Interventional Radiology Coding Case Studies

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Week of June 4, 2018

Thrombolysis, Thrombectomy & Angioplasty (3 Days)

INDICATION: Patient with left foot pain and history of multiple thrombolysis attempts to repair patient's fem-distal graft. Patient has been off her Coumadin, presents with INR of 1.6.

PROCEDURES PERFORMED

1. Retrograde puncture of the right common femoral artery.
2. Catheterization of the abdominal aorta.
3. Placement of catheter within the left common iliac artery.
4. Left pelvic oblique arteriogram.
5. Catheterization of the common femoral artery.
6. Unilateral left lower extremity angiogram.
7. Catheterization of the peroneal artery.
8. Injection of contrast for peroneal arteriogram.
9. Injection of tPA throughout thrombosed fem-distal bypass graft.
10. Balloon angioplasty throughout the entirety of the graft using a 4-120 balloon.
11. Placement of lysis catheter within the thrombosed fem-distal bypass graft.
12. Initiation of thrombolysis.

Patient returned a.m. of 4/18/18.

1. Injection of contrast through indwelling lysis catheters.
2. Repositioning lysis catheter.
3. Continuation of thrombolysis.

Patient returned a.m. of 4/19/18.

1. Injection of contrast through indwelling sheath for left lower extremity arteriogram.
2. Balloon angioplasty throughout the entirety of the fem-distal bypass graft including the proximal peroneal artery using 2.5, 3.0, 4.0, and 5.0 balloons.
3. Angiojet thrombectomy throughout the graft as well as the peroneal artery.
4. Additional views obtained of the left leg.

Vital signs, pulse oximetry and response to verbal commands were monitored and recorded by the nurse throughout the procedure and the recovery period. All medications for conscious sedation including dosages administered were placed in the medical record. The patient returned to baseline neurologic and physiologic status prior to leaving the department. No immediate sedation-related complications were noted.

PROCEDURE

Informed and written consent was obtained from the patient after discussion of risks, benefits and alternatives of the procedure. The patient expressed full understanding and agreed to proceed forward. The patient was placed supine on the angiographic table. The right groin was prepped and draped in normal sterile fashion. Puncture was made of the right common femoral artery in a retrograde fashion. A 0.018-wire was advanced with placement of a 4-French transition coaxial sheath. A 0.035-wire was then inserted through this followed by placement of a 5-French sheath and a SOS omni catheter, the catheter was placed at the aortic bifurcation and a left pelvic arteriogram was performed demonstrating unremarkable appearance of the common iliac artery, external iliac artery, and hypogastric artery. The fem-distal bypass graft is occluded.

Next, a glidewire in combination with a KMP catheter were used to cannulate the occluded fem-distal bypass graft and was placed with the tip in the peroneal artery. A gentle injection of contrast was performed demonstrating patency of the peroneal artery with moderate areas of irregularity of stenosis within the proximal aspect.

Next, a 0.018-wire was advanced through the catheter. A Tuohy adapter was inserted over the KMP catheter and 10 mg tPA was infused along the course of the occluded fem-distal bypass graft. A 4 mm balloon was deployed throughout the course of the bypass graft. Thrombolysis was then initiated through a Craig-MacNamara 30 cm infusion length catheter as well as a micro Mewissen 10 cm infusion length catheter throughout the length of the fem-distal bypass graft. Thrombolysis was initiated at a rate of 1 mg tPA per hour.

Patient returned to cath lab a.m. of 4/18/18. Injection of contrast through the lysis catheters demonstrated patency of the fem-distal bypass graft though with markedly sluggish flow. Residual clot was seen, the peroneal artery remains patent with persistent moderate stenosis within the proximal aspect. Additionally, there is a high-grade stenosis identified within the distal anastomosis of the fem-distal bypass graft at the stented margin. Patient returned to the floor and thrombolysis was continued at the same rate with advancement of the Craig-MacNamara catheter by approximately 1-2 cm.

The patient returned a.m. of 4/19/18. Injection through the catheters demonstrated patent flow throughout the venous bypass graft with mild irregularity throughout consistent with mild multifocal areas of stenosis. Balloon angioplasty was performed throughout these areas to 5 mm as well as 4 mm at the distal aspect of the stent. The areas of stenosis within the proximal peroneal artery underwent balloon angioplasty at 2.5 mm and 3 mm proximally. A repeat injection of contrast demonstrated diminished flow throughout the peroneal artery with multifocal areas of spasm throughout the peroneal artery. This partially resolved after 400 mcg of nitroglycerin. A persistent area of stenosis was seen at the distal aspect of the stent at the distal aspect of the bypass graft, a

repeat angioplasty was performed at 4 mm. Repeat injection of contrast demonstrated some residual thrombus within the peroneal artery which propagated causing occlusion. Angiojet thrombectomy was performed throughout this area without significant results. There is significant spasm within the vessel which did not resolve. Ultimately flow could not be restored. Given the extended procedure time and poor result, procedure was terminated. Sheaths, catheters, and wires removed. Hemostasis was obtained on the floor with manual compression.

