

This document describes the indications for a given procedure, and how they are each performed.

Descriptions of Pain Procedures

(last modified 11/10/04)

<u>Procedure</u>	<u>Pt. Position</u>	<u>Equipment</u>	<u>Solutions</u>
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1. Diagnostic Facet – Cervical

Indications – Cervical facet joint mediated pain, whiplash, occipital region pain, arthritis of the neck.
 Contra-indications – infection in the area of injection, anti-coagulation (coagulopathy) that cannot temporarily be reversed, prior severe adverse reaction to local anesthetics, psychosis.

<i>Supine or Prone</i>	sterile surgical cloths	(4)	1% Lidocaine (about 10cc)
	sterile 4x4s	(4-6)	Betadine (10 cc)
	16 or 18 ga. Needle	(1)	
	One 25 ga. 1.5 inch needle (for each level done)		
	6 or 10 cc syringe body	(1)	
	5 cc syringe body	(1)	

Description

This procedure is a neck area injection used as a first stage for the diagnosis of pain originating from the small, posterior joints of the neck called the facet or zygapophyseal joints. A small nerve (the medial branch of the first dorsal ramus) which transmits pain from the degenerated joint is blocked with small amounts of lidocaine. Generally several levels are blocked during each procedure to ensure all the joints of concern are included. This is a temporary block. However, if significant pain relief is obtained, a diagnosis of a facet syndrome is made. A follow-up injection will be scheduled, for radiofrequency denervation, which is the more permanent procedure. At times the diagnostic medial branch block may need to be repeated if the initial response is uncertain.

2. Diagnostic Facet – Lumbar

Indications - Lumbar facet joint mediated pain, hyperextension injury, arthritis of the low back.
 Contra-indications – infection in the area of injection, anti-coagulation (coagulopathy) that cannot temporarily be reversed, prior severe adverse reaction to local anesthetics, psychosis.

<i>Prone</i>	sterile surgical cloths	(4)	% Lidocaine (about 10cc)
	sterile 4x4s	(4-6)	Betadine (10 cc)
	16 or 18 ga. Needle	(1)	
	One 22 ga. 3.5 or 5 inch spinal needle (for each level done)		
	6 or 10 cc syringe body	(1)	
	5 cc syringe body	(1)	

This procedure is a low back area injection used as a first stage for the diagnosis of pain originating from the small, posterior joints of the low back called the facet or zygapophyseal joints. A small nerve (the medial branch of the first dorsal ramus) which transmits pain from the degenerated joint is blocked with small amounts of lidocaine. Generally several levels are blocked during each procedure to ensure all the joints of concern are included. This is a temporary block. However, if significant pain relief is obtained, a diagnosis of a facet syndrome is made. A follow-up injection will be scheduled, for radiofrequency denervation, which is the more permanent procedure. At times the diagnostic medial branch block may need to be repeated if the initial response is uncertain.

3.RF Medial Branch Denervation – Cervical

Indications – AFTER SUCCESSFUL DIAGNOSTIC MEDIAL BRANCH BLOCK, OR PRIOR SUCCESSFUL RF PROCEDURE- Cervical facet joint mediated pain, whiplash, occipital region pain, arthritis of the neck.

Contra-indications – infection in the area of injection, anti-coagulation (coagulopathy) that cannot temporarily be reversed, prior severe adverse reaction to local anesthetics, psychosis.

