

Nerve Block Injections

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Coding Communication:Nerve Block Injections

As clinical practice techniques continue to evolve into newly discovered methods that improve the effectiveness, efficiency, and overall outcome of procedures, so must the reporting methods and guidelines that capture these services. The focus of this coding communication is to allow for the recognition and appropriate reporting of the new and revised CPT codes implemented in 2003 that describe injection of anesthetic agents and daily hospital management of continuous drug administration to reflect current clinical practice. Specifically, procedures involving injection of anesthetic agents (nerve block) to the brachial plexus, sciatic and femoral nerves for postoperative pain control and/or chemical sympathectomy.

Brachial Plexus

Let us first look at the two codes for an injection of an anesthetic agent, often referred to as a nerve block, to the brachial plexus. They are as follows:

64415Injection, anesthetic agent; brachial plexus, single

64416Injection, anesthetic agent; brachial plexus, continuous infusion by catheter (including catheter placement) including daily management for anesthetic agent administration

Code 64415 was revised in CPT 2003 to describe the procedure more clearly. Prior to the revision, the code descriptor did not identify the number of injections of the brachial plexus but rather simply stated, Injection, anesthetic agent; brachial plexus. Code 64415 refers to only a single injection (block) of the brachial plexus. Additionally, code 64415 does cover the majority of brachial plexus blocks that are used for anesthesia for surgery or occasionally for treatment of reflex sympathetic dystrophy (chronic regional pain syndrome) or other painful conditions of the upper extremity.

The 64415 code revision was considered necessary to distinguish the single injection from a new procedure, continuous brachial plexus block. Thus, code 64416 was added to CPT



2003 to accurately report continuous administration of local anesthetic via a catheter for post-operative pain control and chemical sympathectomy. Such continuous procedures are used, for example, to provide pain relief or a reversible sympathectomy to provide increased blood supply to the upper extremity for several days. This new procedure (code 64416), is also used for ischemia of the extremity, replanted digits, post-operative pain control, and occasionally for reflex sympathetic dystrophy and chronic pain.

To help better understand the brachial plexus nerve blocks, consider the following intra-service work associated with codes 64415 and 64416.

Code 64415

After obtaining informed consent, the patient's right arm is abducted at the shoulder and flexed at the elbow with his hand positioned above his right shoulder. The axilla is prepped with a betadine solution and a 22-gauge, short-bevel needle inserted into the brachial plexus sheath after anesthetizing the skin with a small amount of local anesthetic. The proper location of the needle is ascertained with the use of a nerve stimulator, the elicitation of paresthesias, or the transarterial technique. An axillary block using the injection of 30-40 ml of local anesthetic is now performed after using a small test dose of the local anesthetic and frequent aspiration during the injection. The density and function of the block is then assessed over the next 30 minutes. Active physical therapy to the hand and digits is administered while the patient's arm and hand are anesthetized.

The complications of an axillary block include possible infection, injury to the axillary artery with hematoma formation, systemic local anesthetic toxicity and nerve injury, fortunately these complications are rare.

Code 64416

After obtaining informed consent, the patient is sedated lightly, if necessary. His right arm is abducted at the shoulder and flexed at the elbow with his hand positioned above his right shoulder. The axilla is prepped with a betadine solution and an 18- or 20-gauge, 2-in angiocath-type catheter is inserted into the brachial plexus sheath after anesthetizing the skin with a small amount of local anesthetic. The proper location of the needle is ascertained with the use of a nerve stimulator, the elicitation of paresthesias, or the loss of resistance technique. The needle is removed and the plastic sleeve or cannula left in position. Next, an epidural-type plastic catheter is inserted through the sleeve into the brachial plexus sheath and fixed in place with tape or suture. An axillary block using the injection of about 30-40 ml of local anesthetic is now performed after using a small test dose of the local anesthetic and frequent aspiration during the injection. The density and function of the block is then assessed over the next 30 minutes. A continuous infusion of local anesthetic is now started.

Over the next several days, the continued efficacy and function of the block is evaluated and adjustments in the infusion made as necessary. This continued follow-up is included in the new code for continuous brachial plexus block.

In addition to the usual complications of an axillary block, infection, injury to the axillary artery with hematoma formation and vascular insufficiency, systemic local anesthetic toxicity are all possible complications of the continuous catheter technique. Fortunately, these complications are not common.

