Postherpetic Neuralgia

Postherpetic neuralgia is a neuropathic pain syndrome characterized by persistent pain >3 months after resolution of acute rash associated with herpes zoster infection. It develops in 10-15% of patients after acute herpes zoster, with 30-50% incidence in the elderly.

ANESTHETIC CONSIDERATIONS:

- Multimodal approach to pain management.
- Side effects of analgesic therapies.
- Possible withdrawal syndrome if acute discontinuation of long term medications.
- Interventional techniques for refractory PHN pain syndromes.

ANESTHETIC GOALS:

- Continue regular analgesic therapy during perioperative period.
- Be aware of possible drug interactions and adverse effects of commonly used analgesic adjuncts (TCAs and antidepressants, gabapentin and anticonvulsants, opioids, tramadol, topical lidocaine).
- Consider regional and neuraxial techniques to supplement postoperative pain control.

HISTORY

- Pain History
    - Duration of symptoms
        - Onset of rash vs. duration of pain
    - Characteristics of pain
        - Burning? Sharp? Hot? Shooting?
        - Numbness/tingling?
        - Allodynia? Hyperalgesia?
    - Distribution of pain
        - Along dermatome?
    - Aggravating factors?
    - Alleviating factors?
- Past medical history
- Social History
- Impact on social life
- Impact on work life
- Type of work
- Family History
- Social supports
- Medications and Therapies Tried
- Successes and failures
- Allergies/Intolerances

PHYSICAL

- Focussed physical exam
    - Motor exam
    - Sensory exam
    - Skin changes/rash
    - Allodynia
    - Hyperalgesia
    - Rule out other causes of pain:
        - MSK causes
        - Infectious causes

INVESTIGATIONS

- None unless otherwise clinically indicated

OPTIMIZATION

- Adequate preoperative pain control
- Adequate preoperative control of anxiety

ANESTHETIC OPTIONS

- Consider alternatives to GA
    - Local anesthetic infiltration
    - Regional nerve blockade
    - Neuraxial technique
- Interventional techniques for refractory pain despite multimodal analgesia
    - Intrathecal methyprednisolone 60mg in lidocaine
        - Epidural methylprednisolone not as effective as intrathecal administration
        - 1x/week x 4 times
        - improved vs. no treatment and vs intrathecal lidocaine alone
    - Spinal cord stimulation
        - For refractory pain >2years
    - Intrathecal alcohol/alcohol neurolysis

ANESTHETIC SETUP

- Standard anesthetic setup

MANAGEMENT OF ANESTHESIA

- **Induction**
- **Maintenance**
  - Patients taking anticonvulsants (carbemazepine, phenytoin) typically have decreased duration of neuromuscular blockade via a kinetic mechanism
  - Patients taking anticonvulsants (gabapentin, pregabalin) may have sedative effects that are additive with anesthetic medications
- **Emergence**

DISPOSITION & MONITORING

- **ANALGESIA**:
  - Postoperative analgesia may be an issue
  - Continue regular analgesics and prescribe analgesic therapy on top of regularly dosed medications
  - Consider regional technique or neuraxial technique
- **OXYGENATION**:
- **POSITIONING**:
- **MONITORING**:

COMPLICATIONS

- postoperative pain

PATHOPHYSIOLOGY

- Some patients with herpes zoster infection may have a prodrome of dermatomal pain before skin eruptions.
- Acute herpes zoster pain is moderate in severity and can be managed with analgesics. Pain usually subsides with resolution of rash.
- Post herpetic neuralgia (PHN) is defined as ongoing pain >3 months after resolution of the rash.
- Increased incidence in elderly
- Risk factors:
  - Increased pain during acute stage
  - Increased severity of skin lesions
  - Older age
  - Presence of prodrome
- Decreased incidence with treatment (antiviral tx: acyclovir, famciclovir, valacyclovir)
  - Also hastens healing of rash, reduces duration of viral shedding
- Conflicting results re: efficacy of neuraxial and peripheral nerve blocks/steroid injection performed during acute stage of herpes zoster to prevent occurrence of PHN
  - Epidural methylprednisolone and bupivicaine may improve pain and allodynia up to 1 year if administered >2-4 times.
  - Blocks are preferably done 2-4 weeks after onset of rash
- Treatment:
  - Pharmacologic management
    - 1st line: antidepressants including TCAs (Side Effects: anticholinergic effects)
    - 2nd line: opioids
    - 3rd line: tramadol
    - 4th line: gabapentin/pregabalin (Side effects: somnolence, dizziness, peripheral edema)
    - If quality of life, side effects, prevention of addiction and regulatory issues are to be considered with pain relieve, then gabapentin is the first drug of choice, then tramadol, opioids, and TCAs.
  - Topical therapies (for allodynia)
    - Topical lidocaine patch
    - May take >2 weeks for patient to notice improvement
  - Interventional Techniques
    - For pain refractory to pharmacologic therapies
      - Intrathecal methylprednisolone with lidocaine
        - Decreases CSF IL-8 levels and correlated with duration of global pain relief
      - Spinal cord stimulation
        - 82% success in case series of PHN >2 years in 23 patients
      - Intrathecal alcohol
        - From case report of 6 patients, pain was relieved by alcohol neurolysis of spinal thoracic dermatomes affected by herpes zoster

REFERENCES

- Barash Chapter 58
- Miller Chapter 58

Risk Factors in the Perioperative Management of Chronic Pain Patients

Conventional perioperative analgesia regimens do not meet the needs of chronic pain patients.