Prone or Supine

RF generator, Radionics RFG 3C	Versed IV (1-3 mg.)
Small rolling cart for RF generator	Fentanyl IV (50-150mcgm)
Sterile RF probes with connector cord	Saline – pres. Free (6-8 cc)
(for C-spine supine will need 2.5 inch,	Betadine (10 cc)
prone will need 4 inch)	1% Lidocaine (about 10cc)
Teflon coated RF needle (1) to match	Kenalog (40 mg.)
probe length.	0.25% Bupivacaine (6-8 cc)
(if multiple done per day will	
need more than one of each	
probe and needle)	
sterile surgical cloths (4)	
sterile 4x4s (4-6)	
16 or 18 ga. Needle (1)	
6 or 10 cc syringe body (2)	
5 cc syringe body (1)	
Tubing Connector	

After a positive diagnostic medial branch block has been performed, a patient will be scheduled for a radiofrequency denervation at the same levels done in the diagnostic block. In this procedure the medial branch of the first dorsal ramus at each spinal level involved is heated with a direct form (not pulsed) of radiofrequency energy. The heating is preceded by a test phase during which time a patient must relate that the test does not result in symptoms into any appendages, and that the test does reproduce the usual area of the patients' cervical area pain. Once this is done a small amount of steroid is used to avoid post procedure neuritis (pain), and the nerve is then denervated at 80 degrees Centigrade for 90 seconds. This effectively blocks the signal via both heating and direct RF field effect. The myelin sheath is somewhat melted. This generally yields pain relief for up to one year, and can be repeated thereafter if needed. Sedation is used because this procedure can be mildly painful.

4.RF Medial Branch Denervation – Lumbar

Indications - AFTER SUCCESSFUL DIAGNOSTIC MEDIAL BRANCH BLOCK, OR PRIOR SUCCESSFUL RF PROCEDURE, Lumbar facet joint mediated pain, hyperextension/twisting injury, arthritis of the low back.

Contra-indications – infection in the area of injection, anti-coagulation (coagulopathy) that cannot temporarily be reversed, prior severe adverse reaction to local anesthetics, psychosis.

RF generator, Radionics RFG 3C	Versed IV (1-3 mg.)
Small rolling cart for RF generator	Fentanyl IV(50-150mcgm)
Sterile RF probe (4 in) with connector cord	Saline – pres. Free (6-8 cc)
Teflon coated RF needle (1) to match	Betadine (10 cc)
probe length.	1% Lidocaine (about 10cc)
(if multiple done per day will	Kenalog (40 mg.)
need more than one of each	0.25% Bupivacaine (6-8)
probe and needle)	

sterile surgical cloths	(4)
sterile 4x4s	(4-6)
16 or 18 ga. Needle	(1)
6 or 10 cc syringe body	(2)
5 cc syringe body	(1)
Tubing Connector	

After a positive diagnostic medial branch block has been performed, a patient will be scheduled for a radiofrequency denervation at the same levels done in the diagnostic block. In this procedure the medial branch of the first dorsal ramus at each spinal level involved is heated with a direct form (not pulsed) of radiofrequency energy. The heating is preceded by a test phase during which time a patient must relate that the test does not result in symptoms into any appendages, and that the test does reproduce the usual area of the patients' lumbar area pain. Once this is done a small amount of steroid is used to avoid post procedure neuritis (pain), and the nerve is then denervated at 80 degrees Centigrade for 90 seconds. This effectively blocks the signal via both heating and direct RF field effect. The myelin sheet is somewhat melted. This generally yields pain relief for up to one year, and can be repeated thereafter if needed. Sedation is used because this procedure can be mildly painful.

5.Epidural Injection – Cervical

Indications – Cervical disk herniation, radiculopathy, cervical stenosis, spondylosis, failed neck syndrome.

Contra-indications - infection in the area of injection, anti-coagulation (coagulopathy) that cannot temporarily be reversed, prior severe adverse reaction to local anesthetics, iodinated contrast, or steroid, psychosis.

Prone	Epidural Kit with 20 Ga. Tuohy	Isovue 200 contrast (8 cc)
	sterile surgical cloths (4)	Kenalog (40 or 80 mg.)
	sterile 4x4s (4-6)	
	Tubing Connector	

An epidural injection is a means for introducing medications into the epidural space of the spine. A translaminar epidural is performed by introducing a needle into the midline of the back at the cervical level of interest (between lamina of two levels). It is then advanced until it just enters the epidural space (as noted by loss of resistance). This area is largely filled with fatty tissue and veins. The injectate is usually a steroid, though local anesthetic and other medications can be used. The steroid provides a potent anti-inflammatory effect, thereby knocking out the irritation to the nervous system. This irritating inflammatory cascade does not necessarily return immediately, and the duration of effect can be on the order of months, but is variable from one patient to the next.

