

# ZHealth Publishing eLearning Coding Series

## 2019 - CPT Coding for Lower Extremity Arterial Endovascular Revascularization

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Revascularization procedures for occlusive disease of the lower extremity arteries have specific codes to describe the major interventions performed to restore blood flow in the leg. Revascularization includes angioplasty, atherectomy, and vascular stent placement. The same procedure code is utilized whether it is an open or a percutaneous revascularization.

### General Coding Rules

There are coding guidelines that are common to all three lower extremity vascular territories (iliac, femoral/popliteal, and tibial/peroneal). One guideline is the bundling of services into the revascularization procedure codes. Catheter placement, imaging guidance, placement of an embolic protection device, post-intervention follow-up imaging, and closure device placement are bundled into all of the lower extremity endovascular revascularization codes. In addition, there are combination codes to describe multiple revascularization techniques performed in the same vessel/territory.

All the lower extremity endovascular revascularization codes are utilized for both open and percutaneous procedures. There are not separate codes based on the approach in the lower extremities.

Since selective catheter placement in the lower extremity being treated is included in the revascularization code, all catheter placements along the route to that intervention are also included. For example, if the left lower extremity is revascularized from a right femoral artery access site, catheter placement in the right iliac artery, aorta (even if separate imaging of the right iliac or aorta is performed), and in the left leg is included in the revascularization code for the left leg.

Catheter placement for lower extremity thrombolysis at a separate session on the same date of service as an angioplasty/atherectomy or stent placement is separately coded (-XE mod-

ifier will be necessary to demonstrate that this was performed at a separate session).

As with all vascular interventions, if the patient has had a diagnostic angiogram [whether catheter-based or computed tomographic angiography (CTA)] and is referred for the intervention, a diagnostic angiogram is not separately reported. If, however, a diagnostic angiogram is clinically indicated it may be reported separately. Documentation must support the need for a repeat diagnostic angiogram, when performed.

Interventions other than angioplasty, atherectomy, and stent placement are reported separately following the standard guidelines for use of these codes. When treating bypass grafts, the proximal anastomosis, distal anastomosis, and the graft are all considered one vessel for coding purposes. Also, for coding purposes, a "laser angioplasty" (which combines laser atherectomy and balloon angioplasty) is considered an atherectomy.

The iliac, femoral/popliteal, and tibial/peroneal vascular territories each have their own set of codes, and each is reported independently of the others. Each territory will be discussed individually and then together to demonstrate how complex multi-vessel revascularization procedures are reported. Codes 37220-37235 are used for treatment of occlusive disease only. They are not used for other reasons for intervention such as aneurysm repair.

## Iliac Artery Revascularization

The iliac artery vascular system includes the common iliac, internal iliac, and external iliac arteries. The following CPT codes are available to report revascularization in the iliac territory:

- **37220** – Revascularization, endovascular, open or percutaneous, iliac artery, unilateral, initial vessel; with transluminal angioplasty
- **37221** – Revascularization, endovascular, open or percutaneous, iliac artery, unilateral, initial vessel; with transluminal stent placement(s), includes angioplasty within same vessel, when performed
- **37222** – Revascularization, endovascular, open or percutaneous, iliac artery, each additional ipsilateral iliac vessel; with transluminal angioplasty (List separately in addition to code for primary procedure)
- **37223** – Revascularization, endovascular, open or percutaneous, iliac artery, each additional ipsilateral iliac vessel; with transluminal stent placement(s), includes angioplasty within the same vessel, when performed (List separately in addition to code for primary procedure)
- **0238T** – Transluminal peripheral atherectomy, open or percutaneous, including radiological supervision and interpretation; iliac artery, each vessel

The iliac vascular system is unique from the other two lower extremity systems in that there is a separate CPT code for reporting atherectomy (0238T), when performed. Atherectomy is bundled into the femoral/popliteal and tibial/peroneal revascularization codes. While iliac atherectomy has its own code, which is reported in addition to angioplasty or stent placement in an iliac artery, it is reported with a Category III CPT code. Category III CPT codes are for reporting new and emerging technology. Some payers do not reimburse these codes for this reason.

