Interventional Radiology Coding Case Studies

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

Week of March 26, 2018

Venogram, Thrombectomy & Stent Placement

1. LEFT LOWER EXTREMITY VENOGRAM AND PELVIC VENOGRAM PERFORMED THROUGH PREVIOUSLY PLACED MULTI-HOLE INFUSION CATHETER.
2. ULTRASOUND-GUIDED AND FLUOROSCOPIC-GUIDED ACCESS OF THE LEFT POPLITEAL VEIN FROM THE POSTERIOR APPROACH WITH PERMANENT GRAYSCALE IMAGING AND MAINTENANCE OF PERMANENT RECORD.
3. ADVANCEMENT OF A 10 cm LENGTH 8-FRENCH VASCULAR SHEATH OVER A GUIDEWIRE INTO THE LEFT POPLITEAL VEIN FOLLOWED BY ADVANCEMENT OF THE CAT8 INDIGO SYSTEM MECHANICAL THROMBECTOMY CATHETER AND PERFORMANCE OF MECHANICAL THROMBECTOMY OF THE LEFT POPLITEAL VEIN, LEFT FEMORAL VEIN, LEFT COMMON FEMORAL VEIN, LEFT EXTERNAL AND COMMON ILIAC VEINS.
4. FLUOROSCOPIC GUIDED DEPLOYMENT OF A 14 mm DIAMETER x 80 mm LENGTH SMART STENT EXTENDING FROM THE DISTAL INFERIOR VENA CAVA INTO THE JUNCTION OF THE LEFT COMMON AND EXTERNAL ILIAC VEIN FOLLOWED BY DEPLOYMENT OF AN OVERLAPPED 12 mm x 60 mm SMART STENT FOLLOWED BY DEPLOYMENT OF AN OVERLAPPED 12 mm x 80 mm LUMINEXX STENT WITH BALLOON DILATION OF THE STENTS.
5. REPEAT MECHANICAL THROMBECTOMY OF THE LEFT POPLITEAL, LEFT FEMORAL, LEFT COMMON FEMORAL, AND LEFT EXTERNAL ILIAC VEIN WITH THE CAT8 INDIGO SYSTEM MECHANICAL THROMBECTOMY CATHETER.
6. COMPLETION LEFT LOWER EXTREMITY LEFT PELVIC VEIN VENOGRAPHY.
7. MODERATE SEDATION.

CLINICAL HISTORY: This patient is a 46-year-old female who underwent mechanical thrombectomy and placement of a multi-hole infusion catheter to treat left lower extremity extensive deep venous thrombosis extending from the left popliteal vein across the left external iliac vein and common iliac vein. The findings are most consistent with May-Thurner syndrome. Additionally the patient underwent placement of a retrievable filter yesterday. We infused 1 mg tPA per hour to treat the left popliteal vein across the common iliac vein and the patient was admitted to the intensive care under observation. There has been no clinical evidence of bleeding and the patient's leg feels less painful and less tight.

INFORMED CONSENT: The patient's diagnosis, treatment plan/procedure, risks and benefits, treatment alternatives, complications, and prognosis with and without treatment were explained to the patient and/or patient's family in plain language. Informed consent was obtained and we were asked to proceed with the procedure. A verbalized timeout was performed before the procedure. The patient's name,date of birth, procedure,site, and equipment, as well as pertinent labs, medications, and allergies we reviewed.

ANESTHESIA: Local, 2% Lidocaine **SEDATION:** Moderate sedation.

TECHNIQUE AND FINDINGS: The patient was placed in the prone position on the interventional table and a limited ultrasound exam of the left leg above the knee shows re-thrombosis of the left popliteal vein. The left leg was then prepped utilizing all elements of a maximal sterile barrier including cap, mask, sterile gown and gloves, large sterile sheet, hand hygiene, and 2% chlorhexidine for cutaneous antisepsis and the existing right internal jugular vein infusion catheter and chest wall were then prepped in a similar fashion.

