



PALLIATIVE CARE CASE OF THE MONTH

“Nerve Blocks”
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Case: The patient is a 46-year-old man with a history of locally advanced oropharyngeal carcinoma of the right tonsil/tongue base, status post definitive chemotherapy and radiation, who presents to clinic with radiation-induced facial pain. He has sharp, severe pain originating around his right ear, radiating down his mandible and into the side of his neck. The pain limits his ability to open his jaw, thereby limiting his ability to eat. Carbamazepine, steroids, and magic swizzle have been largely ineffective, and escalating doses of his fentanyl patch and oxycodone are not helping either. He is worried about addiction and prefers to wean his opioids if possible. A question about the utility of a peripheral nerve block was raised.

Discussion: Pain is highly prevalent in patients with cancer. Conventional analgesics are able to control pain in most cases. However, in 10-20% of patients, pain will remain sub-optimally controlled.^{1,2} Interventional techniques may be considered as an adjunct to improve analgesia and quality of life in cases of refractory pain, particularly when opioids have been ineffective or have dose-limiting side effects. The purpose of this case of the month is to review the definition of a nerve block, the different types, their indications for use, potential side effects/complications, and contraindications.

DEFINITION

The term “nerve block” encompasses any procedure that uses a needle or device to deliver an analgesic medication. Drug can be delivered in a single injection or continuous infusion using a pump. Blocks are categorized as *non-neurolytic* or *neurolytic* depending on the type of drug injected. With non-neurolytic blocks, a local anesthetic (e.g. bupivacaine or morphine) anesthetizes the area while preserving nerve tissue. Alternatively, in neurolytic blocks, a substance like alcohol or glycerol destroys nerve tissue in order to disrupt pain signals.³ Pain relief is usually immediate. The analgesic effect may be permanent or may necessitate repeat injections in a few months.

TYPES OF BLOCKS

The main types of nerve blocks used for pain relief include sympathetic blocks, intraspinal blocks (epidural and intrathecal), and peripheral nerve blocks.

Sympathetic Blocks

Sympathetic blocks, also called “autonomic blocks”, are particularly useful for visceral pain. Each block targets a specific body region as follows: celiac plexus block for deep visceral pain from the upper abdomen (pancreas, liver, biliary system, mesentery), superior hypogastric block for pelvic and urogenital pain, splanchnic nerve block for more diffuse metastatic disease of the abdomen, and ganglion impar block for rectal and perineal pain.^{4,5}

Stellate ganglion blocks can be used for pain in the head/neck, chest, and arms for things like post herpetic neuralgia, angina, phantom limb, upper extremity pain, and complex regional pain syndrome.^{5,6}

Intraspinal Blocks

Intraspinal blocks are unique in that drug is delivered close to the site of action (opioid receptors in the dorsal horn), by injecting into the epidural or subarachnoid space. As a result, much lower medication doses are required, there is less risk of systemic side effects, and drugs without oral equivalents can be exploited for nociceptive and neuropathic pain relief (i.e. local anesthetics, clonidine, ziconitide, or baclofen for spasticity).^{2,6,7} Intrathecal pumps are usually considered in patients with a life expectancy of at least six months – some experts are now saying three months – based on cost-benefit analysis.^{2,8}

Peripheral Nerve Blocks

Peripheral nerve blocks can be used when pain occurs in the region of one or more peripheral nerves. Any accessible nerve is a potential target. In the case of our patient, a mixture of bupivacaine and dexamethasone was injected into the sphenopalatine fossa for a trigeminal nerve V2 branch block under fluoroscopic guidance. In a prospective case series of fifteen patients, Nader *et al* showed that US-guided trigeminal nerve block with bupivacaine/dexamethasone was safe and effective for trigeminal neuralgia or unilateral atypical facial pain that was refractory to medical or surgical therapies.⁹ All fifteen patients reported pain relief within five minutes of the injection, and in 10 out of 15 patients the pain relief was sustained for the 15-month study period. The incidence of medication toxicity or neurologic complications was zero.

SIDE EFFECTS/COMPLICATIONS

Known complications of nerve blocks include procedural pain, infection, bleeding/hematoma, and nerve damage. There are also complications specific to each type of block. For example, sympathetic blocks can cause orthostatic hypotension, transient diarrhea, or even hiccups (in the case of a celiac plexus block).^{2,6} Intraspinal blocks can have associated technical problems like catheter dislodgement and pump malfunction.⁵ Lastly, peripheral nerve blocks carry a risk of painful neuritis and paresthesia. With any of these procedures, the potential for permanent neurologic damage is frightening but rare.

CONTRAINDICATIONS

Coagulopathy is a contraindication due to increased risk of hematoma or hemorrhage. There are published guidelines from the American Society of Regional Anesthesia for holding conventional anticoagulants and antiplatelet agents prior to a nerve block procedure, though no recommendations exist yet regarding the newer oral anticoagulants.¹⁰

Personal details in the case published have been altered to protect patient privacy.

For palliative care consultations please contact the Palliative Care Program at PUH/MUH, 647-7243, beeper 8511, Shadyside Dept. of Medical Ethics and Palliative Care, beeper 412-647-7243 pager # 8513, Perioperative/ Trauma Pain 647-7243, beeper 7246, UPCI Cancer Pain Service, beeper 644-1724, Interventional Pain 784-4000, Magee Women's Hospital, beeper 412-647-7243 pager #: 8510, VA Palliative Care Program, 688-6178, beeper 296. Hillman Outpatient: 412-692-4724. For ethics consultations at UPMC Presbyterian-Montefiore and Children's page 958-3844. With comments about “Case of the Month” call Dr. Robert Arnold at (412) 692-4834.



Resolution of Case: This patient underwent trigeminal nerve block and experienced significant relief of his facial pain almost immediately. The relief persisted to the time of his next follow-up visit in clinic a few weeks later, and his opioids were able to be weaned. With improvement in the pain, he was able to more actively participate in jaw rehab, resulting in increased jaw range of motion and improved oral intake. Given his success with the first procedure, he will be considered for repeat peripheral nerve block if the pain intensifies in the future.

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