Unrelieved postoperative pain because of undermedication may provoke withdrawal.

Patients tend to underreport their medication.

With uncontrolled anxiety or fear of pain, patients tend to overestimate the effect of painful stimuli.

Epidural and intravenous opioid (including patient-controlled analgesia) requirements can be two to four times higher in opioid-consuming than in opioid-naive patients.

Prolonged recovery and need for postoperative analgesia should be expected.

Anxiety and insufficient coping result in poor compliance with analgesic strategies.

Individual variations in response to opioids may necessitate selection of the optimal drug and dosing by sequential trials.

Individual titration of doses to find the optimal balance between analgesia and adverse effects is required.

Adjuvant medication may interfere with anesthesia and postoperative analgesia.

Adapted from Kopf A, Banzhaf A, Stein C: Perioperative management of the chronic pain patient. Best Pract Res Clin Anaesthesiol 19:59-76, 2005.

Preoperative Considerations and Recommendations for Patients with Chronic Pain

Take a thorough history to identify all analgesic and adjuvant medications, risk factors, and comorbidity.

Educate the patient about the perioperative procedures, the potential for aggravated pain, and increased opioid requirements.

Communicate plans to the designated anesthesiologist in the operating room, the postanesthesia care unit, and the surgical and nursing personnel on the ward.

Differentiate among addiction, pseudo-addiction, and physical dependence in patients maintained on long-term opioid medication.

Expect physical dependence in patients receiving long-term opioid medication.

Continue previous long-acting opioid analgesics for short procedures.

For major surgery, calculate and order a background infusion of an equianalgesic opioid dose for patients held without oral intake for longer than 8 hours to be started in the operating room.

Order regular opioid medication on the morning of surgery.

Maintain anticonvulsant drugs and benzodiazepines at preoperative doses.

Discontinue all other adjuvants if kept without oral intake for longer than 24 hours.

Identify untreated depressive disorders with screening questions for disturbed sleep, depressed mood, reduced concentration, self-confidence, and motivation.

Identify untreated anxiety disorders with screening questions for restlessness, irritability, difficult-to-control anxiousness, and worrying.

Consider referral to a pain specialist for evaluation.

Choose regional or general anesthesia based on individual considerations.

Adapted from Kopf A, Banzhaf A, Stein C: Perioperative management of the chronic pain patient. Best Pract Res Clin Anaesthesiol 19:59-76, 2005.

Intraoperative and Postoperative Management Issues and Practical Recommendations

Start a background opioid infusion immediately when the patient arrives in the operating room.

Remove the opioid patch when major surgery is planned; with minor surgery, the patch may be continued without a background infusion.

Every chronic pain patient should be seen postoperatively three times daily to evaluate pain at rest, pain with exercise (e.g. coughing), nausea, sedation, mobilization, and sleep quality.

Monitor closely for signs of respiratory depression and withdrawal (e.g., unexplained tachycardia, restlessness, sweating, confusion, hypertension).

Integrate the patient in the acute pain service protocol if available.

Titrate a short-acting opioid for acute pain at two to four times the usual starting dose needed for an opioid-naive patient.

Add cyclooxygenase inhibitors, anticonvulsants, and other adjuvants as needed.

Evaluate the demand-delivery ratio of patient-controlled analgesia frequently; adapt the demand dose to the background infusion (the demand dose equals the hourly dose of the background infusion).

Increase the background infusion in patient-controlled analgesia in proportion to the cumulative daily opioid demand dose (add 50% to 75% of the daily demand dose to the background infusion).

Change the technique of postoperative analgesia if inadequate use persists despite repeated patient education.

If insufficient epidural analgesia is achieved with morphine, use epidural fentanyl or sufentanil.

In the event of escalation of the intravenous opioid dose, consider spinal/epidural opioid application or switch the intravenous agonist.

Reduce daily opioid doses after the second postoperative day stepwise to the preexisting dose.

Switch back to oral or transdermal medication as early as possible; use 50% to 75% of the last daily intravenous opioid dose as slow-release oral or transdermal delivery plus the rest as a demand dose.

When switching back to the transdermal route, consider 12- to 16-hour delayed effects and supply the patient for this period with sufficient on-demand analgesia.

Do not attempt to solve a chronic pain problem in the immediate postoperative period.

Use nonpharmacologic techniques (distraction, relaxation) when appropriate and offer counseling in the pain unit after postoperative recovery.

Adapted from Kopf A, Banzhaf A, Stein C: Perioperative management of the chronic pain patient. Best Pract Res Clin Anaesthesiol 19:59-76, 2005.