



AN INTRODUCTORY GUIDE FOR PHYSICIANS,
CODING PROFESSIONALS AND PRACTICE
MANAGERS TO AID IN UNDERSTANDING CODING AND
REIMBURSEMENT FOR MECHANICAL THROMBECTOMY,
EMBOLECTOMY AND RELATED NEUROLOGY PROCEDURES.

PHYSICIAN CODING GUIDE

2009 UPDATE

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2009 PHYSICIAN CODING GUIDE

This guidebook was developed by Concentric Medical, Inc. for physicians, coding professionals and practice managers to aide in understanding coding and reimbursement for mechanical thrombectomy/embolectomy and related neurology procedures. The guidebook is for educational and informational purposes only. Please contact individual payers for their specific policies and coding guidelines.

Please visit our website at www.concentric-medical.com for additional reimbursement information including a physician calculator. The physician calculator is an interactive tool that provides payment rates for a selection of CPT codes related to the Merci Retrieval System™ and endovascular neurologic interventions for various Medicare geographies.

Also on our website is a 2009 Hospital Reimbursement Brochure, which offers a Medicare policy update and hospital reimbursement rates.

Table of Contents

| | |
|---|----|
| ICD-9-CM Diagnosis Codes..... | 4 |
| Mechanical Thrombectomy..... | 4 |
| Catheterization..... | 6 |
| Diagnostic Angiography..... | 6 |
| Other Related Procedures: Stent Insertion..... | 7 |
| Other Related Procedures: Infusion of Thrombolytic..... | 7 |
| EVALUATION AND MANAGEMENT SERVICES CODING..... | 9 |
| MODIFIERS FOR CPT CODES..... | 10 |
| EXAMPLE CASES..... | 12 |
| Case Example 1..... | 12 |
| Case Example 2..... | 13 |
| Case Example 3..... | 14 |
| Case Example 4..... | 15 |
| Case Example 5..... | 16 |
| Case Example 6..... | 16 |
| FY2009 HOSPITAL REIMBURSEMENT RATES..... | 18 |
| FOR DRGS RELATED TO STROKE CARE..... | 18 |
| MS-DRGs for Percutaneous Mechanical Thrombectomy for Stroke..... | 18 |
| Other Possible Surgical MS-DRGs (varies by principal diagnosis)..... | 18 |
| Medical MS-DRGs (varies by principal diagnosis and use of thrombolytic agent)..... | 19 |

Disclaimer: The presence of an ICD-9 code, CPT® code or revenue code does not by itself guarantee coverage or payment at a particular level. Insurers have widely varying coverage and payment policies and are subject to change. Providers are ultimately responsible for appropriate coding for all cases and should confirm with individual insurance companies the proper codes to bill as well as the coverage policies that apply to a particular patient. Concentric Medical, Inc. does not guarantee that use of the information presented above will ensure coverage or payment for the product or the procedure. This document is for educational purposes only. Physicians and hospitals should use independent judgment when selecting codes that most appropriately describe the services rendered to a patient. Physicians and hospitals are responsible for compliance with individual insurance company billing and reimbursement requirements.

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ICD-9-CM Diagnosis Codes

The following diagnosis codes represent ischemic stroke. While not meant to be an exhaustive list, these codes are most commonly used with endovascular mechanical thrombectomy/embolectomy.

| | |
|--------|---|
| 433.01 | Occlusion and stenosis of basilar artery, with cerebral infarction |
| 433.11 | Occlusion and stenosis of carotid artery, with cerebral infarction |
| 433.21 | Occlusion and stenosis of vertebral artery, with cerebral infarction |
| 433.31 | Occlusion and stenosis of multiple and bilateral precerebral arteries, with cerebral infarction |
| 433.81 | Occlusion and stenosis of other specified precerebral arteries, with cerebral infarction |
| 433.91 | Occlusion and stenosis of unspecified precerebral artery, with cerebral infarction |
| 434.01 | Occlusion of cerebral arteries, cerebral thrombosis, with cerebral infarction |
| 434.11 | Occlusion of cerebral arteries, cerebral embolism, with cerebral infarction |
| 434.91 | Occlusion of cerebral arteries, unspecified, with cerebral infarction |

New for 2009: V-code for Stroke Patients Transferred with IV tPA on Board

Patients who receive IV tPA at one facility and are then transferred to another facility are eligible to be coded with this "history of" code, or V-code. It is important to begin using this code immediately in order to track volume and cost data related to caring for this specific patient group. Please refer to Concentric Medical's "Hospital Inpatient 2009 Medicare Payment and Policy Update" for further information.

CPT® PROCEDURE CODES and PHYSICIAN PAYMENT

Multiple CPT codes may be used for the complete service associated with treatment of ischemic stroke. These include the mechanical thrombectomy itself, catheterizations, diagnostic angiography, and other related procedures.