The iliac revascularization codes are differentiated as the initial vessel intervention (37220 and 37221) and each additional vessel intervention (37222 and 37223). The two “initial vessel” codes describe angioplasty alone (37220) and stent placement (with or with or without angioplasty) (37221). The “each additional vessel” codes are also differentiated as angioplasty alone or stent placement (with or without angioplasty). Only one initial vessel code (37220 or

37221) is reported per unilateral iliac territory. The codes are unilateral, so each leg is coded independently. When the procedure is performed on both lower extremities, they are either reported once with a -50 (bilateral) modifier or twice (with anatomical modifiers, or with a -76 or -XS modifier appended to one of them). The Centers for Medicare and Medicaid Services (CMS) has indicated that the bilateral modifier may be appended. The American Medical Association has instructed to report the code twice with a -59 modifier appended. Payment should be the same either way, but CMS is trying to reduce the use of modifier -59. Be sure to check with your specific payer as to its preference.

The initial vessel code should reflect the most complex procedure performed in the territory. Stent with or without angioplasty is more complex than angioplasty alone. When a stent is placed in one of the unilateral iliac arteries, code 37221 is reported as the initial vessel. Code 37220 (initial iliac angioplasty) is not reported if a stent has been placed in any of these vessels on the same side (the angioplasty is reported with code 37222). If a stent is not placed in any of the vessels, and an angioplasty is performed, code 37220 is reported for the angioplasty in the initial vessel of that unilateral iliac territory.

When interventions are performed in more than one iliac vessel, the intervention in one artery is reported with the initial vessel code and the additional vessel code is reported for any additional iliac angioplasty and/or stent placement performed. Only two “additional vessel” codes may be reported per iliac territory, as only three iliac arteries are recognized for coding purposes (common iliac artery, internal iliac artery, and external iliac artery). Any branch of the internal iliac is part of a single code for the entire internal iliac artery distribution. Stent placement supersedes angioplasty in the hierarchy of revascularization coding, so if a stent is placed in any of the three iliac arteries report the stent placement as the initial vessel (37221), regardless of whether that vessel was treated first or last. Note that code 37221 is described as including angioplasty when performed. This means that code 37221 is reported when a stent is placed in a vessel that also is treated with angioplasty or when only a stent is placed and angioplasty is not performed.

In the iliac territory, atherectomy is reported in addition to any other intervention, when performed. CPT Category III code 0238T is utilized to report atherectomy in an iliac artery and is reported per artery treated. It may be reported up to three times in one extremity, as three distinct iliac arteries (the common, external, and internal iliac arteries) are recognized for coding purposes. The iliac atherectomy code does not include catheter placement, so if only an iliac atherectomy is performed, report the catheter placement(s) separately. If any other revascularization is performed in that extremity, in the same or in a different vascular territory, do not report the catheter placement for the atherectomy, as it is bundled into all the lower extremity endovascular revascularization codes.

The interventions are reported per vessel treated. They are not reported per number of lesions treated. If two distinct strictures in one iliac artery are treated with angioplasty, it is coded as one angioplasty. If one stricture is treated with angioplasty and the other with stent placement, it is reported as a stent placement, which includes angioplasty, when performed.

Stents may be used to assist in aortic or iliac stent grafting such as that performed to treat an aneurysm; however, stent placement can only be reported separately when performed outside of the stent graft

deployment zone. Placement of a stent graft for aneurysm, pseudoaneurysm, arteriovenous malformation, or trauma is not reported with the revascularization codes (37221 or 37223). There are distinct codes for reporting stent graft placement for these indications in the aorta and in the iliac arteries. Code 37236 is used for stent graft placement to treat an aneurysm below the iliac artery.