Sciatic Nerve

Let us now turn our attention to the codes for an injection of an anesthetic agent to the sciatic nerve.

64445 Injection, anesthetic agent; sciatic nerve, single

64446 Injection, anesthetic agent; sciatic nerve, continuous infusion by catheter, (including catheter placement) including daily management for anesthetic agent administration

Before code 64445 was revised in 2003, it did not identify the number of injections (blocks) of the sciatic nerve. As a result of the revision, code 64445 now refers to a single injection (block) of the sciatic nerve. Code 64445 does cover the sciatic nerve blocks that are used for immediate post-operative pain control and occasionally for ischemic conditions, reflex sympathetic dystrophy (chronic regional pain syndrome), or other painful conditions of the lower extremity.

As in the case of the brachial plexus single injection nerve block (code 64415), the 2003 code descriptor modification of 64445 was essential to reflect appropriate reporting of the new procedure, continuous sciatic nerve block. As a result, code 64446 was added in 2003 as a mechanism to report continuous sciatic nerve block. This code is reported for the continuous administration of local anesthetic via a catheter for postoperative pain control and/or chemical sympathectomy. This continuous procedure is used for several days for treatment of regional ischemia of the extremity, for postoperative pain control with reconstructive procedures on the foot and ankle, as well as the posterior knee. Additionally, it may also occasionally be used for the treatment of reflex sympathetic dystrophy and chronic pain.

To obtain a better understanding of the sciatic nerve blocks, let us look at the intra-service work associated with codes 64445 and 64446.

Code 64445

Informed consent is obtained preoperatively. In the postanesthesia recovery room or in the operating room after surgery on the foot and ankle is completed, the patient is placed in the right lateral position and the thigh flexed on the hip to 45°. The posterior superior iliac spine (PSIS), the greater femoral trochanter, and sacral hiatus are identified and marked. A line is drawn between the superior and posterior aspect of the greater trochanter and the PSIS. The line is bisected and a perpendicular dropped 3-5 cm from the midpoint of the line to the needle insertion site. The point of insertion should lie along a third line drawn between the greater trochanter and the sacral hiatus. The skin is prepped and draped and a 6-in, 22-gauge, short-bevel insulated nerve stimulator needle is advanced perpendicular to the skin. The needle is advanced 6-8 cm with a stimulation intensity of 1.5-2.0 mA and adjusted downwards as evoked motor response increases. Plantar flexion at less than 0.5 mA is the desired goal and indicates placement of the needle near the medial part of the nerve. After a negative aspiration, the needle is held firm and local anesthetic injected incrementally. Attention is paid to the presence of paresthesias, reflex movement, and resistance to injection. Efficacy of the block may be improved by depositing the local anesthetic in more than one location, such as laterally (peroneal component) and medially (tibial component). The mean duration of analgesia is 14 hours but can range up to 24 hours.

Code 64446

Informed consent is obtained preoperatively. In the postanesthesia recovery room or in the operating room after surgery on the foot and ankle is completed, the patient is placed in the right lateral position and the thigh flexed on the hip to 45°. The greater femoral trochanter and ischial tuberosity are marked and a line is drawn from the popliteal fossa to



midway between the two landmarks. A 20-gauge insulated needle is introduced vertically to the skin, just medial to the upper end of the marked line to determine the depth of the sciatic nerve. A brisk motor response in the ankle, foot, or toes is noted with less than 0.4 mA stimulation.

Next, an insulated Touhy needle is advanced from approximately 5 cm cephalad and angled to intersect the tip of the first needle. Nerve stimulation is again noted and a catheter then advanced through the Touhy needle 50-100 mm. The electrical connection is then transferred to the catheter and nerve stimulation is again noted. The Touhy needle is removed, the catheter sutured in place, a bacterial filter is attached, and 15-20 ml of local anesthetic is injected through the catheter. Block of the sciatic nerve is then accessed over the next 15-30 minutes and an infusion of local anesthetic started. Required infusion rates typically range from 2-12 ml/hr. Occasionally, bolus injections (10-15 ml) are required. The infusion is usually stopped at about 48 hours postop.

The complications of a continuous sciatic nerve block include possible infection, injury to the sciatic nerve with neuralgia, and systemic local anesthetic toxicity. Fortunately, these complications are rare.

