

Interventional Radiology Coding Case Studies

Prepared by
Stacie L. Buck, RHIA, CCS-P, RCC, CIRCC, AAPC Fellow
President & Senior Consultant

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Cerebral & Spinal Angiography

CLINICAL HISTORY: The patient is a 56-year-old man who developed progressive weakness in the lower extremities. Early this morning he became paraplegic and incontinent. MRI of the spine revealed the presence of enlargement with edema of the spinal cord with multiple flow-voids. Therefore, the possibility was raised of a spinal arteriovenous fistula. Cerebral and spinal angiography was therefore requested to evaluate these findings.

Anesthesia: General anesthesia.

CONTRAST: Approximately 191 mL

Fluoroscopy Time: A total of 29.2 minutes of fluoroscopic x-ray time were utilized to perform this procedure.

PROCEDURES

Cerebral angiography: RIGHT COMMON CAROTID ARTERY EXTRACRANIAL PORTION IN AP VIEW ONLY. RIGHT INTERNAL CAROTID ARTERY INTRACRANIAL PORTION BOTH PA AND LATERAL VIEWS. RIGHT EXTERNAL CAROTID ARTERY AP AND LATERAL VIEWS. LEFT COMMON CAROTID ARTERY EXTRACRANIAL PORTION AP VIEW ONLY. LEFT INTERNAL CAROTID ARTERY INTRACRANIAL PORTION BOTH PA AND LATERAL VIEWS. LEFT EXTERNAL CAROTID ARTERY AP AND LATERAL VIEWS. LEFT VERTEBRAL ARTERY, CERVICAL AND INTRACRANIAL PORTION BOTH PA AND LATERAL VIEWS. RIGHT VERTEBRAL ARTERY, CERVICAL AND INTRACRANIAL PORTION BOTH PA AND LATERAL VIEWS.

Spinal angiography: RIGHT AND LEFT SUPREME INTERCOSTAL. RIGHT AND LEFT T4. RIGHT AND LEFT T5. RIGHT AND LEFT T6. RIGHT AND LEFT T7. RIGHT AND LEFT T8. RIGHT AND LEFT T9. RIGHT AND LEFT T10. RIGHT AND LEFT T11. RIGHT AND LEFT T12. RIGHT AND LEFT L1. RIGHT AND LEFT L2. RIGHT AND LEFT L3.

INFORMED CONSENT: Informed consent was obtained from the patient. Following discussion of the risks, benefits and alternatives for this procedure with the patient, informed written and verbal consent was obtained and placed in the patient's chart. The risks discussed included, but were not limited to, stroke, hemorrhage, death, allergic reaction or toxicity, groin bleeding complication, infection, need for emergent surgery, vessel occlusion or injury, as well as other unforeseeable complications. The patient appeared to fully understand the procedure. All questions were answered and the patient signed the informed consent that was placed in the chart. The patient asked us to proceed as planned.

DISCUSSION: The right groin was prepped and draped in a sterile fashion utilizing approximately 10 mL of 1% Lidocaine without epinephrine. The subcutaneous and subcuticular tissues around the right common femoral artery were locally anesthetized. Access was obtained to the right common femoral artery using modified Seldinger technique and a micropuncture set. Upon the return of brisk arterial blood, a 0.035 -inch Bentson Glidewire was inserted and progressed to the abdominal and thoracic aorta under fluoroscopic guidance.

The needle was removed and a 5-French short sheath was inserted and progressed into the right common femoral artery. Inner guidewire and catheter were then removed. The sheath was secured in place with a Tegaderm patch. The sheath was perfused with heparinized saline drip for the entirety of the procedure.

Cerebral Angiography

A 5-French Berenstein catheter in conjunction with a Terumo Glidewire was used to select the right common carotid artery. Injection of contrast at this level demonstrated normal contour of the vessels and origin of the internal carotid artery without evidence of stenosis. The catheter was then advanced into the right internal carotid artery. Injection of contrast in the right internal carotid artery demonstrated normal contour of the intracranial portion of the vessel and origin of the anterior cerebral and middle cerebral artery and its branches. There was also a normal parenchymal and venous phase with this injection.

The 5-French Berenstein catheter in conjunction with the Terumo Glidewire was used to select the right external carotid artery. Injection of contrast at this level demonstrated normal contour of the vessels.

