

# Mastering Neurointerventional Procedures

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2:00 pm EST



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# Disclaimer:

The information presented is based on the experience and interpretation of the presenters. Though all of the information has been carefully researched and checked for accuracy and completeness, ADVOCATE does not accept any responsibility or liability with regard to errors, omissions, misuse or misinterpretation.



# Agenda

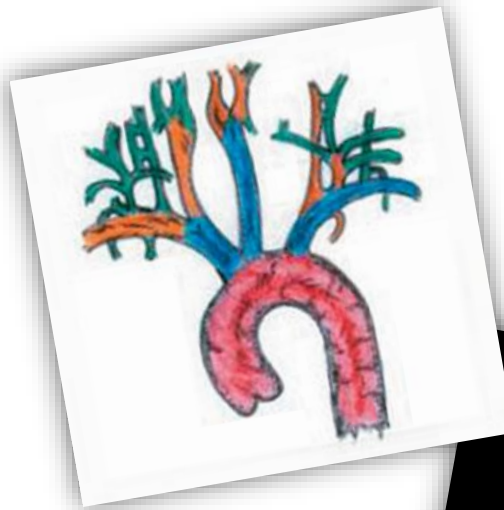
- Neurointerventional Basics:
  - Vascular Anatomy
  - Signs/Symptoms/Conditions
  - Diagnostic Imaging
- Diagnostic Interventional Procedures
- Therapeutic Interventional Procedures

# Sources/References



# Anatomy

- Nonvascular-CNS
  - Brain
  - Spinal Cord
  - Nerves
- Neurointerventional Vascular Anatomy
  - Aortic Arch
  - Carotids
  - Subclavian
  - Vertebral
  - Cerebrals



# Signs, Symptoms & Conditions

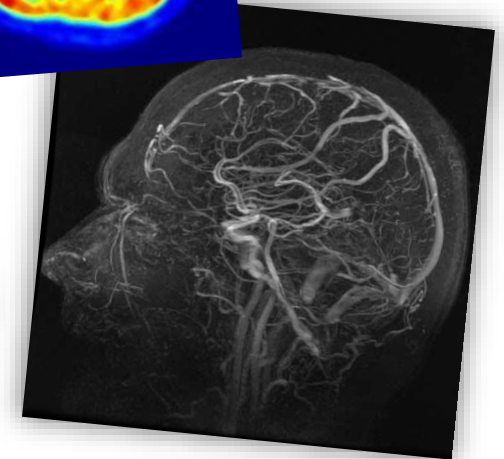
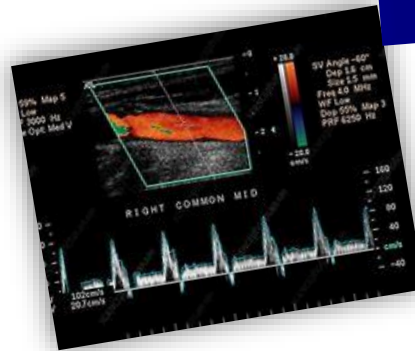
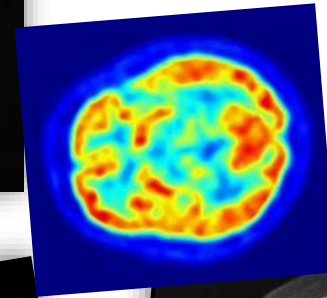
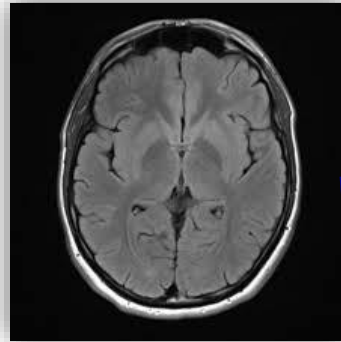
- Headaches
- Loss of Consciousness
- Speech, Vision and Auditory Changes
- TIA
- Aneurysm
- Stroke



- Atherosclerosis
- Hemorrhage
- Stenosis
- Embolus
- Thrombosis
- AVM
- Tumor
- Vasospasm