If a contiguous lesion across two of the described iliac arteries is treated with one revascularization, it is reported as one procedure and reported with one code. For example, if a stenosis covers the distal common iliac and the proximal external iliac arteries and one stent is placed bridging the two arteries, it is coded as one iliac stent placement. If the bridging lesion requires two stents to be placed, it would still be considered revascularization of one iliac vessel and reported as one initial revascularization procedure. If one long stent is placed to treat two separate and distinct stenoses, one in the common and the other in the external iliac arteries (non-bridging), only one stent procedure (37221) is billed. If two stents are placed, and these two vessels are treated, an initial iliac stent placement (37221) and an additional iliac stent placement (37223) are coded.

### Example 1

88-year-old male status post right leg bypass; developed an ulceration of his right lateral malleolus and had diminished PVRs. Plan is to perform an angiogram and possible intervention to heal his right leg wound.

The left femoral artery is cannulated with a puncture needle under ultrasound guidance (image is saved). A catheter is placed into the aorta. Aortogram is performed. The aorta and proximal iliac arteries are widely patent. The right external iliac artery has a 90% lesion. A glide catheter is used to select out the right external iliac artery where contrast

is injected and angiography performed. Right leg angiogram demonstrates severe right superficial femoral artery (SFA) stenosis. It also demonstrates a widely patent superficial femoral artery to posterior tibial artery bypass; however, the posterior tibial artery is nearly occluded distal to the bypass. Flow is retrograde up the peroneal artery, which is diseased, and the anterior tibialis artery is occluded and reconstituted at the ankle level. At this point the plan is to stent the right external iliac artery. The right external iliac artery is stented with a 9 x 40 stent followed by full deployment with an 8 mm balloon. There is a good

result. At this point a Mynx closure device is deployed in the left common femoral artery.

**Codes: 75625, 75710-XU, 76937, 37221**

*The patient did not have a previous diagnostic angiogram, so the abdominal aortogram and extremity angiograms are reported separately. An -XU modifier (unusual non-overlapping service) is appended, as there are NCCI edits to prevent blanket reporting of diagnostic angiography at time of intervention. Ultrasound guidance for vascular access is not a bundled component of lower extremity intervention and*

is reported separately. Code 37221 includes selective catheter placement in the right lower extremity arteries, placement of the stent, imag-

ing related to stent placement, and placement of the vascular closure device. The revascularization codes for stent placement include angio-

plasty, when performed. For hospital Medicare billing, device code C1760 would be reported for the Mynx device.

## Example 2

Female presenting for revascularization for significant ischemic rest pain symptoms in right lower extremity.

Through a groin incision, the right common femoral, superficial femoral, and profunda femoris vessels are dissected free. The common femoral is small and very extensively diseased all the way up to and above the inguinal ligament. The inguinal ligament is mobilized extensively for distal exposure to the vessel, and the profunda is dissected free to its first order branches and surrounded with loops as well. Simultaneously an incision is made to the calf and the thigh, and the saphenous vein is identified where it had been marked preoperatively. This turned out to be a very diminutive vessel that after extensive exposure, proved to be completely unfit for use as a conduit for bypass, and therefore it is elected to perform a prosthetic below-knee bypass.

Standard medial approach to the below-knee popliteal artery is performed. This is dissected free and surrounded with vessel loops proximally and distally. This is a fairly soft but quite small vessel. A counterincision is made just above the knee and the above-knee popliteal space is entered. A tunnel is then created in a subsartorial fashion from the groin incision to the above-knee incision, and then in an anatomic fashion to below the knee, and a 6 mm distal flow graft is pulled through.

At this point the endovascular portion is performed. Micropuncture technique is used to access common femoral on the left-hand side. A 0.035 guidewire and a long 23 cm 6 French bright-tip sheath are placed. An oblique view shows good access and a diffusely diseased but patent common femoral. On the right side, a 0.035 guidewire is directed utilizing Seldinger technique into the aorta. The endarterectomy is then performed. Proximal and distal control is achieved with vascular clamps. Longitudinal arteriotomy is created with an 11 blade and widened with the Potts scissors, and a very thick posterior plaque encompassing greater than 70% of the lumen of the entire common femoral is encountered. Common femoral endarterectomy is performed. The patch is truncated and an eversion endarterectomy is performed proximally for a fair distance up

