Regional Anesthesia and the Trauma Patient

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Objectives:
Learning Objectives:
1. Choose techniques of never blockade that would be applicable to the trauma patient
2. Explain the current rationale of the beneficial effects of pain relief to the trauma patient
3. Discuss the practical problems in the trauma population such as compartment syndrome, nerve injury
4. Apply continuing catheters and multiple catheters in the trauma patient with multiple injuries and operations

Overview of Trauma Physiology

1. Why pain relief is important
   i) Minimize opioid need
      (1) Minimize side effects
      (2) Respiratory depression
      (3) Excessive sedation precluding assessment
   ii) Minimize immune suppression

2. Physiology of pain in the trauma patient
   i) Hormonal, biochemical
   ii) Hypermetabolic response
   iii) Proinflammatory state
      (1) NF-Kappa Beta
   iv) Neurochemistry
      (1) Neurotransmitters
      (2) Inflammatory mediators
         (a) Interleukins
         (b) Cytokines

3. The differences in the pain in trauma versus pain in elective surgery
   i) Advantages of regional anesthesia: How regional anesthesia and analgesia can be beneficial
   ii) The role of multimodal therapy in pain relief in trauma

4. Additional benefits of regional anesthesia and local anesthetics on perioperative outcome
   v) Alternative effects – systemic absorption
      (1) Intravenous effects of local anesthetics
Regional Anesthesia in Other Environments

i) Ambulance
ii) Emergency Room
iii) Battlefield

Chronic Pain in the Trauma Patient

i) Traumatic Amputation
   (1) Phantom Limb Pain
ii) The Chronic Pain Patient with Acute Pain

Practical Problems in Trauma Patients

(1) Consent
(2) Positioning
(3) Performing Regional Anesthesia in the presence of nerve injury
(4) The trauma patient with Coagulopathy
(5) Compartment syndrome

Situations Unique to the Trauma Patient

(1) Thoracic Trauma
   (a) Treatment of Pain from Rib fractures
      (i) Paravertebral
      (ii) Epidural

Peripheral Nerve Block and Peripheral Catheters

(1) Single Shot vs Continuous Catheter(s)
   (a) Indications
(2) Upper Extremity Blocks and Catheters
(3) Lower Extremity Blocks and Catheters
(4) Ultrasound and Nerve Stimulators
(5) Complications

Case Examples of Application of Regional Analgesia

(1) Multiple Catheters and Blocks in the Polytrauma Patient
(2) Case of Traumatic Amputation with Prolonged Quad Catheters
(3) Simultaneous Surgery on Bilateral Upper Extremity Trauma
BIBLIOGRAPHY

31. Raja, S.N. Is an ounce of preoperative local anesthetic better than a pound of postoperative analgesic? Regional anesthesia 21, 277.

DISCLOSURE
Covidien ,Honoraria ; Cadence ,Honoraria