Moderate sedation protocol was then initiated and the patient was monitored throughout the course of a 3 hour and 35-minute procedure by the interventional radiology nursing staff utilizing constant ECG, pulse oximetry, intermittent blood pressure measurement and intravenous administration of Versed and fentanyl. No complications related to moderate sedation administration occurred. The patient was administered 2 grams of Ancef intravenously 1 hour prior this procedure. No additional antibiotics will be administered relative to this procedure.

A total of 2% Lidocaine was infiltrated posterior to the thrombosed left popliteal vein with a 25-gauge needle and a small incision was made in the skin with a #11 blade. Utilizing a combination of direct, real-time ultrasound guidance and road mapping graphic technique performed with injection of Isovue 300 diluted contrast material through the catheter positioned in the popliteal vein from the right internal jugular approach we accessed the right popliteal vein with the 21-gauge access needle and advanced a 0.018 Nitinol wire through the needle into the right popliteal and right femoral vein. We removed the needle over the wire and advanced 3-4-French short catheter over the wire into the right popliteal vein, removed this wire and advanced a 3 mm J-wire through the catheter into the right common femoral vein. We removed the short catheter over the wire and advanced an 8-French vascular sheath over the wire into the right popliteal vein and we removed the stylet from the sheath and connected the side tubing in the sheath to a heparinized saline drip. We then performed left lower extremity venography through the sheath showing that there has been formation of new thrombus in the left popliteal vein and left femoral vein and common femoral vein compared to completion mechanical thrombectomy yesterday. This despite infusing 1 mg of tPA per hour across these areas.

We then decided to perform repeat mechanical thrombectomy and advanced the CATS Indigo system mechanical thrombectomy catheter through the 8-French sheath and over the guidewire and performed mechanical thrombectomy from the left popliteal vein through the left femoral vein into the left external iliac vein and into the left common iliac vein. After performing mechanical thrombectomy we performed a hand-injection venogram through the sheath which was positioned in the left common iliac vein which shows a significant stenosis that flow across the left common iliac vein into the inferior vena cava.

We then advanced an exchange-length stiff-angled hydrophilic wire through the sheath into the inferior vena cava and then removed the sheath over the wire and removed the Indigo catheter over the wire and advanced a 9-French 65 cm length vascular sheath over the guidewire into the left common iliac vein. We then performed roadmap venogram from the left common iliac vein and marked the deployment site in the inferior vena cava on the monitor and then advanced the 14 mm x 80 mm SMART stent over the wire and deployed the stent with fluoroscopic guidance from the distal inferior vena cava to the junction of the left external iliac vein and left hypogastric vein.

After deployment of the stent, digital x-ray image of the stent was obtained showing significant compression of the stent at the junction of the inferior vena cava in the left common iliac vein consistent with a finding seen in May-Thurner syndrome.

We then advanced a 12 mm diameter x 4 cm length angioplasty balloon over the wire and inflated the balloon with an insufflator throughout the entire length of the stent showing significant expansion of the narrowing in the stent and repeated hand- injection venogram through the sheath showing flow through the stent into the inferior vena cava. We then retracted the sheath into the external iliac vein and performed repeat venography showing filling defects and irregularity of the left external iliac vein extending into the proximal left common femoral vein. We had treated this area with the mechanical thrombectomy device and with tPA overnight and decided it would be prudent to stent this entire region.

We then advanced a 12 mm diameter *x* 60 mm length SMART stent over the guidewire and advanced this stent 2 cm into the previously placed stent and deployed the stent across the left external iliac vein after which we dilated the stent with the 12 mm diameter balloon. We then repeated venography in the left common femora vein showing segment of left external iliac vein with significant irregularity and again we had treated this with the mechanical thrombectomy device suggesting this could be adherent clot, probably chronic.

We then deployed a 3rd stent a 12 mm diameter x 80 mm Luminexx stent overlapping the previously deployed stent by 2 cm and deployed this stent into the mid le common femoral vein and dilated this stent with the 12 mm diameter balloon. We then dilated the initially placed stent with the 14 mm diameter balloon and repeated venography from the mid left common femoral vein showing excellent flow of contrast material across the stents into the inferior vena cava. We then retracted the sheath into the proximal left femoral vein and identified residual thrombus and treated this area with the CAT8 indigo system mechanical thrombectomy catheter with good resolution of the thrombus seen on repeat venography. Repeat venography from the left popliteal vein shows no residual thrombus in the left popliteal vein and excellent flow of contrast material from the left popliteal vein across the stents placed in the left pelvic veins and rapid flow into the inferior vena cava.

