

Neurovascular Interventional Procedures

PROCEDURE :

As technology has progressed and neurointerventionalists (endovascular physicians with specialized training in neuro-oriented procedures) have developed new procedures and skills, so has the coding. The procedures commonly performed in this subspecialty have been merged into this new section of the book for quick reference. These procedures will be described in this section as well as in the appropriate subsections of the book. The procedures in this new section include the endovascular procedures only. Refer to the spine intervention sections for percutaneous needle directed spine intervention. These endovascular procedures include carotid and vertebral stenting, the new intracranial angioplasty, stenting and vasospasm therapy codes, embolization procedures, thrombolysis, papaverine infusion and arterial thrombectomy.

CLINICAL INDICATIONS :

Loss of consciousness, seizure and stroke. Atherosclerotic or fibromuscular vascular stenotic disease, vasospasm and subarachnoid hemorrhage caused by aneurysms or bleeding, arteriovenous malformations and thrombosis or embolism of intracranial vessels.

CODES :

PROCEDURE DESCRIPTION	PROCEDURE CODE	S & I CODE
Primary percutaneous arterial thrombectomy, initial vessel	37184	Included
Primary percutaneous arterial thrombectomy, each additional vessel	☆ 37185	Included
Secondary percutaneous arterial thrombectomy	☆ 37186	Included
Intracranial thrombolysis by intravenous infusion	37195	Included
Infusion for thrombolysis (catheter directed)	37201	75896
Infusion of non-thrombolytic agent (i.e., papaverine)	37202	75896
Percutaneous stent placement, initial vessel (subclavian)	37205	75960
Percutaneous stent placement, each additional vessel (subclavian)	☆ 37206	75960-59
Open stent placement, initial vessel (subclavian)	37207	75960
Open stent placement, each additional vessel (subclavian)	☆ 37208	75960-59
Carotid bifurcation stent placement, with distal embolic protection	◆37215	Included
Carotid bifurcation stent placement, without distal embolic protection	◆37216	Included
Intrathoracic common carotid or extracranial vertebral artery stent placement, initial	◆0075T	Included

Intrathoracic common carotid or extracranial vertebral artery stent placement, each additional	☆♦0076T	Included
Carotid test occlusion	61623	Included
Embolization, central nervous system (spinal or intracranial)	♦61624	75894
Embolization, extracranial (head and neck)	61626	75894
Follow-up angiography, post embolization		75898
Intracranial angioplasty, percutaneous	♦61630	Included
Intracranial stent placement, percutaneous	♦61635	Included
Intracranial balloon angioplasty for vasospasm, initial vessel	♦61640	Included
Intracranial balloon angioplasty for vasospasm, each additional vessel in the same vascular family	☆♦61641	Included
Intracranial balloon angioplasty for vasospasm, initial vessel of a separate vascular family	☆♦61642	Included

☆Add-on Code

♦Inpatient Only Procedure

Note: Codes 61630, 61635, 61640, 61641 and 61642 are non-reportable under OPPs at the time of this printing.



CODING INSTRUCTIONS:

1. Do use code 61630 for intracranial angioplasty for treatment of stenosis or occlusion (unrelated to vasospasm).
2. Code 61630 includes catheter placement, imaging before, during and after the angioplasty, guiding and sizing angiography of the vascular family treated.
3. Codes 61630 and 61635 are intended for treatment of atherosclerotic lesions. Codes 61640, 61641 and 61642 are intended for treatment of vasospasm.
4. Do use code 61635 for intracranial stent placement. This includes any associated angioplasty, unless the angioplasty is performed in a separate vessel.
5. Codes 61630 and 61635 include all imaging of the vascular family treated with balloon or stent.
6. **Do not** code an angioplasty (61630) if performed in the same target vessel as a vessel treated with a stent (61635). These codes are bundled.
7. All the new intracranial codes are inpatient only procedures for Medicare patients. As of January 1, 2006, these codes are non-covered B-status indicator codes due to investigational status. This will hopefully change soon. Please monitor CMS and ZHealth Publishing websites for updates.