# Diagnostic Imaging

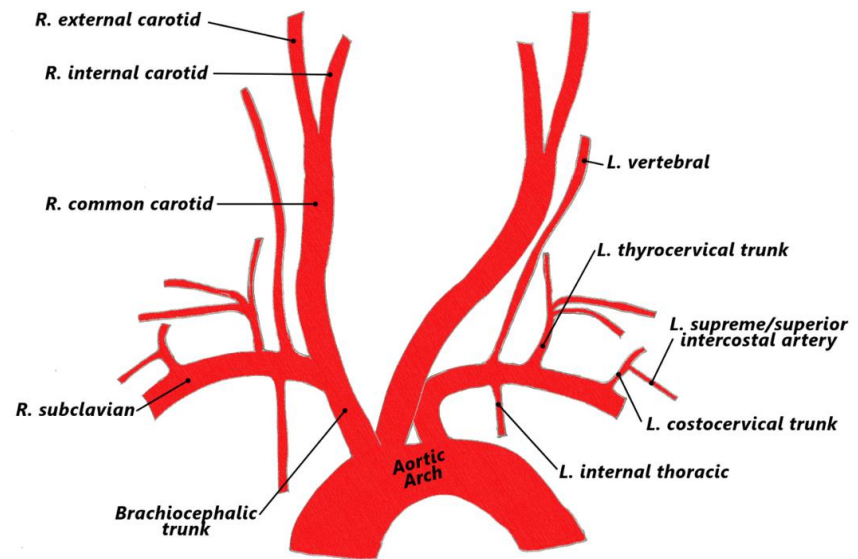
- CT/CTA
- MRI/MRA
- Duplex Studies
- Nuclear Medicine Studies





# Cervicocerebral Angiography

- Vascular Anatomy
  - Vascular Families
  - Variant Anatomy
- Cervical/Extracranial
- Cerebral/Intracranial
- 36221-36228
  - Inclusive/Comprehensive
  - Hierarchy
- 36215-36218
  - Without any imaging



# Cervicocerebral Angiography- Coding

INCLUDED	SEPARATELY CODED
RS&I	Cath placements outside of vascular family
Ipsilateral catheter placement	Diagnostic angio in other vascular family (inc extremity)
Ipsilateral/same vascular family angiography	Catheter placement and imaging for additional selections off subclavian/vertebral circulation
Closure Device	Vascular US guidance
	Sedation