the external femoral artery. Distally the plaque feathers nicely right at the origin of the profunda femoris with the superficial femoral being chronically occluded. A bovine pericardial patch is tailored appropriately. It is threaded onto the guidewire utilizing a single-wall puncture needle and then sewn in place with two running 6-0 Prolene sutures. After appropriate flushing, the clamps are removed, and an 8 French sheath is placed over the guidewire through the patch and up into the external iliac artery with good hemostasis around the patch. At this point the femoral-popliteal bypass is performed. The distal anastomosis is performed first. Proximal and distal control is achieved on the popliteal artery with vessel loops, and a longitudinal arteriotomy is created with an 11 blade and widened with the Potts scissors. The hoods of the distal-flow grafts are then sewn in place with a running 6-0 Prolene suture. Appropriate flushing clamps are removed, showing a nice hemostatic anastomosis with good geometry.

The leg is straightened and attention is turned proximally. Proximal and distal control is achieved on the patch with a vascular clamp and distally with vessel loops. The sheath is removed and the arteriotomy and the patch widened proximally and distally with Potts scissors. The grafts are cut to length, spatulated, and sewn in an end-to-side fashion with 5-0 Prolene. After appropriate flushing, clamps are removed and excellent pulse is noted in all vessels, with a strong Doppler signal in the popliteal artery distally, which mediates almost completely on compression of the graft.

After assurance of hemostasis, the wounds are closed with 3-0 Vicryl and 4-0 Monocryl for the groin and staples for the remaining skin incisions.

At this point diagnostic bilateral iliac angiography is performed. Bilateral iliac stenoses (80%) are identified. Left common femoral cutdown is performed. The left side stent placement is performed first. The patient has 80% restenosis in an old stent. This is pre-dilated with a 5 x 20 balloon and a 6 x 57 stent is chosen. This is deployed from just past the aortic bifurcation right down to the hypogastric and post-dilated with a 7 mm

balloon with nice apposition of the stent to the vessel wall and nice resolution of the in-stent restenosis and proximal distal disease in the common iliac artery. The right side is then addressed in a similar fashion. A 6 x 57 stent is deployed and post-dilated to 7 mm. Repeat arteriogram demonstrates nice apposition of the stent to the vessel wall with brisk flow. The sheath is pulled back down below the inguinal ligament, and retrograde arteriogram shows no evidence of intimal dissection or stenosis related to the endarterectomy, with a widely patent external iliac artery. There is a high-grade stenosis at the origin of the hypogastric, which is known from prior arteriograms. At this point an excellent pulse is noted in the common femoral artery on this side as well. The catheters and guidewires are removed, and the left 6 French sheath is exchanged for a short 6 French

sheath, which is sewn in place with nylon suture and placed to a continuous heparin drip and A-line monitoring transducer.

**Codes: 35656 (bypass graft), 37221-50, 75716-XU (for imaging of the iliac arteries)**

*Code 37221-50 is reported for this bilateral open procedure. The revascularization codes for stent placement include angioplasty (when performed), catheter placement, and imaging guidance. Both the right and left common iliac arteries were stented. A -50 modifier has been appended to code 37221 to indicate it was a bilateral procedure. Discuss the use of modifier -50 here with your payer. Some payers may require 37221/37221-59, 37221/37221-76, or 37221-RT/37221-LT*

### Example 3

Left buttock claudication.

Via the left common femoral artery a sheath and catheter are placed in the proximal abdominal aorta. A midstream aortogram demonstrates a single renal artery to the right kidney. There is a stenosis at the origin of the right main renal artery. First order selective arteriogram of the right main renal artery utilizing a catheter demonstrates that the stenosis extends over a 5 mm distance and represents a 30 to 40% narrowing. There is complete occlusion of the left main renal artery beginning just beyond its origin (as seen from the aortogram).

There is moderate atherosclerotic disease of the infrarenal portion of the abdominal aorta. There is a prominent inferior mesenteric artery (IMA) with a prominent meandering artery noted, suggesting a stenosis of the superior mesenteric artery (SMA).