Mechanical Thrombectomy

| CPT® Code | Description | 2008 CMS National Avg. Physician Payment* | 2009 CMS National Avg. Physician Payment |
|-----------|---|---|--|
| 37184 | Primary percutaneous transluminal mechanical thrombectomy, noncoronary, arterial, including fluoroscopic guidance and intraprocedural thrombolytic injections; initial vessel | \$440 | \$458 |
| +37185 | Second and all subsequent vessel(s) within the same vascular family | \$160 | \$168 |
| +37186 | Secondary percutaneous transluminal thrombectomy (e.g. nonprimary mechanical, snare basket, suction technique), noncoronary, arterial, including fluoroscopic guidance and intraprocedural thrombolytic injections, provided in conjunction with another percutaneous intervention other than primary mechanical thrombectomy | \$243 | \$259 |

*After July 1, 2008 Update

Inclusions with 37184-37186

Codes 37184 to 37186 specifically include use of fluoroscopy and arteriography related to guidance and radiologic supervision and interpretation during the procedure, as well as completion angiography. Injection of thrombolytic agent during the procedure is also included. These services are not coded separately. However, codes 37184

to 37186 do not include selective catheter placement or full-scale diagnostic angiography, and these are coded separately.

Vascular Families

Code 37184 is used for percutaneous thrombectomy of the first vessel. If thrombectomy is performed in additional vessels within the same vascular family, use add-on code 37185 for the second and all subsequent vessels. Code 37185 can never be used alone and must be coded together with 37184. If thrombectomy is performed in an additional vessel in a different vascular family, use 37184 for the first vessel plus 37184-51 for the second vessel.

Per Vessel

Codes 37184 and 37185 are defined as per 'vessel', not per 'thrombus'. If multiple thrombi are removed from the same vessel, only one code is assigned.

Primary vs. Secondary Thrombectomy – Intention of treatment

The CPT codes for mechanical thrombectomy are differentiated as primary and secondary.

As stated in the CPT manual notes, primary arterial mechanical thrombectomy consists of "pre-treatment planning, performance of the procedure, and post-procedure evaluation focused on providing this service". Secondary thrombectomy means removal of "short segments of thrombus or embolus" evident during another intervention, such as angioplasty or stenting. It is sometimes referred to as 'rescue' thrombectomy.

The difference between primary and secondary thrombectomy therefore depends on the focus of treatment and what interventions were planned prior to the procedure, rather than whether or in what sequence another intervention was performed. Primary thrombectomy is often the only intervention performed, but primary thrombectomy may also be performed with another procedure. Secondary thrombectomy is never performed alone. When performed with another intervention, primary and secondary thrombectomy may take place either before or after the other intervention.

Designation of primary and secondary can be more ambiguous in certain scenarios and may involve interpretation of clinical factors in the context of coding requirements.

One example is when both thrombectomy and stenting address underlying disorders, such as stenting of known vertebral artery stenosis with thrombectomy of a pre-existing clot in the middle cerebral artery. If both disorders are known in advance, both can be viewed as primary procedures.

Another example is when the clot was not previously identified but became apparent after stenting. In this scenario, clot removal could be considered a primary thrombectomy if the clot did not result from or complicate the stenting procedure but was rather an additional underlying cause of stroke. Alternately, clot removal could be viewed as a secondary thrombectomy because the need for thrombectomy was not known prior to the procedure.

Complete physician dictation and medical record documentation is important for appropriate coding and payment.

Failed mechanical thrombectomy/embolectomy

As a general rule, a case does not have to be successful to be eligible for billing. Coding depends on the nature and extent of the procedure performed and completed, such as:

- If the procedure was completed but was not successful, e.g., the outcome was not optimal or not all objectives could be accomplished, the procedure may be billed since all of the work was performed.
- If a distinct, lesser service was accomplished, that service may be coded instead, e.g. catheterization only.

Examples of primary thrombectomy 37184 include:

- thrombectomy is the only procedure performed
- thrombectomy reveals underlying stenosis which is then treated with angioplasty
- thrombectomy is performed after a prolonged course of thrombolytic infusion therapy

Examples of secondary thrombectomy 37186 include:

- stenting has thrown off an embolus which must be retrieved before the procedure can be concluded
- a small clot present in the lesion is removed before the planned angioplasty can proceed

- If significant portions of the procedure were completed but the case had to be aborted or terminated prematurely, the procedure can be coded with modifier –53 to indicate a discontinued procedure; this may prompt payor review and individual pricing.

Catheterization

| CPT® Code | Description | 2008 CMS National Avg. Physician Payment* | 2009 CMS National Avg. Physician Payment |
|-----------|---|---|--|
| 36215 | Selective catheter placement, artery, brachiocephalic branch, each first order within a vascular family | \$235 | \$245 |
| 36216 | Initial second order | \$264 | \$277 |
| 36217 | Initial third order | \$317 | \$332 |
| +36218 | Additional second order, third order, or beyond | \$51 | \$53 |

*After July 1, 2008 Update

Selective Catheterization

Documentation must identify the vessels catheterized. For each distinct access, the highest-order vessel catheterized within each vascular family is coded.

Catheterizations of separate vascular families are coded separately. Vascular families are defined as all vessels sharing the same first-order vessel. A first order vessel has its origin off the aorta. In precerebral and cerebral vasculature, left and right sides are typically separate families. For example, selective catheterization of both the right common carotid and left common carotid is coded 36216-RT and 36215-LT-59. Use of modifier -59 is essential to show that the first-order code 36215 is a separate family from the second-order code 36216. Otherwise, the lower-order code 36215 will be rebundled and will not be separately paid. Use modifier -59 on the lower order code, (code 36215 in this case).