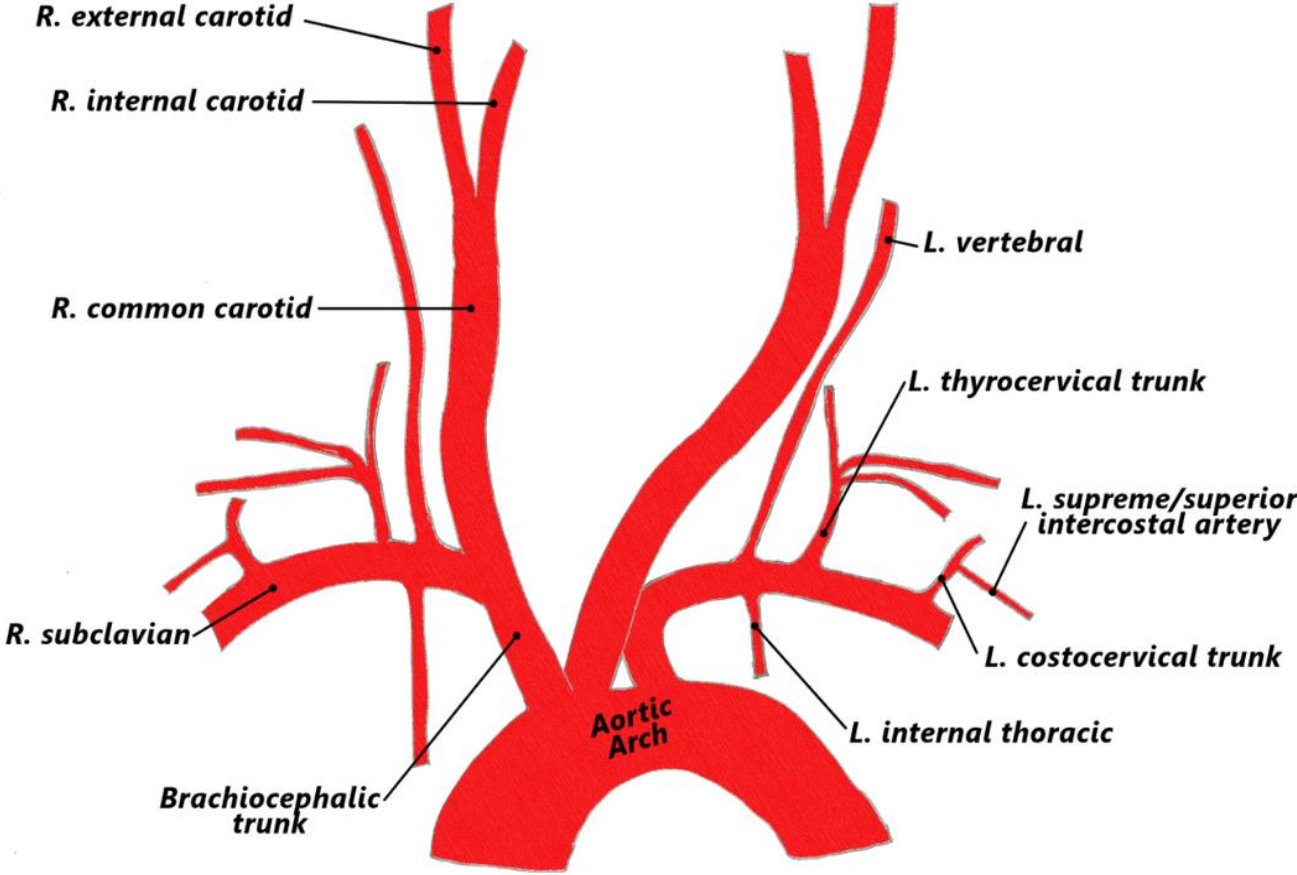
# Cervicocerebral Angiography-Hierarchy

36221	<b><u>Non-selective</u></b> catheter placement, <b><u>thoracic aorta</u></b> , with angiography of the extracranial carotid, vertebral, and/or intracranial vessels, unilateral or bilateral, and all associated radiological supervision and interpretation, <b><u>includes angiography of the cervicocerebral arch, when performed</u></b>
36222	<b><u>Selective</u></b> catheter placement, <b><u>common carotid or innominate artery</u></b> , unilateral, any approach, with angiography of the <b><u>ipsilateral extracranial</u></b> carotid circulation and all associated radiological supervision and interpretation, <b><u>includes angiography of the cervicocerebral arch, when performed</u></b>
36223	<b><u>Selective</u></b> catheter placement, <b><u>common carotid or innominate artery</u></b> , unilateral, any approach, with angiography of the <b><u>ipsilateral intracranial</u></b> carotid circulation and all associated radiological supervision and interpretation, <b><u>includes angiography of the extracranial carotid and cervicocerebral arch, when performed</u></b>
36224	<b><u>Selective</u></b> catheter placement, <b><u>internal carotid artery</u></b> , unilateral, with angiography of the <b><u>ipsilateral intracranial</u></b> carotid circulation and all associated radiological supervision and interpretation, <b><u>includes angiography of the extracranial carotid and cervicocerebral arch, when performed</u></b>

# Cervicocerebral Angiography-Hierarchy

36225	<b>Selective</b> catheter placement, <b>subclavian or innominate artery</b> , unilateral, with angiography of the <b>ipsilateral vertebral</b> circulation and all associated radiological supervision and interpretation, <b>includes angiography of the cervicocerebral arch, when performed</b>
36226	<b>Selective</b> catheter placement, <b>vertebral artery</b> , unilateral, with angiography of the <b>ipsilateral vertebral</b> circulation and all associated radiological supervision and interpretation, <b>includes angiography of the cervicocerebral arch, when performed</b>
36227+	<b>Selective</b> catheter placement, <b>external carotid artery</b> , unilateral, with angiography of the <b>ipsilateral external carotid</b> circulation and all associated radiological supervision and interpretation (List separately in addition to code for primary procedure)
36228+	<b>Selective</b> catheter placement, <b>each intracranial branch of the internal carotid or vertebral arteries</b> , unilateral, with angiography of the <b>selected vessel circulation</b> and all associated radiological supervision and interpretation (eg, middle cerebral artery, posterior inferior cerebellar artery) (List separately in addition to code for primary procedure)

# Cervicocerebral Angiography



# Diagnostic Angio Case 1

# Diagnostic Angio Case 1

36224-Selective catheter placement, internal carotid artery, unilateral, with angiography of the ipsilateral intracranial carotid circulation and all associated radiological supervision and interpretation, includes angiography of the extracranial carotid and cervicocerebral arch, when performed

76937- Ultrasound guidance for vascular access requiring ultrasound evaluation of potential access sites, documentation of selected vessel patency, concurrent realtime ultrasound visualization of vascular needle entry, with permanent recording and reporting (List separately in addition to code for primary procedure)

# Diagnostic Angio Case 2



# Diagnostic Angio Case 2

36224-Selective catheter placement, internal carotid artery, unilateral, with angiography of the ipsilateral intracranial carotid circulation and all associated radiological supervision and interpretation, includes angiography of the extracranial carotid and cervicocerebral arch, when performed

