

Interventional Radiology Coding Case Studies

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Carotid Angiogram, Embolization, Angioplasty & Stent Placement

INDICATION: The patient is an 82-year-old male status post recent right carotid endarterectomy with carotid blow-out by recent CTA examination.

PROCEDURAL STEPS

1. Percutaneous access of right common femoral artery.
2. Selective catheterization of the brachiocephalic and right common carotid artery with arteriogram.
3. Subselective catheterization of the right external carotid artery with arteriogram.
4. Transcatheter embolization of the proximal right external carotid artery.
5. Subselective catheterization of the right internal carotid artery with carotid arteriogram.
6. Transcatheter stent graft deployment across the right internal carotid artery with angioplasty.
7. Post angioplasty right common carotid artery arteriogram.
8. Repeat stent graft placement across the right common and internal carotid arteries with angioplasty.
9. Follow up common carotid arteriogram.

ANESTHESIA: Conscious sedation using fentanyl. Local anesthesia using buffered 1% lidocaine.

TOTAL CONTRAST: 90 mL Isovue 300.

MEDICATIONS: Heparin 2000 units.

FLUOROSCOPY TIME: 24.7 minutes

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PROCEDURE: After consent was obtained, the patient was placed supine on the angiography table. The right groin was sterilely prepped and draped in sterile fashion. The skin and underlying soft tissues were locally anesthetized with buffered 1% lidocaine. A small skin nick was then made. Using a Seldinger technique, the right common femoral artery was percutaneously accessed followed by placement of a 5-French sheath.

Over a guidewire, a 5-French H1 catheter was passed into the aortic arch and was used to engage the origin of the brachiocephalic artery. However, because of prominent arch tortuosity, the catheter was exchanged for a Simmons 2 catheter. This was formed in the descending thoracic aorta then selectively placed in the brachiocephalic artery with the guidewire passed distally. Over this, the catheter was advanced into the common carotid artery. Using a series of exchanges, a 7-French BriteTip sheath was passed into the mid to distal right common carotid artery. Common carotid arteriogram was then obtained. Using a coaxial setup, a microcatheter was subselectively placed in the proximal external carotid artery. This was confirmed by injection of contrast for an external carotid arteriogram.

Transcatheter embolization of the proximal external carotid artery was then carried out under fluoroscopic visualization. The catheter system was then withdrawn. A 0.035-inch guidewire was then selectively placed in the distal right internal carotid artery. Using a digital roadmap technique, over the wire, a 6 x 50 mm Viabond stent graft was passed and positioned across the origin of the right internal carotid artery. This was followed by serial balloon angioplasty initially with 5 and 6 mm balloon catheters. Follow up hand injection of contrast of the common carotid artery showed somewhat improved appearance although with persistent leaking into the pseudoaneurysm. Subsequently, a second Viabond (5 x 150 mm) was passed and deployed from the distal common carotid into the proximal internal carotid artery. This was followed by serial balloon angioplasty with a 6 mm balloon catheter.

Follow up injection was obtained showing brisk flow into the right internal carotid artery without residual filling of the pseudoaneurysm or of the external carotid artery. At that point, the guidewire and sheath were removed. Over the wire, the sheath was exchanged for a short 7-French sheath over through which a hemostasis device was applied (Angio-Seal). Once hemostasis was obtained, a sterile bandage was then applied to the site. The patient tolerated the procedure well with no immediate complications. He was then returned to the floor for further care.

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FINDINGS: Common carotid arteriogram shows the carotid bulb to be widely patent. There is a moderate origin stenosis seen of the external carotid artery. Within 1 cm of its takeoff, there is a prominent pseudoaneurysm projecting laterally off the internal carotid artery without free extravasation of contrast demonstrated. Distally, the visualized internal carotid artery appears unremarkable. Series of images obtained during the procedure showed gradual embolization of the external carotid artery with subsequent successful stent graft placement from the distal common carotid artery into the proximal internal carotid artery and successful angiographic occlusion of the pseudoaneurysm and external carotid artery. Brisk flow throughout the internal carotid artery is demonstrated.

CONCLUSION: Prominent pseudoaneurysm arising off the proximal right internal carotid artery without free extravasation demonstrated. Status post technically successful transcatheter embolization of the right external carotid artery with subsequent stent grafting of the distal common and proximal internal carotid artery as described with angiographic exclusion of the pseudoaneurysm.

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Interventional Radiology Coding Case Studies CPT Codes

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Carotid Angiogram, Embolization, Angioplasty & Stent Placement

Procedure Codes:

- 37216 Stent placement proximal internal carotid (cervical) , RS&I w/o DEP
- 61626 Embolization external carotid artery
- 75894 Embolization external carotid artery, RS&I
- Q9967 x90 LOCM, 300-399 mg/ml iodine concentration, per ml
- J1644 x2 Injection, heparin sodium, per 1000 units

Diagnosis Codes:

- I72.0 Pseudoaneurysm

Comments:

- Code 37216 is assigned for the stent placed into the proximal internal carotid artery. There is no mention of distal embolic protection being utilized, therefore code 37215 cannot be assigned. It would be prudent however, to query the physician and request an addendum if DEP was utilized, as code 37216 may not be covered. Angioplasty is bundled with stent placement.
- Ipsilateral catheterization and diagnostic imaging is bundled with code 37216 for the stent placement.
- Code 61626 and 75894 are assigned for embolization of the proximal external carotid artery. The catheterization and imaging work is already bundled with the stent placement codes, so they are not assigned.
- Moderate sedation time as well as required documentation for moderate sedation is missing from the report.
- *Drugs and supplies are billed by the facility performing the procedure and should not be assigned for professional fee coding.*

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Applicable Coding Rules:

- **Extracranial vessels** are those that arise outside of the skull and supply the brain. The extracranial vessels include the common carotids, external carotids, and the vertebral and internal carotid portions *before they enter the skull*. **Intracranial vessels** arise from within the skull and supply the brain. The **cervical carotid artery** refers to the extracranial portion of the carotid artery near the carotid bifurcation in the neck.