The right common iliac, external

iliac, and hypogastric arteries are widely patent.

A selective arteriogram of the left lower extremity from a sheath injection demonstrates a severe stenosis at the origin of the left common iliac artery with a short focal occlusion. The common iliac artery is small in caliber beyond the stenosis. The left external iliac and hypogastric arteries are patent. The left common femoral, femoral profunda, and superficial femoral arteries are widely patent. The popliteal artery is widely patent as well. The anterior tibial artery is a good caliber vessel with a good caliber dorsalis pedis artery seen in the foot. The posterior tibial/peroneal trunk is short in caliber. The peroneal artery is widely patent. The posterior tibial artery is a good caliber vessel and is seen in the plantar surface of the foot.

The short occlusion in the common iliac artery is predilated with a 6 mm balloon catheter. 38 mm

followed by 28 mm in length stents are placed and deployed on 8 mm balloon catheters. Post angioplasty and stenting the left common iliac artery is now widely patent.

**Codes: 36251, 75710-XU, 37221**

*The placement of a catheter into, and the diagnostic imaging of, the right renal artery (36251) is reported separately. The catheter placements in the leg being revascularized are bundled into the lower extremity revascularization code 37221. The abdominal aortogram is included in the selective renal imaging and is not reported separately. The left leg arteriogram (75710-XU) is reported separately, as it is an initial diagnostic study. Modifier -XU is appended to indicate this fact. All interventions are performed in the common iliac artery. Angioplasty and stent placement were performed, so the code for initial iliac stent placement with or without angioplasty is reported (37221).*

## Example 4

Elevated velocities in the right external iliac artery noted on non-invasive surveillance of the lower extremities. Via the left common femoral artery a catheter is placed in the proximal abdominal aorta. A midstream aortogram demonstrates a moderate stenosis of the right main renal artery. This lesion extends over a 5 mm distance and represents a 40% narrowing. There is a high-grade stenosis of the left main renal artery. This lesion extends over a centimeter distance and represents a 70 to 80% narrowing. There is marked atherosclerotic disease of the infrarenal portion of the abdominal aorta.

The catheter is repositioned in the distal abdominal aorta, and a rotational arteriogram of the pelvis demonstrates a stenosis in the right common iliac artery with an ulcerated plaque along its posterior medial wall. This lesion extends over a 2 cm distance and represents a 90% narrowing. The right hypogastric artery is patent. The previously stented segment of the right external iliac artery demonstrates a separate lesion with diffuse intimal hyperplasia with an approximate 60% stenosis in the mid to distal aspect of the stent.

A catheter is placed over the bifurcation into the right external iliac artery, and a selective arteriogram of the right lower extremity demonstrates that the right common femoral and femoral profunda vessels are patent. The native superficial femoral artery is occluded. The right femoral to below-the-knee popliteal bypass graft is widely patent. The distal anastomosis is widely patent as well to the distal

popliteal artery. The anterior tibial artery is an excellent caliber vessel with a good caliber dorsalis pedis artery seen in the foot. The posterior tibial/peroneal trunk and peroneal arteries are patent. The posterior tibial artery is a small caliber vessel and is seen into the plantar surface of the foot.

The left common iliac artery demonstrates mild atherosclerotic disease. The left hypogastric artery is patent. The left external iliac artery demonstrates 75% stenosis due to intimal hyperplasia within the proximal to mid portion of the previously placed external iliac artery stent. The left common femoral artery is small in caliber but patent. The left femoral profunda vessel is widely patent.

With a catheter in the left external iliac artery, a selective arteriogram of the left lower extremity demonstrates that the femoral profunda artery is patent. The native superficial femoral artery is occluded at its origin. The left femoral to above-knee popliteal bypass graft is widely patent. Just below the distal anastomosis there is a high-grade stenosis of the popliteal artery which extends over a 2 cm distance and represents a 60-70% narrowing. The popliteal artery improves 4 cm above the knee joint. The anterior tibial artery is a good caliber vessel with a good caliber dorsalis pedis artery seen in the foot. The posterior tibial/peroneal trunk and peroneal arteries are widely patent. The posterior tibial artery is seen to cross the level of the ankle joint into the plantar surface of the foot.