36223-Selective catheter placement, common carotid or innominate artery, unilateral, any approach, with angiography of the ipsilateral intracranial carotid circulation and all associated radiological supervision and interpretation, includes angiography of the extracranial carotid and cervicocerebral arch, when performed

36226-Selective catheter placement, vertebral artery, unilateral, with angiography of the ipsilateral vertebral circulation and all associated radiological supervision and interpretation, includes angiography of the cervicocerebral arch, when performed

36227-Selective catheter placement, external carotid artery, unilateral, with angiography of the ipsilateral external carotid circulation and all associated radiological supervision and interpretation (List separately in addition to code for primary procedure)

# Therapeutic Interventional

- Procedures:
  - Angioplasty/Stent
  - Embolization
  - Thrombolysis/Thrombectomy
  - Non-Thrombolytic Infusions
- Arterial/Venous Coding
  - Generally you will use “standard” venous codes for respective procedures
- Intracranial Territories (3)
  - Right Hemisphere
  - Left Hemisphere
  - Posterior Fossa

# Cervicocerebral Procedures-Angioplasty & Stent

- Treatment:
  - Stenosis/Occlusion
  - Atherosclerotic lesions
- Check payer-review coverage

INCLUDED	SEPARATELY CODED
RS&I	Cath placements outside of vascular family
Ipsilateral catheter placement	Diagnostic angio in other vascular family
Ipsilateral/same vascular family angiography	Arch angio*
Closure Device	Vascular US guidance
Stent is inclusive of angioplasty	Sedation

# Cervicocerebral Procedures-Angioplasty

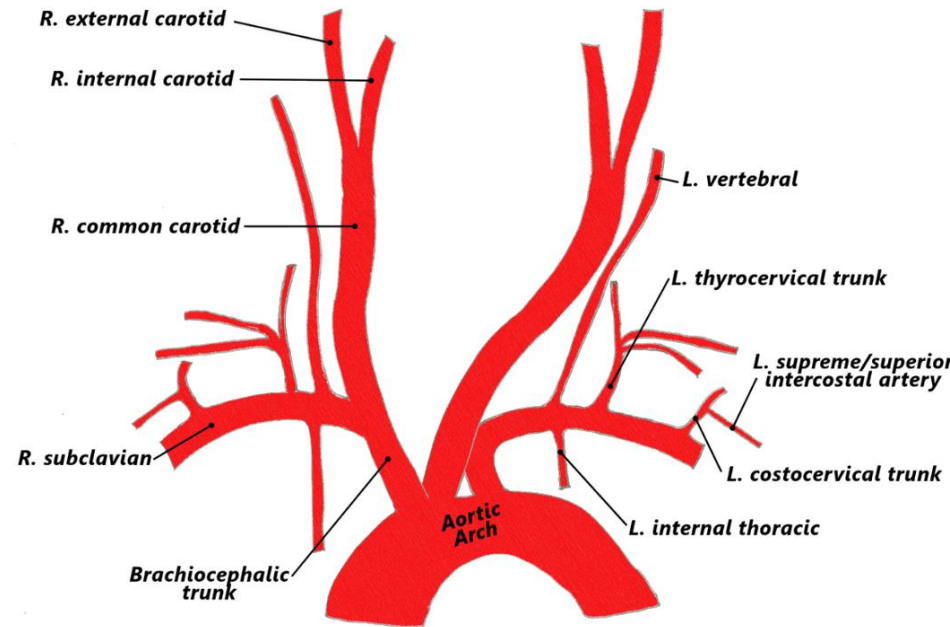
- Intracranial:
  - Atherosclerosis-61630
    - Inpatient Only
    - Restricted Coverage/FDA guidance
    - Medicare-NCD 20.7
- Cervical Carotid/Vertebral-Noncovered for CMS
  - 37246/37247-Arterial
  - Consider -GZ

# Cervicocerebral Procedures-Stent

- Intracranial-61635
  - Atherosclerosis
    - Inpatient Only
    - Similar coverage restrictions as intracranial PTA
      - Wingspan stent coverage
  - Aneurysm/Embolization
    - Same Day-Bundled
    - Separate Date-61635 Non-Medicare ONLY (Non-Covered For Medicare)