Over the next several days, the continued efficacy and function of the block is evaluated and adjustments in the infusion made as necessary. This continued follow-up is included in the new code for continuous sciatic nerve block.

Femoral Nerve

The last two nerve block injection codes we will review are specific to the femoral nerve and were added in CPT 2003:

64447 Injection, anesthetic agent; femoral nerve, single

64448 Injection, anesthetic agent; femoral nerve, continuous infusion by catheter (including catheter placement) including daily management for anesthetic agent administration

Code 64447 is reported for a single nerve block injection, while code 64448 is reported for continuous administration of local anesthetic via a catheter for postoperative pain control and/or chemical sympathectomy. Such continuous procedures are used to provide pain relief, a reversible sympathectomy or increased blood supply to the lower extremity for several days. Additionally, this continuous procedure may be used for ischemia of the lower extremity, postsurgical pain relief, and occasionally for reflex sympathetic dystrophy and chronic pain. However, the primary use of this procedure is for postoperative pain control after surgery on the leg and knee, particularly after total knee arthroplasty.

To obtain a better understanding of the femoral nerve blocks, we will take a closer look at the intra-service work associated with codes 64447 and 64448.

Code 64447

Informed consent is obtained preoperatively. In the postanesthesia recovery room or in the operating room prior to general anesthesia, the patient's right groin is prepped with a betadine solution and a 22-gauge, short-bevel 4-cm needle is inserted approximately 1 cm lateral to the femoral artery and 1 cm caudad from the inguinal ligament after

anesthetizing the skin with a small amount of local anesthetic. The proper location of the needle is ascertained with the use of a nerve stimulator, the elicitation of paresthesias, the loss of resistance technique, or with a field block technique. Next, between 15 and 30 ml of local anesthetic is injected carefully and with frequent aspiration to avoid the possibility of intravascular injection. The density and function of the block is then assessed. Onset of block may take 30-40 minutes. Postoperative analgesia typically lasts 12-24 hours.

The complications of a femoral nerve block include possible infection, injury to the femoral artery with hematoma formation, systemic local anesthetic toxicity, and nerve injury. Persistent quadriceps weakness may suggest neural injury. Fortunately, these complications are rare.

Code 64448

Informed consent is obtained preoperatively. In the postanesthesia recovery room or in the operating room prior to general anesthesia, the patient's right groin is prepped with a betadine solution and a 22-gauge, short-bevel 10-cm insulated needle is inserted into an 18-gauge long plastic cannula. The femoral nerve is located approximately 1 cm lateral to the femoral artery and 1 cm caudad from the inguinal ligament after anesthetizing the skin with a small amount of local anesthetic. The proper location of the needle is ascertained with the use of a nerve stimulator or with the elicitation of paresthesias, or both. The plastic cannula is then advanced over the needle into the 'sheath' of the femoral nerve. Next, between 20 and 30 ml of local anesthetic is injected carefully through the cannula and with frequent aspiration to avoid the possibility of intravascular injection. A 20-gauge epidural catheter is threaded through the cannula and the cannula is removed. The catheter is sutured in place and sterilely dressed. Local anesthetic is then infused.

The complications of a femoral nerve block include possible infection; injury to the femoral artery with hematoma formation; systemic local anesthetic toxicity; and nerve injury from direct trauma, intraneural injection, or compressiveischemic injury. Persistent quadriceps weakness may suggest neural injury. Fortunately, these complications are rare.

Over the next several days, the continued efficacy and function of the block is evaluated and adjustments in the infusion made as necessary. This continued follow-up is not included in the new code for continuous femoral nerve block.

It is important to note the cross-reference following codes 64416, 64446, and 64448, instructing the user not to report code 01996, Daily hospital management of epidural or subarachnoid continuous drug administration, in addition to these services, as daily management of anesthetic agent administration is included in the newly established continuous block codes. The new continuous block codes (64416, 64446, and 64448), have a 10-day global period and include services provided for daily management of continuous drug administration to the brachial plexus, sciatic nerve, and femoral nerve for postoperative pain and control and/or chemical sympathectomy.

Remember to always recognize and apply the guidelines and appropriate uses of the nerve block injection codes to your coding practice to ensure proper coding as well as updating your system to capture the changes. 