Catheterizations of multiple second- and third-order vessels along different paths within the same vascular family are also coded separately using +36218. For example, catheterization of the right internal carotid and the right external carotid is coded 36217 and +36218. Note the plus sign in front of this code. A plus sign indicates an add-on code, which can never be used alone. Code 36218 should only be used in conjunction with other catheterization codes.

Diagnostic Angiography

| CPT® Code | Description | 2008 CMS National Avg. Physician Payment* | 2009 CMS National Avg. Physician Payment |
|-----------|---|---|--|
| 75650 | Angiography, cervicocerebral, catheter, including vessel origin (used for aortic arch) | \$73 | \$77 |
| 75660 | Angiography, external carotid, unilateral, selective | \$65 | \$67 |
| 75662 | Angiography, external carotid, bilateral, selective | \$83 | \$87 |
| 75665 | Angiography, carotid, cerebral, unilateral (used for intracranial internal carotid) | \$65 | \$68 |
| 75671 | Angiography, carotid, cerebral, bilateral (used for intracranial internal carotid) | \$81 | \$86 |
| 75676 | Angiography, carotid, cervical, unilateral (used for common carotid and cervical portion of internal carotid) | \$65 | \$68 |
| 75680 | Angiography, carotid, cervical, bilateral (used for common carotid and cervical portion of internal carotid) | \$82 | \$86 |
| 75685 | Angiography, vertebral, cervical and/or intracranial | \$65 | \$68 |
| +75774 | Angiography, selective, each additional vessel studied after basic examination | \$18 | \$19 |

*After July 1, 2008 Update

Guidance and Road-Mapping with Thrombectomy

There is no separate radiologic supervision and interpretation (S&I) code for the thrombectomy itself. As noted, the thrombectomy codes 37184 to 37186 include use of fluoroscopy and arteriography related to guidance and radiologic S&I during the procedure, as well as completion angiography. However, angiography performed for diagnostic purposes is separately codable.

Distinct Angiography

These codes represent a complete evaluation of the specified site. For codes defined as 'selective', the catheter must be positioned within the specified vessel for injection. Otherwise, a separate S&I code can generally be used for each site that is specifically evaluated and documented.

Add-on code +75774 is never used alone. It represents additional vessels studied after a basic examination. Note that this code is defined as selective. To use 75774, the catheter must be repositioned and dye injected within the vessels branching from the basic vessel and a distinct evaluation must be performed of the additional vessel.

Professional Component

When performing radiologic S&I in the facility (hospital) setting, physicians submit the codes with modifier –26 to indicate that they performed only the professional component of the service.

Other Related Procedures: Carotid Artery Stenting

Carotid Angioplasty and Carotid Stent Insertion

The stent codes include angioplasty within the stent target zone, so angioplasty is not coded separately. For example, code 37215 includes both carotid angioplasty and carotid stent insertion. In fact, there is no CPT code for carotid angioplasty without stenting; this procedure is generally not covered.

In addition to stent placement and angioplasty, codes 37215 and 37216 include all ipsilateral selective carotid catheterization, and angiography.

Note that carotid stent placement without the use of distal embolic protection is also generally not covered.

| CPT® Code | Description | 2008 CMS National Avg. Physician Payment* | 2009 CMS National Avg. Physician Payment |
|-----------|---|---|--|
| 37215 | Transcatheter placement of intravascular stent(s), cervical carotid artery, with distal embolic protection | \$1068 | \$1101 |
| 37216 | Transcatheter placement of intravascular stent(s), cervical carotid artery, without distal embolic protection | Non-covered | Non-covered |
| 0075T | Transcatheter placement of extracranial vertebral or intrathoracic carotid artery stent(s) | At Carrier Discretion | At Carrier Discretion |

Other Related Procedures: Infusion of Thrombolytic

Distinct Thrombolysis

As noted, thrombectomy codes 37184 to 37186 include injection of thrombolytic agent during the procedure as well as completion angiography, so these services are ordinarily not coded separately. However, continuous infusion of a thrombolytic agent either before or after the intervention is separately codable.

Code 37201 represents the thrombolysis and 75896 is the associated S&I. Use of modifier -59 is essential with both codes when submitted with 37184 to show that the infusion therapy was not integral to the thrombectomy procedure. Otherwise, codes 37201 and 75896 will be rebundled into 37184 and will not be separately paid.