CONCLUSION: Inability to successfully restore flow throughout the fem-distal bypass graft with one vessel runoff provided by the peroneal artery. At the conclusion of the procedure, there was diffuse spasm in the peroneal artery which caused propagation of thrombus proximally. The spasm partially resolved with nitroglycerin, however, thrombus continued to propagate despite angiojet thrombectomy and heparin infusion. At this point, the procedure was terminated.

Interventional Radiology Coding Case Studies
CPT Codes

Week of June 4, 2018

Thrombolysis, Thrombectomy & Angioplasty (3 Days)

Procedure Codes:

Day 1

- **36247** Catheterization of the peroneal artery
- **75710-LT(59)** Imaging of left lower extremity
- **75774 (59)** Additional imaging of left lower extremity
- **37211** Initiation of thrombolysis
- **J2997** Injection, alteplase recombinant, 1 mg (tPA)

Day 2

- **37213** Continuation of thrombolysis
- **J2997** Injection, alteplase recombinant, 1 mg (tPA)

Day 3

- **37184** Thrombectomy peroneal artery
- **37224** Angioplasty femoral bypass graft/peroneal
- **37214** Cessation of thrombolysis

Diagnosis Codes:

- **T82.868A** Thrombosis Femoral Bypass Graft
- **T82.858A** Stenosis Femoral Bypass Graft

Comments:

Day 1

- Code 36247 is assigned for catheterization of the peroneal artery which is a third order vessel. All lesser order catheterizations are bundled.
- Code 75710 is assigned for the initial imaging of the left lower extremity when the catheter was placed at the aortic bifurcation.
- Code 75774 is assigned for additional extremity imaging after the catheter was placed into the peroneal artery for additional imaging.
- Code 37211 is assigned for initiation of an arterial thrombolysis to treat the femoral bypass graft.
- Although a balloon was utilized, there is no mention of an underlying stenosis being treated, therefore it is assumed it was used to facilitate performance of the thrombolysis.

Day 2

- Code 37213 is assigned for continuation of thrombolysis of the femoral bypass graft. Extremity imaging performed as a thrombolysis check is bundled into code 37213.

Day 3

- Code 37224 is assigned for angioplasty of the femoral bypass graft/peroneal. Documentation does not specifically identify treatment if separate and distinct lesions, therefore only one PTA may be reported. The focus appears to be the bypass graft, therefore code 37224 is chosen over 37228.
- Code 37184 is assigned for the thrombectomy of the peroneal. The documentation indicates this was to treat "residual stenosis", therefore this is not a rescue (secondary) thrombectomy.
- Code 37214 is assigned for cessation of thrombolysis. The imaging performed prior to the interventions on day 3 is bundled with code 37214.

Additional Comments:

- The total amounts of tPA administered each day need to be verified to report correct number of units.
- Moderate sedation time and medications not documented in the report.
- Amount of contrast injected not documented in report.
- Drugs and supplies are billed by the facility performing the procedure and should not be assigned for professional fee coding.

Applicable Coding Rules:

Catheterization Codes

- When performing thrombolysis the catheter must be manipulated through the arterial or venous system to perform the procedure. Catheterization codes should be assigned in accordance with the rules for reporting non-selective and selective catheterization unless otherwise bundled into the code for the thrombolysis (ie, intracranial thrombolysis).

- Remember in the lower extremities, the external iliac and common femoral arteries are considered one vessel for coding purposes and in the upper extremities the subclavian and axillary arteries are also considered one vessel for coding purposes.

- It is important to note that the site of the thrombolysis alone is not the sole factor in determining catheterization selectivity. There may be instances when it is necessary to place the catheter beyond the vessel that is the site of a thrombolysis. Remember, catheter selectivity is based on the most distal catheter placement.

Diagnostic Angiography

- An initial diagnostic angiogram may be reported when performed. If a prior diagnostic angiogram has been performed, diagnostic angiography should only be reported separately in accordance with guidelines established for reporting with transcatheter procedures. Note that diagnostic angiography is included with intracranial thrombolysis, code 61645.

Thrombolysis (37211-37214)

- Codes 37211 (arterial) and 37212 (venous) are assigned for the initial day of treatment.

- Modifier -50 is utilized to report bilateral thrombolysis.

- Code 37213 describes the continuation of an arterial or venous thrombolysis on a subsequent day.

- Code 37214 describes the final day of an arterial or venous thrombolysis procedure.

- When initiation and cessation occur on the same day of service, assign only the code for the initiation 37211 (arterial) or 37212 (venous).

- The following work is included with codes 37211-37214:
    - Follow-up arteriography/venography
    - Catheter position change and/or exchange

RS&I Codes

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

Revascularization Coding Rules

Catheterization Codes

- As a general rule, accessing the vessel, selective catheterization of the vessel and crossing of the lesion is bundled into the lower extremity revascularization codes. All catheter placements related to performance of the therapeutic intervention, including catheter placements for any diagnostic angiography associated with the therapeutic intervention should not be coded separately.