8. Do code for any diagnostic angiography unrelated to intracranial angioplasty and stenting (unaffected vascular families) and their catheter placements.
9. Do code complete angiography if done and decision is made to not perform angioplasty or stenting based on the study.
10. Do code 61640 for the initial vessel treated by balloon angioplasty for vasospasm.
11. Do code 61641 for each additional branch of the same vascular family treated with balloon angioplasty for vasospasm. Consider four separate vessels for treatment: the right internal carotid distribution, left internal carotid distribution, right vertebral and left vertebral distributions.
12. Do code 61642 for vasospasm angioplasty treatment in additional vascular families. If there are additional separate branch vessels treated in the additional vascular family, use 61642 again.
13. Codes 61641 and 61642 are add-on codes.
14. Do code for imaging for vasospasm angioplasty prior to the study if necessary to determine course of action.
15. **Do not** code for imaging related to guidance, intraprocedural work or follow-up when vasospasm angioplasty is performed.
16. If embolectomy or thrombectomy of an intracranial artery is performed with a Merci retrieval device, code 37184, 37185 or 37186 as indicated.
17. If papaverine is infused for treatment of vasospasm by catheter directed technique prior to balloon angioplasty, use codes 37202 and 75896 per vascular family treated.
18. Follow-up angiography 75898 may be used with infusion and embolotherapy codes.
19. If papaverine infusion and vasospasm balloon therapy is performed, code for both but **do not** code for catheter placement on the vessels treated with vasospasm balloon angioplasty.
20. Do code catheter placements for papaverine infusion, but delete any selective catheter codes in vessels subsequently treated with vasospasm angioplasty balloons.
21. Do code 37201 and 75896 for catheter directed intracranial thrombolysis. **Do not** use code 37195, as this is used when thrombolytic agent is given from an intravenous infusion (i.e., in the emergency room by the nurse).
22. Do code 37205-37208 for percutaneous or open stent placements in the right brachiocephalic, right subclavian or left subclavian arteries. **Do not** use these codes for carotid, vertebral, coronary or intracranial stents.
23. Do code 75960 with codes 37205-37208. Do code all catheter placements and diagnostic imaging with these stent codes. The carotid, vertebral and intracranial codes bundle catheter placement,

diagnostic imaging and follow-up angiography of the treated vessel.

24. Do code Category III codes 0075T and 0076T for stenting of common carotid or vertebral arteries. These codes include catheter placement, all imaging of the target vessel and cerebral runoff, as well as any pre or post stent placement angioplasty.
25. Do code 61623 for carotid test occlusion. This code includes catheter placement, imaging and follow-up of the target vessel. It also includes physiologic monitoring of patients' symptoms.
26. Do code 61624 and 61626 for permanent embolization for intracranial/intraspinal lesions and extracranial head and neck lesions respectively. These codes do not bundle catheter placement, diagnostic imaging and post-embolization images, all of which may be billed separately.
27. **Do not** code intracranial stent placement code 61635 for Neuroform stent placement. The Neuroform stent is placed as a lattice-work across a wide-mouthed aneurysm to allow trapping of the coils during embolization. This stent placement is considered to be an integral part of the embolization procedure and is not separately billable.

EXAMPLE(S):

1) *Seventy-eight year old with giant (2 cm) right aneurysm on recent angiogram. From a transfemoral approach, a sheath is placed followed by guiding catheter placement into the right common carotid artery. 8,000 units heparin is administered. The patient is monitored by a neurologist. An occlusion balloon is placed over a wire into the internal carotid and inflated. The patient tolerates this vascular occlusion twenty minutes without evidence of stroke or brain ischemia. The balloon is deflated and removed. This is a successful balloon test occlusion (61623; this bundles catheter placements, imaging, monitoring and test occlusion). Decision is made prior to this procedure that if successful, a permanent embolization will be performed. This is performed by placing a number of coils in a nest configuration to incite thrombosis (61624, 75894). Follow-up angiography (75898) shows complete occlusion. The patient tolerates the procedure well.*

Note: Since catheter placement is bundled into the initial test occlusion, do not bill the catheter placement for the permanent occlusion, as they are in the same vessel.

