxial anesthesia and analgesia in patients with preexisting central nervous system disorders. Anesthesia & Analgesia. 223-228. 103(1), 2006.

Take Home Message

- No definitive conclusion can be made regarding the safety of neuraxial blockade in patients with MS, ALS, PPS.
- Suggests that the belief that these conditions are absolute contraindications should be re-evaluated.
- Need further study…preferably prospective studies.

JR Hebel, TT Horlocker, DR Schroeder. Neuraxial anesthesia and analgesia in patients with preexisting central nervous system disorders. Anesthesia & Analgesia. 223-228. 103(1), 2006.

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- Warren, D.T. & Liu, S.S. (2008). Neuraxial anesthesia. In D.E. Longnecker et al (eds) *Anesthesiology.* New York: McGraw-Hill Medical.