6.Epidural Injection – Lumbar

Indications – Lumbar disk herniation, radiculopathy, Lumbar spinal stenosis, spondylosis, failed back syndrome.

Contra-indications - infection in the area of injection, anti-coagulation (coagulopathy) that cannot temporarily be reversed, prior severe adverse reaction to local anesthetics, iodinated contrast, or steroid, psychosis.

Prone	Epidural Kit with 20 Ga. Tuohy	Isovue 200 contrast (8 cc)
	sterile surgical cloths (4)	Kenalog (40 or 80 mg.)
	sterile 4x4s (4-6)	
	Tubing Connector	

An epidural injection is a means for introducing medications into the epidural space of the spine. A translaminar epidural is performed by introducing a needle into the midline of the back at the lumbar level of interest (between lamina of two

levels). It is then advanced until it just enters the epidural space (as noted by loss of resistance). This area is largely filled with fatty tissue and veins. The injectate is usually a steroid, though local anesthetic and other medications can be used. The steroid provides a potent anti-inflammatory effect, thereby knocking out the irritation to the nervous system. This irritating inflammatory cascade does not necessarily return immediately, and the duration of effect can be on the order of months, but is variable from one patient to the next.

7. Selective Nerve Root Block – Lumbar

Indications – Lumbar disk herniation, radiculopathy, spondylosis, failed back syndrome.

Contra-indications - infection in the area of injection, anti-coagulation (coagulopathy) that cannot temporarily be reversed, prior severe adverse reaction to local anesthetics, iodinated contrast, or steroid, psychosis.

<i>Prone</i>	sterile surgical cloths	(4)	1% Lidocaine (about 10cc)
	sterile 4x4s	(4-6)	Betadine (10 cc)
	8 ga. needle	(1)	Kenalog (40 or 80 mg.)
	6 or 10 cc syringe body		0.25% Bupivacaine (6-8 cc)
	Tubing Connector		Isovue 200 contrast (8 cc)
	22 ga. 3, 5, or 7 in spinal needle		
	5 cc syringe body	(1)	

A selective nerve root block is a variant of the translaminar epidural injection. It is generally used when a patient's symptoms localize to one side at one spinal level. The steroid or other medication is better focused at the one appropriate level by a needle approach which is different from the midline approach used in a translaminar epidural injection. The approach is into the neural foramen of interest. The needle is advanced into the foramen, and the injectate is then left there, with resulting spread into the epidural space from the foramen of interest. This also bathes the selected nerve root with the injectate, which is usually a steroid with or without local anesthetic.

8. Cervical Sympathetic Block - (Stellate Ganglion)

Indications – Complex regional pain syndrome of the arm/shoulder (Reflex sympathetic dystrophy)

Contra-indications - infection in the area of injection, anti-coagulation (coagulopathy) that cannot temporarily be reversed, prior severe adverse reaction to local anesthetics, psychosis.

<i>Supine</i>	sterile surgical cloths	(4)	1% Lidocaine (about 10cc)
	sterile 4x4s	(4-6)	Betadine (10 cc)
	16 or 18 ga. Needle	(1)	Isovue 200 contrast (8 cc)
	25 ga. 1.5 inch needle	(1)	
	10 cc syringe body	(1)	
	5 cc syringe body	(1)	
	Tubing Connector		