Cervical Carotid Stent Placement

Catheterization Codes

- All ipsilateral catheterizations are bundled into the codes for intracranial and extracranial stent placement (cervical and cerebral).
- Catheterization codes are only assigned for catheterizations on the side of the head/neck opposite of the side of the stent placement or in separate vascular beds outside of the head/neck vessels.

Diagnostic Angiography

- Ipsilateral diagnostic angiography is bundled into the codes for intracranial and extracranial stent placement. Initial diagnostic angiography may only be reported for imaging performed of the head/neck vessels opposite of the side of stent placement.

Cervical Carotid Stent Placement (37215 – 37216)

Cervical carotid stent placement is reported with codes 37215 and 37216. The **cervical carotid artery** refers to the extracranial portion of the carotid artery near the carotid bifurcation in the neck.

- Code 37215 describes a cervical carotid stent placement using a distal embolic protection device (DEP) and code 37216 describes cervical carotid stent placement without a DEP.
 - ❖ A DEP is a filter, screen or basket that is designed to capture any embolic debris that may break loose during the procedure. It is important to note that the DEP will be placed in a vessel beyond the one being treated. Placement of the DEP does not determine whether the procedure is extracranial vs. intracranial. The location of the stent determines the correct code selection.

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Applicable Coding Rules (continued):

- Cervical carotid stent placement as described by these codes typically is performed at or near the carotid bifurcation. A small portion of the internal carotid artery beyond the carotid bifurcation is located in the neck, prior to entering the skull. This portion of the internal carotid artery may be referred to as the proximal internal carotid artery. A stent placed in the “distal internal carotid” may indicate that an intracranial stent was placed (e.g., cervical segment of the internal carotid artery versus the intracranial portion). Be sure to pay close attention to the exact location to ensure correct code assignment.
 - ❖ For stent placement in the intracranial portion of the carotid artery, see code 61635.
 - ❖ For stent placement in the intrathoracic portion of the carotid artery, see codes 37217-37218.
- Stent codes 37215-37216 include angioplasty when performed in the same vessel. Angioplasty is not coded in addition to these stent codes unless an angioplasty is performed in a separate and distinct vessel from the stent placement.
- **Single vs. Multiple Vessels.** Stent placement codes are assigned one time per vessel (lesion) treated.
- **Multiple Stents.** When there are multiple stents placed in the same vessel, only one stent placement is reported.
- **Multiple Lesions.** When there are multiple lesions treated within the same vessel, only one stent placement code is reported for that vessel.

Stent RS&I Codes

- **Bundled Components.** All RS&I work is bundled into the surgical code for stent placement. This work includes the following services: contrast injections, angiography, roadmapping, and fluoroscopic guidance for the intervention, vessel measurement, and completion angiography.

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Applicable Coding Rules (continued):

Embolization Codes (61624 & 61626)

- Code 61624 is reported for intracranial and spinal cord embolizations (central nervous system) including occlusion of intracranial aneurysms and arteriovenous malformations (AVMs).
- Code 61626 is reported for extracranial and brachiocephalic branch embolizations (non-central nervous system). Code 61626 is commonly used for treatment of epistaxis via internal maxillary or sphenopalatine (nosebleed).
- Codes 61624 and 61626 describe permanent occlusion or embolization. When temporary balloon occlusion is performed, see code 61623.
- The Neuroform EZ® stent system is placed to provide latticework for deployment of embolization coils to treat wide-neck intracranial aneurysms. When the stent system is placed at the same time of the embolization, the stent code is not reported in addition to the embolization code.
 - ❖ For staged procedures, when the Neuroform EZ® stent system is placed in a separate session prior to the embolization procedure, placement of the Neuroform EZ® is assigned code 61635.
- **Multiple Vessels.** Embolization codes are not assigned per vessel, rather they are assigned once per operative field.
- **Operative field.** Only one embolization code should be reported for each operative field. An operative field refers to the area immediately surrounding and directly involved in a treatment/procedure. Embolization procedures performed at a single setting and including multiple surgical fields such as multiple aneurysms may be reported separately.
 - ❖ The following are considered one operative field: multiple vessels feeding a bladder tumor, multiple vessels in the same extremity, multiple vessels for endoleak, multiple hemodialysis side branches, bilateral uterine arteries.
 - ❖ The following are considered two or more operative fields: bilateral organs, **bilateral arteriovenous malformations**, bilateral testicular veins (varicocele), bilateral ovarian veins (pelvic congestion), **intracranial aneurysms (two or more)**, multiple bleeds (spleen, pelvis).

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Applicable Coding Rules (continued):

Embolization RS&I Codes

- Code 75894 is reported as the transcatheter RS&I code for 61624 and 61626, which includes the following services: contrast injections, angiography, roadmapping, and fluoroscopic guidance for the intervention, vessel measurement, and completion angiography.
- Code 75898 is assigned for completion angiography to check results of the embolization procedure (when documented). This code is assigned once per operative field, with the exception of central nervous system embolizations, code 61624. It may be reported for each completion angiogram in the vessels of the central nervous system.

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