The mechanical thrombectomy catheter and wire were then removed from the left popliteal vein sheath and the guidewire removed from the right internal jugular vein sheath. The left popliteal vein sheath was secured with 0 Monofilament suture and a sterile adhesive dressing. Digital x-ray image of the previously placed retrievable filter shows it in stable position. The patient tolerated the procedure without apparent difficulty.

At total of 54 minutes and 37 seconds of fluoroscopic x-ray exposure was utilized to perform this procedure. Venous thrombectomy specimen sent to the pathology department.

IMPRESSION: Left lower extremity and pelvic venography performed after overnight thrombolytic therapy and mechanical venous thrombectomy performed yesterday shows recurrent thrombosis of the left popliteal, left femoral, left common femoral, left external iliac veins, but there is less thrombus as compared to the initial venogram.

Pelvic venography identifies a stricture at the left common iliac vein compatible with May-Thurner syndrome.

Overlapped metal stents were placed from the distal inferior vena cava into the left common femoral vein with the 1st stent from the inferior vena cava into the left common iliac vein, a 14 mm diameter x 80 mm length SMART stent followed by overlapped 12 mm x 60 mm SMART stent overlapped with a 12 mm diameter x 80 mm length Luminexx stent. These stents were dilated with a 14 mm and 12 mm balloon.

Repeat mechanical thrombectomy was performed with the CAT8 Indigo system mechanical thrombectomy catheter to treat the left popliteal vein, left femoral vein, left common iliac vein, left external iliac vein, left common iliac vein. A significant amount of thrombus was removed with this system.

Completion left lower extremity and left pelvic venography demonstrates excellent flow of contrast material from the left popliteal vein across the left femoral, left common femoral veins an through the previously placed stents extending from the distal inferior vena cava into the left common femoral vein.

After removing the sheaths we will restart the patient on intravenous Heparin regimen.

Interventional Radiology Coding Case Studies
CPT Codes

Week of March 26, 2018

Venogram, Thrombectomy & Stent Placement

Procedure Codes:

- 36005 Catheterization of left popliteal vein (and other left leg veins)
- 76937 Ultrasound guided vascular access
- 37188 Thrombectomy, repeat treatment on subsequent day during thrombolytic therapy
- 37238 Stent placement
- 37214 Thrombolysis discontinued (follow-up imaging through existing jugular catheter)
- 99152 Moderate sedation first 15 minutes
- 99153 x13 Moderate sedation each additional 15 minutes

Diagnosis Codes:

- I82.422 DVT of iliac veins (left)

Comments:

- A venogram was performed through an existing infusion catheter for follow-up imaging during a course of thrombolytic therapy. This imaging is bundled with the thrombolysis code 37214, which is assigned, because thrombolytic therapy was discontinued at this session.
- A new access was gained at the left popliteal vein and the catheter was placed all the way up to the left common iliac vein. This is a non-selective catheterization, 36005, since the catheter did not cross the vena cava.
- The thrombectomy is reported with code 37188 because it was performed on a subsequent day during thrombolytic therapy. The prior day the patient had a thrombectomy, followed by a continuous infusion and was brought back the next day for follow-up imaging revealing the need for further intervention.
- Three overlapping stents were placed to treat a stenosis extending in the iliac vein to the vena cava.
- 3 hours, 35 minutes of moderate conscious sedation noted, billed in 15 minute increments. (99152, 99153)
- The amount of Isovue 300 (Q9967) was not documented.