2) *Thirty-seven year old with right frontal meningioma on CT scan. Via a transfemoral approach, arch (75650), bilateral cervical carotid (75680), bilateral internal carotid injections with cerebral imaging (75671) and bilateral external carotid catheter placement with imaging (75662) shows supply to the meningioma only from the right external carotid injection. The arch exam shows bovine variant anatomy. (Catheter placements are 36217-RT external carotid, 36218-RT x 3, right internal carotid, left internal carotid, left external carotid.) The microcatheter is then advanced into the internal maxillary artery where road map (no code) shows the middle meningeal artery. This is selected, injected and imaged showing a hypervascular mass in the right frontal region. No collaterals to the cerebral distribution are seen - only to the tumor (75774, catheter placement remains 36217 and is not changed). Particle embolization is performed (61624, 75894) with follow-up angiography showing complete occlusion (75898).*

3) *Eighty-seven year old with acute, unrelenting right nasal bleed. From a transfemoral approach, a pigtail catheter is placed for arch exam (75650). This is replaced with a Simmons 2 catheter which is reformed down the contralateral leg (no code for reforming catheters) and is placed into the right common carotid artery.*

Unilateral cervical carotid angiogram shows 70% ICA stenosis and 40% ECA stenosis proximally (75676). The external carotid is carefully crossed with a microcatheter and selective angiography is performed (75660). The catheter is advanced into the internal maxillary artery and imaging is performed showing hypervascularity in the nasal region (75774). The abnormal bleeding vessel is seen on this right sided injection. This is embolized with larger PVA particles (61626, 75894) with cessation of flow on angiographic follow-up imaging (75898). Catheter placement is third order selective (36217).

4) Seventy-five old with TIA's and MRI suggesting right ICA stenosis and right M-1 segment of the middle cerebral artery stenosis. From a transfemoral approach, a catheter is placed into the right carotid and imaging is performed. Both of these lesions are seen and are critical in nature. Decision to stent the carotid and balloon the MCA is made. (Temporary pacemaker is placed in case of bradycardia - not coded, as preventative procedure only.) Using distal embolic protection, preliminary ballooning of the ICA stenosis, followed by stent deployment results in a widely patent vessel (37215). Microwire and balloon are then placed across the MCA stenosis and inflated (61630). Follow-up shows a 70% residual stenosis with acute thrombotic complication with distal occlusion. A Merci retrieval device is used to extract the clot (37186) followed by microstent placement in the area of residual stenosis (61635; delete 61630, as balloon is bundled into intracerebral stent placement). Ten minutes delayed films show excellent results.

Note: All catheter placements, imaging, ballooning and follow-up are bundled in the stent placement codes. The thrombectomy is separately billable.

5) Twenty-three year old unconscious man with evidence of subarachnoid hemorrhage on lumbar puncture. Via a translumbar approach, selective bilateral internal carotid and bilateral vertebral artery injections with imaging of the cerebral vasculature is performed (normal anatomy; 36217-RT, 36218, 36216-59LT, 36216-59LT, 75671, 75685 x 2). Anterior communicating artery aneurysm is seen with some spasm. This is embolized with several GDC coils successfully (61624, 75894). Follow-up angiography shows minimal vasospasm (75898).

6) Same patient as case 5. After becoming much more alert and talking, the patient was unarousable the next morning. The patient is emergently brought to CT scan that shows no new bleeding. He then has emergent bilateral selective vertebral and bilateral selective internal carotid cerebral angiography (36217-RT, 36218, 36216-59LT, 36216-59LT, 75671, 75685 x 2) showing severe vasospasm in both the right anterior cerebral, callosal marginal and pericallosal arteries as well as the left anterior cerebral and middle cerebral arteries. All five of these vessels are treated with vasospasm balloon angioplasty (61640, 61641, 61641 are used for billing the right ACA, pericallosal and callosal marginal arteries. 61642, 61642 are used for the left anterior and middle cerebral arteries. Delete codes 36218 and 36216-59LT for the original catheter placement codes in the internal carotid arteries, as catheter placement is bundled into the vasospasm balloon treatment codes.) Follow-up angiography bilaterally shows improved flow (no code, as follow-up angiography bundled in vasospasm angioplasty codes).