Code 75898 is for follow-up angiography. As noted, thrombectomy codes 37184 to 37186 include completion angiography, so this is also ordinarily not coded. However, when the scenario also includes continuous infusion of thrombolytic agent, follow-up angiography can be separately coded if it took place during a separate procedural session or on a different date of service. This is because the follow-up study relates to the infusion therapy rather than the percutaneous thrombectomy.

| CPT® Code | Description | 2008 CMS National Avg. Physician Payment | 2009 CMS National Avg. Physician Payment |
|-----------|---|--|--|
| 37201 | Transcatheter therapy, infusion for thrombolysis other than coronary | \$275 | \$281 |
| 75896 | Transcatheter therapy, infusion, any method (eg. thrombolysis), S&I | \$65 | \$68 |
| 75898 | Angiography through existing catheter for follow-up study for transcatheter therapy, embolization or infusion | \$81 | \$85 |

*After July 1, 2008 Update

A NOTE ON PHYSICIAN PAYMENT

For Medicare, physician payments are made according the RBRVS physician fee schedule. The rates shown above are averages.

With interventions and catheterizations, in general, the first procedure is paid at 100% and subsequent codes are paid at 50% of the fee schedule amount. Angiography and other radiology codes are generally not subject to discounting and are paid at 100% of the fee schedule amount.

Note that Medicare processes claims with up to five procedure codes routinely, but may review additional codes manually prior to payment if appropriate.

Non-Medicare payers often use physician fee schedules similar to RBRVS and may adopt similar policies on discounting and other payment practices. Please contact the individual payers for further information on their specific payment requirements and procedures.

EVALUATION AND MANAGEMENT SERVICES CODING

When coded to 37184, percutaneous thrombectomy has a global period of “000” days. Generally, this means that preoperative and postoperative visits by the same physician on the same day as the procedure are included in the payment for the procedure and should not be coded separately.

However, there are exceptions when a significant, separately identifiable E&M service is performed.

When coded on the day of the procedure, modifiers must be appended to the E&M code to identify to payors that the E&M visit was a significant, separately identifiable service outside of the global surgery package. This prevents the E&M codes from being rebundled with the surgery code and allows for separate payments to be made.

One common exception involves modifier -57. This is used when the physician performs a full-scale E&M service that resulted in the decision to perform the procedure. Use of the modifier differentiates this type of E&M visit on the day of the procedure from a routine, integral pre-operative visit.

Modifier -25 is used when the E&M service is above and beyond the usual preoperative care associated with the procedure. This generally requires that the physician take a history, perform a physical examination, and engage in medical decision making far outside of a routine preoperative visit. It is essential that these elements are clearly documented to substantiate use of -25.

In particular, preoperative critical care services provided on the same day as the procedure may sometimes be coded separately. The patient must first meet the criteria for using critical care codes 99291 and 99292. The critical care must then usually be unrelated to the procedure performed for separate payment to be made. However, this requirement is primarily for trauma and burn patients, and may not apply to critically ill stroke patients. Assuming critical care services are properly documented and substantiated in the patient record, the physician may append modifier -25 to the critical care codes to allow separate payment to be made.

With a global period of “000,” post-operative visits beyond the day of the procedure are not included in the payment amount for the procedure. They may be coded and paid separately.

MODIFIERS FOR CPT CODES

As appropriate, physicians may need to append modifiers to identify unique aspects of the procedure or service. These two-digit hyphenated numbers or letters are added to CPT codes to describe a particular circumstance while not changing the basic definition of the code. Some common modifiers are shown below.

Modifier -22: Increased Procedural Service

The physician may need to indicate that the services provided in a particular procedure were substantially greater than typically required due to, for example, altered anatomy or intraoperative complications. Specific details within the operative report are needed to substantiate use of -22.

Modifier -25: Significant, Separately Identifiable Evaluation and Management Service by the Same Physician on the Same Day of the Procedure or Other Service

Modifier -25 identifies that the patient's condition required a significant, separately identifiable E&M service above and beyond the usual preoperative or postoperative care associated with a procedure on the same day.

Modifier -26: Professional Component

All procedures have a technical component and a professional component. For most surgical procedures, it is clear that the hospital provides the technical component and the physician provides the professional component. However, for some services, particularly imaging, the physician could provide both components. In the facility setting, physicians use -26 to show that they are rendering only the professional component of image interpretation, while the hospital provides the equipment and other technical elements.

Modifier -51: Multiple Procedures

Certain procedures, most commonly represented by surgery codes, are subject to payment reduction when billed on the same day. In general, the primary procedure is paid at 100% of fee schedule amount and subsequent procedures are paid at 50%. The primary procedure should be listed first on the claim, with modifier -51 appended to the subsequent codes. Some codes, particularly add-on codes marked with +, are exempt from -51 and their payment is not reduced.

Modifier -52: Reduced Services

The physician may need to indicate that the services provided in a particular procedure were significantly less than usually required. Examples include performing the procedure on one side only for an inherently bilateral code and not identifying all structures typically involved in the procedure. The operative report should provide specific details on how the procedure was reduced.

Modifier -53: Discontinued Procedure

Modifier -53 is used when the physician starts the procedure but is unable to continue it due to extenuating circumstances or those that threaten the patient's well-being, such as an arrhythmia or a hypertensive episode. Note that for most payers, including Medicare, codes billed with modifier -53 cannot be routinely processed and are subject to medical review and individual pricing.

Modifier -57: Decision for Surgery

An evaluation and management service that resulted in the initial decision to perform the surgery is identified by adding the modifier -57 to the E&M code, to differentiate it from a routine preoperative visit.

