

FAST FACTS AND CONCEPTS #97 BLOCKS OF THE SYMPATHETIC AXIS FOR VISCERAL PAIN

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Background The sympathetic nervous system spans the length of the axial skeleton; most of the various plexi and ganglia are readily accessible to percutaneous interruption. In the palliative care setting, the most common indication for interrupting the sympathetic axis is to control pain arising from malignancies of the abdominal and pelvic viscera. Visceral pain is often described as constant, deep and is difficult to localize and characterize. When such a pain syndrome is recalcitrant to meticulous application of drug and behavioral therapy, or if the patient is intolerant to drug therapy, consultation should be sought to either a Pain specialist or Interventional Radiologist for consideration of neurolytic procedures. Potential advantages of a neurolytic procedure, compared to spinal and epidural anesthetic techniques (see *Fast Fact #98*), include cost savings and avoidance of hardware (e.g. catheters, tubes, pump), which can be cumbersome, are subject to malfunction, and pose an infection risk.

Types of Blocks The following procedures have an established record of success in well-selected patients:

- *Celiac plexus block (CPB)*. Used for upper abdominal pain – most commonly from pancreatic cancer. It is also appropriate for pain involving the GI tract from the distal third of the esophagus to the transverse colon, the liver and biliary tract, the adrenals, and mesentery. There have been over 14 controlled studies assessing the utility of a CPB, two of which are felt to be of high quality design. The data is fairly convincing that CPB can improve analgesia, decrease opioid consumption and decrease opioid-induced adverse effects compared with conventional analgesic treatments.
- *Superior hypogastric plexus block (SHPB)*. Applicable to malignant pain of the gastrointestinal tract from the descending colon to the rectum, as well as the urogenital system. There is less robust data evaluating SHPB for visceral pain, with one study showing a decrease in pain intensity and less morphine consumption when SHPB was utilized.
- *Ganglion impar block*. Pain involving the rectum and perineum.

Procedure For CPB, patients are positioned supine or prone, according to operator preference and patient comfort. Patients are intravenously hydrated and sedated. The skin and underlying tissues are infiltrated with local anesthetic. Neurolytic blocks are often preceded by local anesthetic blocks to assess adequacy of analgesic response before executing a neurodestructive procedure. In the palliative setting, local anesthetic blocks are often waived due to logistical and patient comfort issues. Neurolytic procedures are always performed under fluoroscopic, CT, or endoscopic ultrasound to minimize potential for damage to organs and spinal cord. Blocks are performed with ethyl alcohol (50-100%) or phenol (6-10%). Neurolytic blocks may provide several months of analgesia and may be repeated.

Complications & Side Effects Side effects – referable to loss of sympathetic tone – include transient hypotension and increased intestinal motility leading to diarrhea. However, often the diarrhea is preferred over opioid induced constipation. Complications include needle injury to visceral, neural, and vascular structures; pain at the injection site; and failure to obtain an analgesic response. Contraindications to these procedures include bleeding diathesis and local infection.

Post-Procedural Management Crucial to the success of sympatholysis is proper patient selection and technical skill. Sympathetic blocks are not a panacea and generally do not obviate the need for ongoing pharmacological management of residual pain. However, they can substantially improve analgesia and quality of life, and *may* allow for opioid dosage reduction. Note: attempts at post-block opioid reduction should be done with care to avoid unmasking existing nociceptive/neuropathic pain and precipitating opioid withdrawal.

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