Interventional Radiology Coding Case Studies

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Week of October 1, 2018

Head & Neck Angiography

CLINICAL HISTORY: Left vertebral artery fistula status post trauma.

VESSELS CATHETERIZED: Left subclavian artery; left vertebral artery; left costocervical artery; left deep cervical artery; left thyrocervical artery; left ascending cervical artery; left common carotid artery; left internal carotid artery: left external carotid artery; right common carotid artery; right internal carotid artery; right external carotid artery; right vertebral artery.

VESSELS IMAGED: Selective angiograms were performed at all selective catheter placements.

PROCEDURE: The right groin was prepped and draped in the usual sterile fashion. The skin and subcutaneous tissues of the right groin were anesthetized utilizing 10 ml of Lidocaine without epinephrine. The right common femoral artery was percutaneously accessed with an 18-gauge needle utilizing a modified Seldinger technique. After the return of bright red blood a short J-wire was inserted through the needle without complication. The needle was subsequently removed over the wire and exchanged for a short 4 French arterial sheath. The sheath was aspirated and flushed with heparinized saline.

Using standard surgical introduction technique, 4 French Berenstein tip catheter was introduced into the descending aorta over a Bentson guidewire and navigated into the aortic arch. Under direct fluoroscopic guidance/digital roadmap guidance, this coaxial system was passed sequentially into the left subclavian artery, left vertebral artery, left costocervical artery, left deep cervical artery, left thyrocervical artery, left ascending cervical artery, left common carotid artery, left internal carotid artery, left external carotid artery, right common carotid artery, right internal carotid artery, right external carotid artery and right vertebral artery.

In each catheter position the guidewire was removed and tip position was fluoroscopically confirmed. In each catheter position biplane arteriography was performed in frontal and lateral projections during injection of an appropriate rate and volume of nonionic contrast.

Under direct fluoroscopic guidance and using digital roadmap technique, a Renegade hi flo microcatheter prepared with a 0.014 inch Syncro 2 microguidewire was passed through the diagnostic catheter into the distal left vertebral artery. Microguidewire was removed. The tip position was fluoroscopically confirmed. Biplane arteriography was performed in multiple projections during injection of an appropriate rate and volume of nonionic contrast.

The catheter and sheath were removed and hemostasis was obtained by manual compression. Sterile occlusive dressing was applied to the arteriotomy site. The patient tolerated the procedure well and the neurological examination remained unchanged. No immediate complication was evident.

INTERPRETATION OF FILMS: Left subclavian arteriography shows wide patency and a normal course of the proximal portion of this vessel. The origin of the left vertebral artery is normal in caliber.

Left vertebral arteriography shows wide patency and a normal course of this vessel through the cervical region. There is an abnormal paravertebral vein filling in the arterial phase at the level of C1 consistent with vertebral arteriovenous fistula. This is better evaluated and further described with microcatheter arteriography. The intracranial left vertebral artery is widely patent and communicates normally with the basilar trunk. There is normal runoff to the right posterior cerebral artery. The left P1 segment is hypoplastic. There is filling of the left occipital artery. No arterial aneurysm is identified. Major dural sinuses and cortical venous structures appear patent.

Left costocervical, left deep cervical, left thyrocervical, and left ascending cervical arteriography demonstrates normal course and caliber of these vessels without arteriovenous visualization.

Left common carotid arteriography demonstrates wide patency of this vessel and its cervical bifurcation. The cervical segment of the left internal carotid artery is normal in caliber. Left internal carotid arteriography demonstrates wide patency of the intracranial segments of this vessel. The left anterior and middle cerebral artery branches are normal in appearance without significant stenosis or major branch vessel occlusion. There is cross-filling to the contralateral anterior and middle cerebral arteries. A large posterior communicating artery gives ancillary supply to the posterior cerebral artery territory. No arterial aneurysm is identified. Arteriovenous transit occurs within the expected time interval. Major dural sinuses and cortical venous structures appear patent.

The left occipital artery is not visualized. Left external carotid arteriography otherwise demonstrates a normal branching pattern without any abnormal arteriovenous visualization.

Right common carotid arteriography demonstrates wide patency of this vessel and its cervical bifurcation. The cervical segment of the right internal carotid artery is normal in caliber.

Right internal carotid arteriography demonstrates wide patency of the intracranial segments of this vessel. The right anterior and middle cerebral artery branches are normal in appearance without

significant stenosis or major branch vessel occlusion. There is cross-filling to the left middle cerebral artery. No arterial aneurysm is identified. Arteriovenous transit occurs within the expected time interval. Major dural sinuses and cortical venous structures appear patent.

Right external carotid arteriography demonstrates a normal branching pattern without any abnormal arteriovenous.

Right vertebral arteriography shows wide patency and a normal course of this vessel through the cervical region. The intracranial right vertebral artery is widely patent and communicates normally with the basilar trunk. The basilar artery is normal in caliber with runoff to the right posterior cerebral artery. No arterial aneurysm is identified. Arteriovenous transit occurs within the expected time interval. Major dural sinuses and cortical venous structures appear patent. .

Distal left vertebral microcatheter arteriography demonstrates fistulization of the distal vertebral artery and a smaller paravertebral vein at the level of C1. The paravertebral vein drains into the paravertebral plexus. There is no associated pseudoaneurysm.

SUMMARY: Arteriovenous fistula between the distal left vertebral artery and a paravertebral vein at the level of C1. Follow-up imaging with CT angiography in 3 months is recommended to assess stability/involution.

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Head & Neck Angiography

Procedure Codes:

- 36226-50 RT & LT Vertebral Angiography
- 36224-50 RT & LT Internal Carotid Angiography
- 36227-50 RT & LT External Carotid Angiography
- 36218 (59) LT Ascending Cervical Angiography
- 36218 (59) LT Deep Cervical Angiography
- 75774 (59) LT Costocervical Angiography
- 75774 (59) LT Deep Cervical Angiography
- 75774 (59) LT Thyrocervical Angiography
- 75774 (59) LT Ascending Cervical Angiography

Diagnosis Codes:

- I67.1 Arteriovenous fistula, brain

Comments:

- Code 36226-50 is assigned for bilateral vertebral imaging. On the left the catheter first was placed into the subclavian for imaging, followed by catheter placement into the left vertebral. The catheterization and imaging from the subclavian is bundled with 36226 for the left. On the right, the catheter was placed directly into the vertebral for imaging.
- Code 36224-50 is assigned for bilateral internal carotid imaging as the catheter was placed into the internal carotids. Right and left common carotid angiography is bundled with the internal carotid imaging.
- Code 36227-50 is assigned for bilateral external carotid imaging as the catheter was placed into the external carotids for imaging.
- Regarding codes 36218 x2 & 75774 x4, the left costocervical is a second order vessel off of the left subclavian, the left deep cervical is a third order vessel off of the left costocervical, the left thyrocervical is a second order vessel off of left subclavian, and the left ascending cervical is a third order vessel off the left thyrocervical. Since 36226 was assigned for the vertebral study, the add on codes should be used for the additional vascular families - code +36218 for the third order catheterization of left deep cervical, +36218 for the third order catheterization of left ascending cervical. The second order catheterizations are bundled. Code +75774 is assigned for the angiograms of these vessels – total of four.

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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
  - 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.

Coding Rules (continued):

- 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.