Diagnostic Angiography

- An initial diagnostic angiogram may be reported when performed. If a prior diagnostic angiogram has been performed, diagnostic angiography should only be reported separately in accordance with guidelines established for reporting with transcatheter procedures.

Revascularization Codes

- The revascularization codes include transluminal angioplasty, atherectomy and stent placement in the lower extremities.

- CPT® has designated three distinct vascular territories: iliac, femoral/popliteal, and tibial/peroneal.

- The revascularization codes are unilateral, therefore both a primary code and an add-on code may be reported once for each side in each territory.

- Use of an embolic protection device for performance of the services as described by the revascularization codes should not be reported separately.

- The closure of the arteriotomy through any means when associated with a revascularization procedure should not be coded separately.

- Administration of Heparin, Nitroglycerin, etc., during the procedure is not coded separately.

RS&I Codes

- **Bundled Components.** All RS&I work directly related to the intervention is bundled into the surgical codes for lower extremity revascularization. This work includes the following services: contrast injections, angiography, roadmapping, and fluoroscopic guidance for the intervention, vessel measurement, and completion angiography.

Choosing the Correct Code

- Lower extremity revascularization codes are assigned for each vascular territory.

- To select the appropriate codes for these therapeutic interventions determine the following for each vascular territory:

  (1) each vessel that was treated

  (2) the intervention(s) performed in each vessel

  (3) the most extensive procedure performed.

- The most extensive procedure performed in each territory will determine the primary CPT® code for each territory as well as the appropriate add on codes.

- The Society for Interventional Radiology has established the following hierarchy to determine the most extensive procedure. The list is ordered from lowest to highest:

  - Angioplasty
  - Stent
  - Atherectomy
  - Stent with atherectomy

- **Femoral/Popliteal Territory.** The femoral/popliteal territory is made up of the common femoral, superficial femoral, deep femoral arteries and the popliteal artery.

    - The entire territory has been designated as one vessel for coding purposes, therefore only one code will be reported for multiple interventions for multiple vessels within this territory. There are no add-on codes for this territory.

- **Tibial/Peroneal Territory.** The tibial/peroneal territory is made up of the anterior tibial, posterior tibial, peroneal and tibioperoneal trunk arteries.

    - Each artery is considered a separate vessel for coding purposes.

    - Up to three codes may be reported for this territory – one primary code to describe the most extensive procedure, followed by up to two add on codes for two additional vessels.

    - When revascularization is performed of the tibioperoneal (TP) trunk in conjunction with either the posterior tibial or peroneal, the TP trunk is considered part of those vessels and the intervention on the TP trunk would not be coded separately.

    - When an intervention is performed in the anterior tibial and TP trunk only, both are coded as separate vessels.

Thrombectomy Coding Rules

Arterial Thrombectomy Codes (37184-37186)

- Codes 37184-37186 describe arterial thrombectomy procedures. *(See code 61645 for intracranial arterial thrombectomy).*

Primary Thrombectomy

- Primary thrombectomy includes pretreatment planning and post procedure evaluation in addition to performance of the procedure.

- Primary thrombectomy is reported with codes 37184 and +37185 and may precede or follow another intervention.

- If the original intent of the physician is to perform a thrombectomy, the procedure is reported as a primary thrombectomy. Typically, the diagnosis of thrombus has already been made.
- Most commonly primary mechanical thrombectomy will precede another percutaneous intervention with the decision regarding the need for other services not made until after mechanical thrombectomy has been performed.
- Code 37184 is reported for the initial vessel treated and code +37185 is reported for any subsequent vessels treated within the same vascular family.
- Code 37184 and +37185 are assigned when:
    - Thrombectomy is the only therapeutic intervention performed
    - Thrombectomy is performed and determination is made that other interventions must be performed.
- Continuous infusion therapy (37211-37214) may be reported in conjunction with thrombectomy codes.
- Do not report code 37184 in conjunction with 61645, 76000, 76001, 96374, 99151-99157.
- Do not report add-on code +37185 in conjunction with 61645 for intracranial thrombectomy.

Secondary Thrombectomy

- Secondary thrombectomy, commonly referred to as "rescue" thrombectomy is reported with code +37186.
    - Do not report with code 61645 for intracranial thrombectomy.
- If the original intent of the physician is to perform another peripheral intervention, the thrombectomy is reported as a secondary thrombectomy.
- A secondary thrombectomy is performed to facilitate performance and/or completion of the planned interventional procedure.

- Code +37186 is assigned when:
    - Thrombectomy is performed to remove a small amount of clot present in a vessel that needs to be removed prior to another planned intervention.
    - Thrombectomy is performed to remove a thrombus or embolus that develops during another therapeutic intervention such as an angioplasty or stent placement.
- **Balloon Maceration of Clot.** Utilizing a balloon to facilitate removal of a thrombus is not coded separately. Treatment of an underlying stenosis must be documented to report angioplasty in conjunction with thrombectomy in the same vessel.

RS&I Codes

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