# Cervicocerebral Procedures-Stent

- Carotid Cervical
  - With Embolic Protection-37215
  - W/O Embolic Protection-37216\*
- Intrathoracic Common Carotid/Innominate
  - Subclavian/Brachiocephalic via retrograde right brachial approach-37236
  - Subclavian/Brachiocephalic via carotid cutdown-37217
  - Right Brachiocephalic/common carotid-37218
- Extracranial Vertebral-0075T/0076T
  - Category III



# Embolization-CNS/Head and Neck

- 61624/75894
- Treatment of aneurysm, tumor, AVM, hemorrhage
- Inpatient only
- \*Code for cath placement
- \*\*Completion Angiography (75898)
  - MUE=2
- Per surgical field (3)

INCLUDED	SEPARATELY CODED
Guiding Shots/Roadmapping	Selective cath placement*
Stent placement*	RS&I
Closure Device	Completion Angiography**
	Vasc US guidance
	Moderate sedation

# Embolization Case #3



# Embolization Case #3

- 61624: Transcatheter permanent occlusion or embolization (eg, for tumor destruction, to achieve hemostasis, to occlude a vascular malformation), percutaneous, any method; central nervous system (intracranial, spinal cord)
- 36224: Selective catheter placement, internal carotid artery, unilateral, with angiography of the ipsilateral intracranial carotid circulation and all associated radiological supervision and interpretation, includes angiography of the extracranial carotid and cervicocerebral arch, when performed
- 36227: Selective catheter placement, external carotid artery, unilateral, with angiography of the ipsilateral external carotid circulation and all associated radiological supervision and interpretation (List separately in addition to code for primary procedure)
- 75894: Transcatheter therapy, embolization, any method, radiological supervision and interpretation
- 75898: Angiography through existing catheter for follow-up study for transcatheter therapy, embolization or infusion, other than for thrombolysis

# Thrombolysis/Thrombectomy-CNS

- 61645-Arterial
- Any method used to treat thrombus/embolus/occlusion of cerebral arteries
- Once per territory

INCLUDED	SEPARATELY CODED
RS&I	Cath placements outside of vascular family
Ipsilateral cath placement	Diagnostic angio/interventions in other vascular family/territory
Thrombolytics, PTA, and/or stent within treatment territory	Vascular US guidance
Follow up/completion imaging	Sedation
Closure device	

# Thrombolysis/Thrombectomy Case #4

# Thrombolysis/Thrombectomy Case #4

61645-Percutaneous arterial transluminal mechanical thrombectomy and/or infusion for thrombolysis, intracranial, any method, including diagnostic angiography, fluoroscopic guidance, catheter placement, and intraprocedural pharmacological thrombolytic injection(s)

76937-Ultrasound guidance for vascular access requiring ultrasound evaluation of potential access sites, documentation of selected vessel patency, concurrent realtime ultrasound visualization of vascular needle entry, with permanent recording and reporting (List separately in addition to code for primary procedure)

# Non-Thrombolytic Infusion Therapy

- 61650-61651
- Vasospasm, Chemotherapy
- Once per territory
  - One initial
  - 2 possible add-ons
- Not to be reported in same territory as thrombectomy or thrombolysis\*
- Prolonged-Minimum of 10 minutes

INCLUDED	SEPARATELY CODED
RS&I	Cath placements outside of vascular family
Catheter placement	Diagnostic angio/interventions in other vascular family/territory
Diagnostic imaging	Vascular US guidance
Follow up imaging	Sedation
Closure device	

# Non-Thrombolytic Therapy Case #5

# Non-Thrombolytic Therapy Case #5

61650-Endovascular intracranial prolonged administration of pharmacologic agent(s) other than for thrombolysis, arterial, including catheter placement, diagnostic angiography, and imaging guidance; initial vascular territory

61651 X2-Endovascular intracranial prolonged administration of pharmacologic agent(s) other than for thrombolysis, arterial, including catheter placement, diagnostic angiography, and imaging guidance; each additional vascular territory (List separately in addition to code for primary procedure)

# Other NeuroIR Procedures

- **Balloon Angioplasty for Vasospasm:**
  - 61640/61641+-same vascular territory
  - 61642+-ea add'l different vasc territory
  - Not to be used for iatrogenically induced vasospasm
- **Carotid/Vertebral Test Occlusion-61623**
  - Includes cath placements, imaging, and follow up of target vessel
  - Includes neurological and physiological monitoring
  - If DX study has not been performed prior it may be billed, but ipsilateral cath placement still included
- **WADA-95958**
  - **Short** infusion of drug into portion of the brain via catheter
  - Cerebral imaging separately billable
  - Can be coded if performed during embolization





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