Modifier -59: Distinct Procedural Service

Modifier-59 identifies that a normally not coded separately but are appropriate in the particular case because they represent, for example, a different anatomic site or organ system, a separate incision, or a separate lesion.

Modifier -LT: Left Side

Modifier -RT: Right Side

These HCPCS II modifiers identify procedures done on either side of the body.

Note: For Medicare claims, when these modifiers are used with catheterization codes, (36215-36218), modifier -59 must also be used to differentiate between sites and prevent re-bundling.

EXAMPLE CASES

Six procedure reports are presented here as examples of percutaneous mechanical thrombectomy using the Merci Retrieval System™.

The examples outline the ICD-9-CM diagnosis codes and CPT procedure codes that physicians might assign for each case. Discussion on code selection is also provided. These example cases may be helpful to physicians and other providers in coding percutaneous thrombectomy as well as considering how to approach some of the gray areas in coding.

Though drawn from actual cases, these are presented as examples only. Within their practice, physicians and other providers must be certain to assign codes only after careful review of the documentation for each case and consideration of coding guidelines from professional sources, with attention to payor policies and requirements.

Case Example 1

Mechanical embolectomy and thrombolysis for acute stroke

A 5 Fr sheath was placed in the right groin and the following arteries were selectively catheterized: right common carotid, left vertebral and left common carotid. Filming over the neck and head, the right common carotid and left vertebral were unremarkable. The left common carotid injection showed a filling defect at the bifurcation and occlusion of the distal left M1 segment with clot in the anterior and posterior divisions of the left MCA.

The thrombectomy device was placed in the M1 segment and a single pass was performed. Injection afterward showed recanalization of the anterior division of the MCA. A microcatheter was placed in the posterior MCA division and an additional 20 mg of intra-arterial tPA was infused in the left M1 and posterior division of the MCA. A small distal embolus in the distal MCA appeared to improve with infusion of tPA and excellent antegrade flow was seen.

An 8 Fr Angioseal device was used on the right groin for hemostasis. The patient regained function of the right side and started to follow commands at the end of the procedure.

Impression: Successful recanalization of the distal left M1 and anterior and posterior division with initial single pass of L5 for the superior division of the distal M1 and intra-arterial tPA for the rest of the MCA territory.

ICD-9-CM Diagnosis Code

434.01 cerebral artery thrombosis with cerebral infarction

CPT Codes

| | |
|-------------|--|
| 37184 | thrombectomy of left middle cerebral artery |
| 36217-LT | catheterization of middle cerebral artery |
| 36216-RT-59 | catheterization of right common carotid artery |
| 36216-LT-59 | catheterization of left vertebral artery |
| 75680 | arteriogram, cervical carotids, bilateral |
| 75671 | arteriogram, cerebral carotids, bilateral |
| 75685 | arteriogram, vertebral (left) |

Discussion

The clot was extracted from the middle cerebral artery, with additional intra-arterial tPA for thrombolysis of clot in the posterior division of the MCA. An additional code should not be used for thrombolysis because code 37184 includes intraprocedural injection of a thrombolytic agent, without identifying the vessel or segment in which it is used.

Case Example 2

Primary carotid artery stenting procedure with rescue thrombectomy

Patient presented with symptoms of carotid artery stenosis including transient weakness and change in vision. Selective injection of the left common carotid artery shows significant narrowing at the carotid bifurcation, extending into the internal carotid artery.

Angiography confirms the diagnosis of significant carotid stenosis with narrowing of approximately 90%. An embolic protection device was passed beyond the occluded portion of the internal carotid and deployed in the appropriate landing zone beyond the distal end of the occlusion. An angioplasty was performed over the stenotic portion of the vessel and a stent was placed covering the entire length of the lesion.

Following stenting, the embolic protection device was retrieved and showed a significant amount of clot capture. A check angiogram was completed in the left internal carotid artery and a suspected distal clot was observed with significantly restricted flow in the M1 segment.

A Merci® Microcatheter was selectively placed in the M1 segment and angiogram was performed (proximally and distally) to identify clot location. A Merci retrieval procedure was performed and clot was removed restoring flow to the M1 segment and distal branches. A Merci® Balloon Guide Catheter was placed in the internal carotid artery. The Merci Retriever was deployed in the distal M1 segment. A single pass was made with the L5 device and a clot was observed in the aspirate and on the retriever. Check angiogram revealed recanalization of the M1 and distal segments following procedure.

ICD-9-CM Diagnosis Codes

| | |
|--------|---|
| 433.11 | Carotid artery occlusion with cerebral infarction |
| 434.01 | Cerebral artery thrombosis with cerebral infarction |

CPT Codes

| | |
|----------|---|
| 37215 | Stenting of left internal carotid artery with distal embolic protection |
| +37186 | thrombectomy, secondary, middle cerebral artery |
| 37217-59 | catheterization of left middle cerebral artery |

Discussion

Carotid artery stenting was the primary focus of the procedure, including the pre-treatment planning. The clot complicated the stent procedure and had to be removed to complete the procedure, making it a secondary “rescue” thrombectomy. The carotid artery stent code 37215 includes all related catheterization and all imaging on the same side, as well as angioplasty within the target zone. However, catheterization of the M1 segment is distinct and is coded separately. Note that modifier –59 is needed with 37217 to show that this vessel is beyond the carotid artery stenting and to prevent it from being rebundled into 37215. This brings up a point for discussion.

