

# **Interventional Radiology Coding Case Studies**

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## **Lower Extremity Angioplasty**

1. DIRECT, REALTIME ULTRASOUND-GUIDED ANTEGRADE PUNCTURE OF THE LEFT COMMON FEMORAL ARTERY WITH PERMANENT GRAYSCALE IMAGING MADE FOR THE PERMANENT RECORD.
2. FLUOROSCOPIC-GUIDED PERCUTANEOUS PLACEMENT OF A 6-FRENCH SHEATH INTO THE LEFT COMMON FEMORAL ARTERY IN AN ANTEGRADE FASHION AND PERFORMANCE OF LEFT LOWER EXTREMITY ARTERIOGRAM.
3. UNSUCCESSFUL ATTEMPT TO RECANALIZE AN OCCLUDED LEFT ANTERIOR TIBIAL ARTERY.
4. SUCCESSFUL RECANALIZATION OF AN OCCLUDED LEFT PERONEAL ARTERY AND PERFORMANCE OF BALLOON ANGIOPLASTY OF THE LEFT PERONEAL ARTERY OCCLUSIVE STRICTURE WITH A 2.5 mm DIAMETER ANGIOPLASTY BALLOON.
5. BALLOON DILATATION OF AN ATHEROSCLEROTIC STRICTURE IN THE DISTAL LEFT POPT.ITEAL ARTERY PROXIMAL TIBIOPERONEAL TRUNK.
6. BALLOON DILATATION OF AN ATHEROSCLEROTIC STENOSIS OF THE JUNCTION OF THE LEFT SUPERFICIAL FEMORAL ARTERY AND PROXIMAL POPLITEAL ARTERY AT THE ADDUCTOR HIATUS.

**ANESTHESIA:** Local, 2% Lidocaine. Moderate sedation. The following medications were administered for today's exam: LOCM 300-399 MG ML IODINE ML Quantity: 450

**CLINICAL HISTORY:** This patient is a 75-year-old female with ischemic left foot and left 2 toe ulcer who has undergone placement of bilateral common iliac artery stents for significant aortoiliac disease on June 10, 2017. Today's plan is to perform an antegrade puncture of the left common femoral artery and treat a significant stenosis at the junction of the distal left superficial femoral artery and proximal popliteal artery at the adductor hiatus and attempt to recanalize an occluded infrapopliteal artery as all 3 are occluded.

**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 with the required team present. The patient's name, date of birth, procedure, site, equipment, as well as pertinent labs, medications, and allergies we reviewed.

**DISCUSSION:** The patient was placed in the supine position on the interventional table and limited ultrasound exam of the left groin was performed showing a patent left common femoral artery. An appropriate skin entrance site utilizing a combination of fluoroscopy and ultrasound imaging was selected to puncture the left common femoral artery in an antegrade fashion below the inguinal ligament.

Moderate sedation protocol was initiated and the patient was monitored for 2-hours of sedation 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's left groin 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.

Then 2% Lidocaine was infiltrated into the subcutaneous tissue at the selected skin entrance site with a 25-gauge needle and a small incision was made in the skin with a #11 -blade and the tissue gently dissected with a hemostat.

Utilizing direct real-time ultrasound guidance with maintenance of a permanent record and permanent grayscale images, the left common femoral artery was punctured overlying the mid left femoral head in an antegrade fashion utilizing a 21-gauge needle and upon aspiration of arterial blood, hand injection arteriogram was performed confirming position of the needle in the left common femoral artery below the inguinal ligament. Utilizing road map angiographic technique, a 0.018 Nitinol wire was advanced through the needle and manipulated into the proximal left superficial femoral artery utilizing fluoroscopic guidance. The needle was removed over the wire and a short 3/4-French catheter was advanced over the guidewire into the left common femoral artery. The 0.018 guidewire was removed and replaced with a 3 mm J-guidewire which was advanced into the left common femoral artery. The 4-French catheter was removed over the wire and a 6-French vascular sheath then advanced over the guidewire into the left common femoral artery. Utilizing the side tubing of the vascular sheath, Iovue-300 iodinated contrast material was injected through the side tubing of the sheath and left lower extremity arteriogram was performed showing multiple mild stenoses in the left superficial femoral artery and severe stenosis at the adductor hiatus, a significant stenosis at the left PT trunk origin and occlusion of the proximal left anterior and mid posterior tibial arteries and occlusion of the distal third of the peroneal artery.

A 4-French MPA catheter was then advanced over the guidewire into the left popliteal artery with fluoroscopic guidance. The guidewire was removed and utilizing roadmap angiographic technique, a 0.018 Flex-T guidewire was removed over the wire and a 3-French Quick Cross catheter then advanced over the guidewire into the left anterior tibial artery. The wire was advanced into the proximal left anterior tibial artery. This catheter was removed and hand injection arteriogram performed showing multiple collateral arteries emanating from the occluded proximal anterior tibial artery.

We attempted to recanalize the anterior tibial artery, but this was unsuccessful due to the myriad number of collaterals at the point of occlusion. The catheter and guidewire were then retraced into the tibioperoneal trunk and utilizing roadmap angiographic technique, the guidewire was advanced into the peroneal artery. The Quick Cross catheter was then advanced over the guidewire into the proximal peroneal artery and arteriogram was performed showing the point of occlusion of the peroneal artery. Utilizing roadmap angiographic technique, we were able to advance the guidewire across the point of occlusion, advanced the Quick Cross catheter over the guidewire and removed it and performed hand injection arteriogram through the Quick Cross catheter confirming its position in the more distal peroneal artery. An exchange -length Flex-T wire was then advanced through the catheter into the distal peroneal artery and Quick Cross catheter removed over the wire and utilizing roadmap angiographic technique, a 2.5 mm diameter x 40 mm length angioplasty balloon was

advanced over the guidewire and positioned across the point of peroneal artery occlusion and the balloon was inflated slowly, then deflated, then reinflated. The deflated angioplasty balloon was then removed over the guidewire and repeat hand injection arteriogram through the side tubing of the vascular sheath shows very good cosmetic angiographic result at the point of prior occlusion with axial flow through the peroneal artery.