The 5-French Berenstein catheter in conjunction with a Terumo Glidewire was then used to select the left common carotid artery. Injection of contrast at this level in the lateral projection demonstrated normal contour of the vessel and origin of the internal carotid artery without evidence of stenosis. Subsequently the catheter was advanced into the left internal carotid artery. Injection of contrast at this level demonstrated normal contour of the vessel and the origin of the anterior cerebral and middle cerebral artery and their branches. There was also normal parenchymal and venous phase with this injection.

The 5-French Berenstein catheter in conjunction with the Terumo Glidewire was used to select the left external carotid artery. Injection of contrast at this level demonstrated normal contour of the vessels.

The 5-French Berenstein catheter in conjunction with the Terumo Glidewire was used to select the left vertebral artery. Injection of contrast at this level demonstrated normal contour of the vessels.

The 5-French Berenstein catheter in conjunction with the Terumo Glidewire was used to select the right vertebral artery. Injection of contrast at this level demonstrated normal contour of the vessels.

Spinal Angiography

A 5-French catheter in conjunction with a Terumo Glidewire was used to select the right and left supreme intercostal. Injection of contrast at this level demonstrated normal contour of the vessels.

A 5-French catheter in conjunction with a Terumo Glidewire was used to select the right and left T4 intercostal artery. Injection of contrast at this level demonstrated normal contour of the vessels.

A 5-French catheter in conjunction with a Terumo Glidewire was used to select the right and left T5 intercostal artery. Injection of contrast at this level demonstrated normal contour of the vessels.

A 5-French catheter in conjunction with a Terumo Glidewire was used to select the right and left T6 intercostal artery. Injection of contrast at this level demonstrated normal contour of the vessels.

A 5-French catheter in conjunction with a Terumo Glidewire was used to select the right and left T7 intercostal artery. Injection of contrast at this level demonstrated normal contour of the vessels.

A 5-French catheter in conjunction with a Terumo Glidewire was used to select the right and left T8 intercostal artery. Injection of contrast at this level demonstrated normal contour of the vessels.

A 5-French catheter in conjunction with a Terumo Glidewire was used to select the right and left T9 intercostal artery. Injection of contrast at this level demonstrated normal contour of the vessels.

A 5-French catheter in conjunction with a Terumo Glidewire was used to select the right and left T10 intercostal artery. Injection of contrast at this level demonstrated normal contour of the vessels.

A 5-French catheter in conjunction with a Terumo Glidewire was used to select the right and left T11 intercostal artery. Injection of contrast at this level demonstrated normal contour of the vessels.

A 5-French catheter in conjunction with a Terumo Glidewire was used to select the right and left T12 intercostal artery. Injection of contrast at this level demonstrated normal contour of the vessels.

A 5-French catheter in conjunction with a Terumo Glidewire was used to select the right and left L1 lumbar artery. Injection of contrast at this level demonstrated normal contour of the vessels.

A 5-French catheter in conjunction with a Terumo Glidewire was used to select the right and left L2 lumbar artery. Injection of contrast at this level demonstrated normal contour of the vessels.

A 5-French catheter in conjunction with a Terumo Glidewire was used to select the right and left L3 lumbar artery. Injection of contrast at this level demonstrated normal contour of the vessels.

At the end of the procedure the catheter was withdrawn. Images of the femoral and iliac arteries were obtained from the femoral sheath and demonstrated tortuous and irregular contour of the vessel. The sheath was then withdrawn. Hemostasis was achieved by manual compression and a Syvek patch. The patient tolerated the procedure very well without complications and was transported with routine orders to the recovery unit. There was no hematoma.

IMPRESSION: There was no evidence of an arteriovenous fistula or arteriovenous malformation in all vessels studied. The findings were discussed with the team taking care of the patient.

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Cerebral & Spinal Angiography

Procedure Codes:

- 36224-50 Bilateral internal carotid angiograms
- 36227-50 Bilateral external carotid angiograms
- 36226-50 Bilateral vertebral angiograms
- 36218 x2 Catheterization of right and left supreme intercostals
- 36215 x18 Catheterization of bilateral T4, T5, T6, T7, T8, T9, T10, T11, T12
- 36245 x6 Catheterization of bilateral L1, L2, L3
- 75705 x26 Thoracic & lumbar spinal angiograms, Right and left supreme intercostal angiograms* (*Note there are differences of opinion on coding for the supreme intercostals 75774 x2 instead of 75705 x2*)
- Q9967 x191 LOCM 300-399 MG/ML

Diagnosis Codes:

- G95.19 Spinal Cord Edema
- G82.20 Paraplegia
- R32 Urinary Incontinence

Comments:

- The catheter was initially placed in each of the common carotid arteries for imaging; however the catheter was ultimately advanced into the internal carotids for imaging. The “lesser” order studies (36222, 36223) are bundled with 36224.
- The catheter was selectively placed in each of the external carotids for imaging, allowing 36227 to be reported for each side.
- The catheter was selectively placed in each vertebral artery for imaging as described by code 36226.
- Code 36218 is assigned twice for catheterization of the right and left supreme intercostals. Add-on code 36218 is reported for catheterization of vascular beds in the head/neck and/or shoulder girdle when performed in the same session as vertebral angiography.
- Code 36215 is assigned 18 times; once for each thoracic spinal artery catheterized.
- Code 36245 is assigned 6 times; once for each lumbar artery catheterized.

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Comments (continued):

- Code 75705 is assigned 26 times; once for each thoracic spinal artery imaged, once for each lumbar artery imaged and once for each supreme intercostal imaged. Imaging of the intercostal artery for evaluation of a spinal arteriovenous malformation is reported with code 75705. *(Note there are differences of opinion on coding for the supreme intercostals 75774 x2 instead of 75705 x2)*
- Supplies are billed by the facility performing the procedure and should not be assigned for professional fee coding.

Applicable Coding Rules:

Head & Neck Angiography

- The following components are included in codes 36221-36228: accessing the vessel, placement of the catheter(s), contrast injections, fluoroscopy, radiological supervision & interpretation and closure of arteriotomy.
- All codes describe unilateral catheterization and imaging except 36221, therefore each code (36222-36226) may be reported once per side.
 - ❖ Code 36221 states “unilateral or bilateral”.
 - ❖ To report bilateral imaging utilize modifier -50, unless otherwise directed by your payer.
- There are two-add on codes that are utilized to describe angiography of the vessels in the head.
 - ❖ Add on code +36227 is assigned for selective catheterization and imaging of the external carotid artery and/or its branches. It may be used in conjunction with codes 36222-36224. This code is permitted to be assigned a maximum of one time per side regardless of the number of branches selected for imaging.
 - ❖ Add on code +36228 is assigned for selective catheterization and imaging of additional intracranial branches of either the internal carotid artery or the vertebral artery. It may be used in conjunction with codes 36223-36226. This code includes any additional second or third order selective catheter placement in the same primary branch of the internal carotid, vertebral or basilar artery. This code is permitted to be assigned a maximum of two times per side regardless of the number of branches selected for imaging.

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- Codes are built on a progressive hierarchy with less intensive services bundled with the most intensive services when performed on the same side.
 - ❖ Code 36221 is included with codes 36222-36226.
 - ❖ Code 36222 is included with 36223 and code 36223 is included with code 36224. Code 36225 is included with code 36226.
 - ❖ In the event a “lesser” code is reported for the contralateral side, modifier -59 should be appended to the lesser code.
- Add on codes +36218 & +75774 are not to be used for diagnostic angiography of extracranial or intracranial cervicocerebral vessels, but may be utilized to describe catheterization of upper extremities and other vascular beds (thyrocervical trunk and branches, costocervical trunk and branches, etc.) of the neck/shoulder girdle when performed at the same time as vertebral angiography. Modifier -59 is required on +75774 when assigned with 36225 & 36226 for vertebral angiography.

Spinal Catheterization & Angiography Coding

- Each spinal artery is its own vascular family as each arises directly off of the aorta. Catheterization of each thoracic spinal artery is reported with codes 36215-36217 and catheterization of each lumbar artery is reported with codes 36245-36247 as applicable.
- Selective imaging of each spinal artery is reported with code 75705. This may result in code 75705 being reported dozens of times. Code +75774 is not utilized to report imaging of multiple spinal arteries, it would be utilized to report additional imaging of second order or higher branches after 75705 has been assigned.
- Code 75705 describes selective imaging of the spinal arteries. To assign this code the catheter must be placed into the spinal artery for imaging.
 - ❖ Code 75705 is assigned per spinal artery catheterized and imaged.
- Code 75705 may be assigned for selective imaging of an artery arising from the thoracic aorta when imaging is performed to visualize and evaluate spinal structures.
 - ❖ Imaging of the intercostal artery for evaluation of a spinal arteriovenous malformation is reported with code 75705.

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