Because the preceding diagnostic angiography for the carotid stenting is included with 37215, it is not clear how to identify diagnostic angiography of the M1 segment. If a cerebral carotid angiography 75665 is coded, modifier -59 would be needed to show that the imaging was not related to the carotid stenting. Then, because the angiography represents just the M1 segment rather than the full scale cerebral carotid anatomy, modifier -52 for reduced services would also be needed. Please refer to local payer guidelines or contact the medical specialty society for guidance in coding this component.

Case Example 3

Angioplasty and stenting of RICA with retrieval of MCA clot (different vessels)

A catheter was advanced into the right common carotid artery with views of the bifurcation and intracranial circulation. There was an occlusion of the right internal carotid artery one centimeter from its origin with no contrast filling of the ACA or MCA. The catheter was next placed in the left common carotid artery and views of the bifurcation and the intracranial circulation were obtained showing normal circulation. There was cross-filling of the right ACA from this injection.

The right carotid occlusion was crossed and pre-stent balloon angioplasty was performed. A stent was deployed and post-stent angioplasty was performed. Following stenting, there was filling of the distal internal carotid artery but no MCA filling was seen.

A Merci® Balloon Guide Catheter was advanced to the distal internal carotid artery and a Merci® Microcatheter was advanced into the M1. The Merci Retriever® was deployed past the clot and was pulled after inflation of the balloon guide. The angiogram subsequently showed minimal change, and no clot was seen on the device. The Merci Microcatheter was again advanced into the M1 and a second Merci Retriever was deployed and was pulled back after balloon inflation. This time, a large clot was seen attached to the device and also in the aspiration syringe. The angiogram then showed good filling of the right distal internal carotid middle cerebral and anterior cerebral arteries.

ICD-9-CM Diagnosis Codes

| | |
|--------|---|
| 434.01 | Cerebral artery thrombosis with cerebral infarction |
| 433.11 | Carotid artery occlusion with cerebral infarction |

CPT Codes

| | |
|-------------|---|
| 37216 | Stenting of right internal carotid artery without distal embolic protection |
| 37184 | Thrombectomy, primary, right middle cerebral artery |
| 36217-Rt | Catheterization of right middle cerebral artery |
| 36215-Lt-59 | Catheterization of left common carotid artery |
| 75676-Lt | Arteriogram, left cervical carotid |
| 75665-Lt | Arteriogram, left cerebral carotid |

Discussion

Only stenting is coded for the right internal carotid artery. Angioplasty performed pre- and post-deployment of the stent is integral to the procedure code. Codes for right carotid catheterization and angiography are also included in 37216 by definition, although left carotid catheterization and arteriography can be coded separately. Code 37216 was assigned because distal embolic protection was not used.

Whether to code the thrombectomy as primary or secondary is arguable. Because the middle cerebral thrombectomy took place after angioplasty and stenting of the internal carotid, it could be viewed as secondary. In this example, however, it was coded as a primary thrombectomy. It was not a "rescue" thrombectomy of short segments of clot, as intended for coding secondary thrombectomy. The MCA is a separate vessel and it had distinct, significant pathology.

Case Example 4

Retrieval of LICA clot with stenting of left internal carotid artery

The patient presented with symptoms of cerebrovascular accident. Selective catheterization and injection of the right vertebral artery showed an unremarkable posterior fossa circulation. Selective injection of the right common carotid showed moderate disease in the bifurcation with 50-60% narrowing. There was good filling of the right anterior circulation. The filling of the left ACA from the right side was very limited, and there appeared to be an occlusion of the left A1 segment.

Selective injection of the left common carotid artery showed a complete occlusion of the left internal carotid artery. Injection of the left internal carotid artery showed an occlusion of the left ICA at the level of the carotid siphon. The microcatheter was navigated distally and exploration showed occlusion of the left M1 segment and a large amount of clot filling the petrous and cavernous carotid, extending to the left A1 segment

The proximal stenosis of the left internal carotid artery was treated with a stent. This allowed for sheath placement in the left internal carotid artery. The Merci® Microcatheter was then passed to the left M1 segment. A pass was made with the Merci Retriever® and a large amount of clot was retrieved from the distal ICA. The Merci Microcatheter was placed in the distal M1 segment and additional intra-arterial tPA was given. Final injection of the left internal carotid artery showed recanalization of the ICA and M1 segment, though there were still multiple branch occlusions of the distal MCA.