7) Same patient as above, two days later becomes somnolent. Angiography is performed again with catheter placement in the right and left internal carotid arteries with cerebral imaging (75671, 36217-RT, 36216-59LT). Global mild vasospasm is seen on the right side only. Microcatheter is advanced and papaverine infusion is started (37202-59, 75896). This is continued 40 minutes. Follow-up angiography (75898) shows improvement. The patient awakens on the table.

8) Patient with bilateral proximal vertebral and left common carotid origin stenosis on recent angiogram,

presents for multiple stenting. Preliminary angiography confirms these lesions (no code). Stents are then placed successfully in all three vessels (0075T, 0076T, 0076T) without complication. (All preliminary angiography, catheter placements, stent deployment and follow-up are bundled. These are still status indicator C, inpatient only procedures.)

9) Patient presents to E.R. with stroke symptoms for one hour. There is no access to a neurointerventionalist for six hours. CT scan shows no hemorrhage. Intravenous infusion of 100 mg TPA is given by the nurse under physician guidance (37195).

10) Patient presents to E.R. with stroke symptoms for one hour. The "stroke center team" is called on site. CT scan shows no hemorrhage. From a transfemoral approach, arch (75650) bilateral cervical carotid (75680) and bilateral cerebral angiography is performed (75671). Catheter placement is in the right common carotid (36216-59RT) and eventually the left M-1 and M-2 segments of the middle cerebral artery (36217-LT, 36218-LT). Clot is seen in the left MCA. Arch, cervical and right cerebral vessels are normal. A Merci retrieval catheter is advanced into the MCA and thrombectomy is performed (37184). The catheter is advanced into the mid M-1 segment for further thrombectomy (37185). Intraprocedural thrombolysis is injected but did not resolve all clot. For this reason, a microinfusion catheter is utilized for 60 minutes additional thrombolysis (37201, 75896). Follow-up shows resolution of thrombus (75898). The patient's symptoms resolved on the table.

11) Patient with stenosis right proximal MCA on MRI study. From a transfemoral approach, a catheter is placed for arch, then selective catheter placement into the right and left common carotid and both vertebral arteries with imaging of the arch (75650), both cervical carotids (75680), both cerebral carotids (75671) and both vertebral, cerebral and cervical segments (75685-LT, 75685-RT). Catheter placements are 36217-RT, 36218-RT, 36216-59LT and 36216-59LT. Filming shows all vessels to be normal. No stent was placed. Bill for the angiography and catheter placements.

12) Same patient as case 11, but the MCA stenosis is seen when unilateral imaging is performed. This is stented with a 1.5 mm balloon expandable stent without complication. Follow-up imaging at 10 minutes shows continued patency (61635).

Note: All catheter placements, imaging, ballooning, stenting and follow-up are included in code 61635.

13) Twenty-eight year old with recent subarachnoid hemorrhage, now with decreasing mental status. Via right femoral puncture, a catheter is advanced into the right and left internal carotid and both vertebral arteries (37217-RT, 36216-59LT; catheter placements in the carotid arteries are bundled into the vasospasm angioplasty). Diagnostic angiography is performed (75685-LT, 75685-RT; imaging of the carotid arteries is bundled into the vasospasm angioplasty). Vasospasm is seen in all four vessels. Papaverine is infused in all four vessels for 20 minutes each (37202 x 4, 75896 x 4). Follow-up angiography in all four vessels (75898 x 4) shows vertebral flow to be improved but intracranial angioplasty for vasospasm is required in both the right and left supraclinoid internal carotid arteries and additionally of the right middle cerebral artery M-2 and M-3 segments (61640-RT, 61642-LT, 61641-RT, 61641-RT). This is performed without complication. Follow-up angiography at 10 and 20 minutes shows excellent perfusion of distal carotid and cerebral vasculature (bundled).