The stellate ganglion lies in the neck at the C7 level over the anterior aspect of the transverse process on either side. It is like a switchboard for the autonomic nervous system into the arm on that particular side. By blocking this switchboard with local anesthetic, several things occur. First, the autonomic, sympathetic signals into the arm are blocked, which increases blood flow in the arm. Also, if an autonomic pain syndrome of the arm, such as complex regional pain syndrome (CRPS) (also known as Reflex Sympathic Dystrophy (RSD)) is a patient's problem, the pain signals mediated through the stellate ganglion are blocked when it is anesthetized. Therefore, a way to treat CRPS of the arm is by blocking the stellate ganglion. Patients also develop a Horner's syndrome and often a gravelly voice due to this block, as predictable, benign consequences. The duration of effect of this block is variable. Ideally, the duration of response lengthens as the autonomic

pain syndrome calms down. However, these blocks usually must be done in a series. Arm temperature is monitored before and after the block for an increase of several degrees. This acts as verification of a good block.

9. Lumbar Sympathetic Block

Indications – Complex regional pain syndrome of the leg/hip (Reflex sympathetic dystrophy)

Contra-indications - infection in the area of injection, anti-coagulation (coagulopathy) that cannot temporarily be reversed, prior severe adverse reaction to local anesthetics, psychosis.

Prone	sterile surgical cloths	(4)	0.25 % Bupivacaine(20cc)
	sterile 4x4s	(4-6)	Betadine (10 cc)
	16 or 18 ga. Needle	(1)	Isovue 200 contrast (8 cc)
	25 ga. 1.5 inch needle	(1)	Versed IV (1-3 mg.)
	22 ga. 5 or 7 inch spinal needle (1)		Fentanyl IV (50-150mcgm)
	20 cc syringe body	(1)	
	10 cc syringe body	(1)	
	5 cc syringe body	(1)	
	Tubing Connector		

A lumbar sympathetic block is the equivalent block for the leg that the stellate ganglion block is for the arm.

The lumbar sympathetic ganglion lies at the anterolateral aspect of the L2 vertebral body. It is like a switchboard for the autonomic nervous system into the leg on that particular side. By blocking this switchboard with local anesthetic, several things occur. First, the autonomic, sympathetic signals in to the leg are blocked, which increases blood flow in the leg. Also, if an autonomic pain syndrome, such as complex regional pain syndrome (CRPS) (also known as Reflex Sympathetic Dystrophy (RSD)) is a patient's problem, the pain signals mediated through the lumbar sympathetic ganglion are blocked when it is anesthetized. Therefore, a way to treat CRPS of the leg is by blocking this ganglion. The duration of effect of this block is variable. Ideally, the duration of response lengthens as the autonomic pain syndrome calms down. However, these blocks usually must be done in a series. Leg temperature is monitored before and after the block for an increase of several degrees. This acts as verification of a good block.

10. Sacroiliac Joint or other major joint INJ.

Indications – Sacroiliac joint (or other joint) related arthritis/pain

Contra-indications - infection in the area of injection, anti-coagulation (coagulopathy) that cannot temporarily be reversed, prior severe adverse reaction to local anesthetics, steroid, psychosis.

Varies	sterile surgical cloths	(4)	1% Lidocaine (about 10cc)
	sterile 4x4s	(4-6)	Betadine (10 cc)
	16 or 18 ga. needle	(1)	Kenalog (40 or 80 mg.)
	25 ga. 1.5 inch needle	(1)	0.25% Bupivacaine (6-8 cc)
	22 ga. 3, 5, or 7 inch spinal needle	(1)	Isovue 200 contrast (8 cc)
	6 or 10 cc syringe body	(1)	
	5 cc syringe body	(1)	
	Tubing Connector		

Sacro-iliac or other large joints may become painful due to arthritic degeneration. Often direct injection of a steroid into the joint relieves this pain due to the potent anti-inflammatory effect of the steroid. Approaches for injection into these joints are varied, but generally require x-ray guidance. The duration of response varies depending on several things, including severity of the degeneration, and spread of the medicine into the joint.