Utilizing roadmap angiographic technique, the balloon was then positioned across the lesion in the left TP trunk and inflated and deflated. Repeat arteriogram still shows residual stenosis, so a 4 mm diameter angioplasty balloon was advanced over the guidewire and positioned across this lesion in the left TP trunk and the balloon was inflated showing a waist on the balloon and the balloon inflated until the waist was effaced. The balloon was then removed over the wire and repeat hand injection arteriogram through the sheath shows very good cosmetic resolution of this structure. Once again utilizing roadmap angiographic technique, a 5 mm diameter x 40 mm angioplasty balloon was advanced over the guidewire and positioned across the severe stricture at the adductor hiatus and the balloon was inflated showing a significant waist and then deflated and removed over the wire.

Repeat left lower extremity arteriogram was then performed showing very good cosmetic result at the site of angioplasty at the adductor hiatus with excellent flow of contrast material across this site and runoff arteriogram to the foot was repeated showing significant improvement in the flow across the angioplastied lesions and maintenance of axial flow across the peroneal artery with much improved flow into the collaterals into the ankle that reconstitute the distal anterior tibial artery into the foot.

The guidewire and sheath were then removed from the puncture site and hemostasis achieved at the site with hand compression. No superficial bleeding or hematoma was noted at the site and a sterile adhesive dressing was applied.

The patient tolerated the procedure without apparent difficulty and there was significant improvement in the Doppler signal from the left anterior tibial artery upon completion of the procedure.

A total of 17 minutes and 43 seconds of fluoroscopic x-ray exposure was utilized to perform the procedure.

**IMPRESSION:** Through an antegrade puncture of the left common femoral artery we attempted to recanalize an occluded left anterior tibial artery unsuccessfully. We were able to recanalize an occluded left peroneal artery and perform balloon dilatation at the point of occlusion utilizing a 2.5 mm diameter x 40 mm length angioplasty balloon with good angiographic result and axial flow identified across the occlusion in the ankle. A significant stenosis involving the origin of the left TP trunk was dilated with a 4 mm diameter angioplasty balloon with very good angiographic cosmetic result. Balloon dilatation of a significant atherosclerotic lesion involving the function of the left distal superficial femoral artery and proximal left popliteal artery at the adductor hiatus with a 5 mm diameter x 40 mm length angioplasty balloon resulting in very good cosmetic angiographic result.

Upon completion of the procedure, the Doppler signal in the left dorsalis pedis is markedly improved. Follow-up non-invasive arterial studies and arterial duplex exam of the left lower extremity is suggested.

# Interventional Radiology Coding Case Studies CPT Codes

Week of April 9, 2018

## Lower Extremity Angioplasty

### Procedure Codes:

- 37224 SFA/Popliteal Angioplasty
- 37228 Peroneal/TP Trunk Angioplasty
- 76937 Ultrasound Guided Vascular Access
- 99152 Initial 15 minutes of moderate sedation
- 99153 x7 Each additional 15 minutes of moderate sedation
- Q9967 x450 LOCM 300-399 MG/ML
- J2250 Injection, midazolam hydrochloride, per 1 mg (Versed)
- J3010 Injection, fentanyl citrate, 0.1 mg

### Diagnosis Codes:

- I70.245 Atherosclerosis of native arteries of left leg with ulceration of other part of foot
- L97.529 Non-pressure chronic ulcer of other part of left foot with unspecified severity

### Comments:

- Code 37224 is assigned for angioplasty of the superficial femoral /popliteal artery for occlusive disease. Catheterization is bundled with code 37224.
- Code 37228 is assigned for angioplasty of the peroneal artery and TP trunk for occlusive disease. Note that the TP trunk is considered part of the peroneal artery, anterior tibial artery or posterior tibial artery when treated in conjunction with any of those vessels. Catheterization is bundled with code 37228.
- Although a left leg angiogram was performed, the diagnosis was known prior to the procedure and the procedure had already been planned. The documentation does not clearly indicate the exam was diagnostic in nature. Medical necessity must be documented to assign diagnostic angiography codes. It would be prudent to review past medical records and/or query the IR physician to determine whether or not this was an initial diagnostic angiogram.

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## Comments (continued):

- Documentation requirements met for ultrasound guidance for vascular access. (+76937)
- 2 hours of moderate conscious sedation noted, billed in 15 minute increments. (99152, 99153)
- Drug amounts were not specified in the report to assign a quantity.
- *Supplies are billed by the facility performing the procedure and should not be assigned for professional fee coding.*

## Applicable Coding Rules:

- 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. (Note: There are some exceptions)
- 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.
- 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. Diagnostic angiography/venography performed during the same session as a therapeutic intervention may be reported separately when:
  - ❖ No prior catheter-based diagnostic angiography/venography study has been performed or if a prior study was performed but it is not available.
  - ❖ The prior diagnostic study is inadequate.
  - ❖ There has been a change in the patient's condition since the diagnostic study.

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## Applicable Coding Guidelines (continued):

- ❖ There is a clinical change during the procedure that requires further evaluation beyond the target area of the intervention.
- ❖ Diagnostic angiography/venography performed at a separate setting from an interventional therapeutic procedure is separately reported.
- **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.

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