ICD-9-CM Diagnosis Codes

| | |
|--------|---|
| 434.01 | Cerebral artery thrombosis with cerebral infarction |
| 433.11 | Carotid artery occlusion with cerebral infarction |

CPT codes

| | |
|-----------|--|
| 37216 | Stenting of left internal carotid artery without distal embolic protection |
| 37184 | Thrombectomy, primary, left internal carotid artery |
| 36217-Lt | Catheterization of left middle cerebral artery |
| 36217-Rt | Catheterization of right vertebral artery |
| +36218-Rt | Arteriogram, left cervical carotid |
| 75676 | Arteriogram, left cerebral carotid |
| 75665 | Arteriogram, right cerebral carotid |
| 75685 | Arteriogram, right vertebral |
| +75774 | Additional selective angiography of left middle cerebral artery |

Discussion

When clinical documentation demonstrates that thrombectomy was the focus of pre-treatment planning and was the primary reason for treatment, then a primary thrombectomy is coded. In this case, the primary problem was the ICA clot extending into the M1. Stenting was performed for access to the intracranial circulation.

The carotid artery stent code 37216 includes all related catheterization and imaging on the ipsilateral side. Catheterization of the M1 segment is distinct and coded separately.

Note that complete dictation and documentation of the focus of treatment is essential. When it is not clearly stated that clot is a primary reason for intervention, particularly when clot is at a more distal location than stenosis, the thrombus might be viewed as having complicated the stenting procedure requiring a secondary thrombectomy.

Also note that carotid artery stenting without the use of distal embolic protection is a non-covered service for Medicare and not reimbursed.

Case Example 5

Unsuccessful clot removal from internal carotid artery

Selective injection of the right common carotid showed normal findings in cervical and intracranial views. Selective injection of the left common carotid artery showed complete occlusion of the left internal carotid artery in the mid upper cervical region. A sheath was placed in the left internal carotid and injection showed complete occlusion by a large clot in the petrous cavernous carotid. A Merci® Microcatheter was advanced all the way to the left MCA, contrast was injected, and imagining showed extension of the clot into the left M1 segment.

Approximately 10 mg of intra-arterial tPA was injected. Multiple passes with the Merci Retriever® were made to try to retrieve the clot in the left ICA and M1. Multiple small 2-3 mm pieces of clot were pulled on several occasions. The procedure was complicated by a 360 degree turn of the left ICA, and all attempts to pull the clot through the turn failed and resulted in failure to substantially recanalize the vessel. The left internal carotid artery occlusion persisted.

Impression: Unsuccessful mechanical embolectomy of the left ICA and thrombolysis of MCA occlusion.

ICD-9-CM Diagnosis Codes

433.11 carotid artery occlusion with cerebral infarction
434.01 cerebral artery thrombosis with cerebral infarction

CPT Codes

37184 thrombectomy, primary, internal carotid artery
36217-LT catheterization of left middle cerebral artery
36216-RT-59 catheterization of right common carotid artery
75680 arteriogram, cervical carotids, bilateral
75671 arteriogram, cerebral carotids, bilateral
+75774 additional selective angiography of left middle cerebral artery

Discussion

In cases such as this, it is helpful to make the distinction between an aborted procedure, which was started but had to be stopped due to the extenuating circumstances, (e.g., the catheter could not cross the occlusion) and an unsuccessful procedure which was completed but was unsuccessful (e.g., the outcome was not optimal or the procedure did not accomplish all objectives).

In this particular case, the full procedure might be coded. The work of the percutaneous thrombectomy was largely accomplished, including engaging the clot, withdrawing it through much of the vasculature and actually removing small pieces, though not the complete body of the clot. An optional approach would be to code the case with modifier -53 if the physician feels that the case was aborted rather than unsuccessful.

If significant portions of the procedure were completed but it had to be aborted or terminated prematurely, the procedure can be coded with modifier -53 to indicate a discontinued procedure. If the procedure was completed but was not successful, e.g. the outcome was not optimal or not all objectives could be accomplished, the full procedure can be billed since all of the work was performed.

Case Example 6

Thrombectomy of left MCA clot with pre- and post-procedural diagnostic angiogram

A 5 Fr diagnostic catheter was used to select the left common carotid artery for cervical and cerebral angiography demonstrating patent internal and external carotid arteries and no evidence of thrombus. However, there was complete occlusion to antegrade flow involving the origin of the left M1.

The Merci® Microcatheter was passed through the clot into the distal M1 where hand-injected angiography was performed demonstrating patent distal M1 segment and stagnant flow with poor collateralization. The Merci Retriever® was deployed into the distal M1, and a pass was made. Repeat angiography was performed and showed complete recanalization of the middle cerebral territory.

A diagnostic catheter was used to subsequently perform a complete cervical and cerebral angiography. The right common carotid artery was selected for cervical and cerebral angiography followed by right and left vertebral arteries where cervical and cerebral angiography was performed. This demonstrated approximately 50-60% stenosis of the right internal carotid artery at its origin, and mild irregularity intracranially involving bilateral vertebral artery origins.

ICD-9-CM Diagnosis Codes

| | |
|--------|---|
| 434.01 | cerebral artery thrombosis with cerebral infarction |
| 433.11 | carotid artery occlusion with cerebral infarction |

CPT Codes

| | |
|-------------|---|
| 37184 | thrombectomy of left middle cerebral artery |
| 36216-LT-59 | catheterization of left vertebral artery |
| 36217-RT | catheterization of right vertebral artery |
| 36218-RT | catheterization of right common carotid artery |
| 75680 | arteriogram, cervical carotids, bilateral |
| 75671 | arteriogram, cerebral carotids, bilateral |
| 75685 | arteriogram, vertebral, right |
| 75685-59 | arteriogram, vertebral, left |
| +75774 | additional selective angiography of left middle cerebral artery |

Discussion

Diagnostic angiography is coded separately with 37184 but intraprocedural, confirmatory and completion angiography is not. Usually diagnostic angiography is performed prior to the thrombectomy; the left common carotid and the left middle cerebral artery catheterizations and views are coded separately.

