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Global Year Against Cancer Pain

OCTOBER 2008 – OCTOBER 2009

Interventional Techniques for Cancer Pain

Cancer pain may result either from primary or metastatic neoplasms or from invasive or diagnostic procedures. Cancer treatments that may cause pain include surgery, radiation, chemotherapy, immunotherapy, and hormonal therapy. The presentation of pain may depend on etiology; however, it is important to realize that patients with cancer are not immune to pain that commonly occurs in noncancer patients. Cancer pain is typically nociceptive, visceral, or neuropathic, or a combination of these. Interventional techniques targeted to control pain may be appropriate adjuvants or alternatives to oral or systemic pharmacological treatment. These techniques may also be more appropriate in patients who are unable to tolerate side effects of systemic medications. Some examples of interventional techniques are listed below.

Intraspinal Analgesia

Epidural

- Is the most common option for spinal or radicular pain caused by primary or metastatic lesions
- Causes lesions that may affect intervertebral disks, nerve roots, or spinal canal size
- Provides highly selective pain relief, while producing analgesia over a large area
- Targets cervical, thoracic, lumbar, or caudal levels
- Allows single injections of a steroid, sometimes with a local anesthetic (e.g., lidocaine or bupivacaine)
- Allows continuous infusions of an opioid with a temporary catheter

Intrathecal

- Provides highly selective pain relief of spinal origin
- Allows for minimal side effects typically associated with higher dosages of oral medications of the same type due to significantly reduced concentration and dosages
- May be tested with single injections of opioid and bupivacaine, clonidine, or ziconotide prior to catheter implantation
- May involve a permanent intraspinal catheter and implanted subcutaneous pump if the patient's survival expectancy is more than 3 months
- Options include (single agents or multi-agent combinations):
  - Morphine
  - Hydromorphone
  - Fentanyl
  - Sufentanil
  - Bupivacaine
  - Clonidine
  - Ziconotide
  - Baclofen
  - Meperidine (pethidine)

Nerve Blocks

- Target regional symptoms in the distribution of single or multiple peripheral nerves
- Allow single or multiple injections of a steroid, sometimes with a local anesthetic
- Provide short-term, and potentially long-term benefits, but not permanent relief
- Options include:
  - Trigger point injection for myofascial pain
  - Local anesthetic injection administered in sympathetic ganglia for CRPS
  - Stellate ganglion block for head and neck pain

- Lumbar sympathetic chain block for nociceptive or neuropathic cancer pain affecting the lower extremity

Neurolytic Procedures

- Are useful in neuropathic or visceral pain in the distribution of specific peripheral or autonomic nerves
- Typically follow a diagnostic nerve block performed with local anesthetic
- Use chemical neurolysis to destroy peripheral or autonomic nerves
- Use ethyl alcohol or phenol as neurolytic agents
- Options include:
  - Hyperbaric phenol saddle block for midline perineal pain in patients with rectal and pelvic malignancies
  - Celiac plexus block for visceral pain of gastrointestinal origin, particularly pancreatic cancer
  - Intrapleural phenol block for visceral pain associated with esophageal cancer
  - Superior hypogastric plexus block for tumor extension into the pelvis
  - Ganglion impar block for visceral pain of the perineum

Spinal Cord Stimulation

- Is useful in chronic neuropathic pain in the setting of chronic regional pain syndrome, postherpetic neuralgia, chemotherapy-induced peripheral neuropathy, and postradiation nerve injury

Peripheral Nerve Stimulation

- Has the same indications as above, but its utility is limited to neuropathic pain involving specific nondermatomal peripheral nerves
- Allows suboccipital placement for migraines
- Provides an alternative to regional nerve block

References

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