RadRx

"Your Prescription for Accurate Coding & Reimbursement"

www.radrx.com

Applicable Coding Rules:

Thrombolysis

- 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
- Note that code *37195 Thrombolysis, cerebral by IV infusion* does not describe these transcatheter thrombolytic procedures. Code 37195 is assigned when a thrombolytic is administered by a nurse via IV access. This is typically performed in the Emergency Department.
- **Operative field.** Only one thrombolysis code should be reported for each operative field. An operative field refers to the area immediately surrounding and directly involved in a treatment/procedure. If multiple vessels in the same leg are treated, the code is reported only once. However, if bilateral lower extremity infusions are being performed, the thrombolysis code is reported for each side. To report bilateral thrombolysis through separate access sites, append modifier -50 to the appropriate thrombolysis code.
- **Single vs. Multiple Vessels.** Thrombolysis codes are not assigned per vessel, rather they are assigned one time per operative field. Each extremity is its own operative field.
- **Multiple Occlusions.** When there are multiple occlusions treated within the same operative field only one thrombolysis code is reported for that operative field.
- **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.

Applicable Coding Rules (continued):

Thrombectomy

Catheterization Codes

- When performing a thrombectomy 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 thrombectomy procedure such as with intracranial thrombectomy (61645).

- 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 thrombectomy 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 thrombectomy. Remember, catheter selectivity is based on the most distal catheter placement.

Diagnostic Angiography

- An initial diagnostic angiogram may be reported when performed with codes 37184-37188. 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 thrombectomy, 61645.

Venous Thrombectomy Codes (37187-37188)

- Code 37187 is assigned for a venous thrombectomy of one or more vessels in the same extremity. This code is used for the initial application of venous thrombectomy.

- Code 37188 is utilized to report each additional thrombectomy performed on a subsequent day during the course of thrombolytic therapy. It is assigned once per day.

- Codes 37187 and 37188 include both mechanical and pharmacologic lysis, however continuous infusion therapy (37211-37214) may be reported in conjunction with thrombectomy codes.

- Modifier -50 may be utilized to report bilateral thrombectomy.

Applicable Coding Rules (continued):

- **Single vs. Multiple Vessels.** Codes 37187 and 37188 are assigned one time per extremity.
- **Multiple Lesions.** When there are multiple occlusions treated within the same vessel, only one thrombectomy code is reported for that vessel.
- **"Bridging" Lesions.** At times a "bridging lesion" may be encountered. This is a single lesion that spans two vessels. Only one thrombectomy code should be assigned in these instances.
- **Unsuccessful Thrombectomy or Unacceptable Outcome.** If a thrombectomy of an occlusion is unsuccessful, then the appropriate access and/or selection and imaging only should be coded. On the other hand, if the thrombectomy is performed but with an unacceptable outcome, then the thrombectomy is coded since all the work of the thrombectomy was done. If the thrombectomy has been initiated and it is discontinued, assign the thrombectomy codes with the appropriate modifiers (-53, -73, -74).
- Administration of Heparin, Nitroglycerin, etc., during the procedure is not coded separately.

Venous Stent Codes (37238-37239)

- Stent codes 37238-37239 for venous stent placement are utilized for all venous stent placements regardless of location, except stenting of a dialysis circuit.
  - Code 37238 is reported once per session for the initial stent placed in a vein.
  - Code +37239 is reported for each additional stent placed in a vein.
  - For angioplasty of a dialysis circuit, see codes 36903-36908.
- Stent codes 37238-37239 include angioplasty (pre and post-dilation) when performed in the same vessel. Angioplasty is not coded in addition to these stent codes unless an angioplasty is performed in a separate and distinct vessel from the stent placement.
- **Single vs. Multiple Vessels.** Stent placement codes are assigned one time per vessel treated.

Applicable Coding Rules (continued):

- **Multiple Stents.** When there are multiple stents placed in the same vessel, only one stent placement is reported.

- **Multiple Lesions.** When there are multiple lesions treated within the same vessel, only one stent placement code is reported for that vessel.

- **"Bridging" Lesions.** At times a "bridging lesion" may be encountered. This is a single lesion that spans two vessels. Only one stent code should be assigned in these instances.

- **"Kissing" Stents.** This term is used when stenting is performed on both the left and right common iliac veins with the stents meeting in the distal IVC.

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, venography, roadmapping, and fluoroscopic guidance for the intervention, vessel measurement, and completion /venography.