Angiography during the thrombectomy is not coded separately and, typically, angiography after the thrombectomy is not coded separately either, because post-procedural angiography is almost always for confirmation. However, some of the post-procedural angiography was truly diagnostic in this case. The right common carotid and right and left vertebral arteries were not viewed prior to the thrombectomy and so were viewed afterwards “to subsequently perform a complete...angiography.” Since these are different anatomic sites evaluated to identify any additional disease, the post-procedural angiography was diagnostic and is coded separately. A modifier was required.

FY2009 HOSPITAL REIMBURSEMENT RATES FOR DRGS RELATED TO STROKE CARE

Please visit the Concentric Medical website for 2009 Inpatient Hospital Medicare Policy and Payment updates at www.concentric-medical.com.

MS-DRGs for Percutaneous Mechanical Thrombectomy for Stroke

| 2009 Surgical MS-DRG | 2007 DRG | Description | Average Length of Stay | 2008 Urban Hospital Payment | 2009 Urban Hospital Payment |
|----------------------|----------|--|------------------------|-----------------------------|-----------------------------|
| 023 | 543 | Craniotomy w major device implant or acute complex CNS PDX w MCC | 12.7 | \$25,478 | \$28,087 |
| 024 | | Craniotomy w major device implant or acute complex CNS PDX w/o MCC | 9.0 | \$21,113 | \$19,210 |

Other Possible Surgical MS-DRGs (varies by principal diagnosis)

| 2009 Surgical MS-DRG | 2007 DRG | Description | Average Length of Stay | 2008 Urban Hospital Payment | 2009 Urban Hospital Payment |
|----------------------|------------|--|------------------------|-----------------------------|-----------------------------|
| 025 | | Craniotomy w major device implant or Acute Complex CNS Principal Diagnosis w MCC | 13.0 | \$22,946 | \$27,283 |
| 026 | 001 002 | Craniotomy w major device implant or Acute Complex CNS Principal Diagnosis w/o MCC | 8.2 | \$17,107 | \$16,690 |
| 027 | | Craniotomy & endovascular intracranial procedures w MCC | 4.5 | \$12,599 | \$11,677 |
| 907 | 442 443 | Other OR procedures for injuries w MCC | 11.6 | \$16,808 | \$20,436 |
| 908 | | Other OR procedures for injuries w CC | 6.8 | \$11,844 | \$10,602 |
| 909 | | Other OR procedures for injuries w/o CC/MCC | 3.6 | \$7,644 | \$6,298 |
| 957 | | Other OR Procedure for multiple significant trauma w MCC | 14.7 | \$31,395 | \$33,262 |
| 958 | 486 | Other OR Procedure for multiple significant trauma w CC | 10.3 | \$24,259 | \$19,880 |
| 959 | | Other OR Procedure for multiple significant trauma w/o CC/MCC | 6.4 | \$20,035 | \$13,278 |

Medical MS-DRGs (varies by principal diagnosis and use of thrombolytic agent)

| 2009 Medical MS-DRG | 2007 DRG | Description | Average Length of Stay (Days) | 2008 Urban Hospital Payment | 2009 Urban Hospital Payment |
|---------------------|----------|---|-------------------------------|-----------------------------|-----------------------------|
| 061 | | AIS with use of thrombolytic agent with MCC | 6.8 | \$13,835 | \$15,945 |
| 062 | 559 | AIS with use of thrombolytic agent with CC | 5.3 | \$11,313 | \$10,848 |
| 063 | | AIS with use of thrombolytic agent without CC/MCC | 3.9 | \$10,098 | \$8,408 |

| 2009 Medical MS-DRG | 2007 DRG | Description | Average Length of Stay (Days) | 2008 Urban Hospital Payment | 2009 Urban Hospital Payment |
|---------------------|-------------|--|-------------------------------|-----------------------------|-----------------------------|
| 064 | | Intracranial hemorrhage or cerebral infarct with MCC | 5.5 | \$8,380 | \$10,245 |
| 065 | 014, 015 | Intracranial hemorrhage or cerebral infarct with CC | 4.3 | \$6,446 | \$6,530 |
| 066 | | Intracranial hemorrhage or cerebral infarct without CC/ MCC | 3.1 | \$5,581 | \$4,686 |

MCC = Major Complication or Comorbidity

CC = Complication or Comorbidity

The 2009 Fiscal Year begins October 1, 2008. Teaching and disproportionate share hospitals may receive additional payments per discharge. Providers should verify all coding and payment rules with third party payers. Medical records and documentation must support billing and the use of all procedure and diagnosis codes.

PHYSICIAN CODING GUIDE 2009



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