A sheath is placed over the bifurcation of the right external iliac artery. The previously stented segment of the right external iliac artery is dilated with a 6 mm x 60 mm cutting balloon catheter. There is a residual stenosis along the distal margin of the stent in the distal external iliac artery, therefore a 38 mm length stent is placed and deployed on a 6 mm balloon catheter with good results. The sheath is pulled back into the common iliac artery and the right common iliac artery stenosis is stented with a 38 mm stent deployed on a 7 mm balloon catheter with excellent results as well.

The sheath is retracted into the ipsilateral left common femoral artery. The left external iliac artery is then dilated with a 7 mm balloon catheter with marked improvement.

**Codes: 37220-XS, 37221, 37223, 75625, 75716-XU**

*The initial diagnostic angiography (75625, 75716-XU) is reported separately, as it is a truly diagnostic study. The non-invasive vascular study documented an abnormal finding but cannot definitively identify the specific site of disease, so angiography is a necessary adjunct. The following revascularization procedures were performed: angioplasty of the right external iliac artery followed by stent placement, stent placement in the right common iliac artery, and angioplasty of the left external iliac artery. The iliac revascularization codes are reported per distinct artery treated and are unilateral. Two iliac arteries were revascularized on the right side, the external iliac and the common*

iliac arteries. The most complex intervention is reported with the initial vessel code when more than one vessel in a vascular territory is treated. In this case, stent placement (with or without angioplasty) was performed in both, so the initial code for stent placement is reported (37221). The primary stent of the separate common iliac artery is reported as an additional vessel stent placement (37223). The left iliac artery is coded independently. An initial vessel iliac angioplasty is reported (37220-XS). Modifier -XS must be appended to indicate it is a different structure (the other leg), otherwise NCCI edits would bundle it into the initial vessel stent placement on the right. Anatomical modifiers (-LT, -RT) may be more appropriate, as they are more specific.

## Femoral/Popliteal Artery Revascularization

The revascularization codes for the femoral/popliteal arteries vary significantly from those utilized for iliac artery revascularization. In the iliac artery zone, there is a separate code for reporting atherectomy. In the femoral/popliteal zone, there are codes that combine the atherectomy with the stent placement. Angioplasty is always bundled with stent placement and is also bundled into atherectomy in the femoral/popliteal territory. The following CPT codes are available to report revascularization for occlusive disease in the femoral/popliteal territory:

- **37224** – Revascularization, endovascular, open or percutaneous, femoral/popliteal artery(s), unilateral; with transluminal angioplasty
- **37225** – Revascularization, endovascular, open or percutaneous, femoral/popliteal artery(s), unilateral; with atherectomy, includes angioplasty within the same vessel, when performed
- **37226** – Revascularization, endovascular, open or percutaneous, femoral/popliteal artery(s), unilateral; with transluminal stent placement(s), includes angioplasty within the same vessel, when performed
- **37227** – Revascularization, endovascular, open or percutaneous, femoral/popliteal artery(s), unilateral; with transluminal stent placement(s) and atherectomy, includes angioplasty within the same vessel, when performed

There is one code for treatment of non-occlusive disease (e.g., popliteal aneurysm, AVM, AV fistula) with a stent or stent graft:

- **37236** – Transcatheter placement of an intravascular stent(s) (except lower extremity artery(s) for occlusive disease, cervical carotid, extracranial vertebral or intrathoracic carotid, intracranial, or coronary), open or percutaneous, including radiological supervision and interpretation and including all angioplasty within the same vessel, when performed; initial artery

In the femoral/popliteal territory, the interventions are not designated as initial and additional vessel. The entire femoral/popliteal territory is considered one vessel for coding. Only one of codes 37224-37227 may be reported per extremity. Similar to iliac revascularization, the codes are unilateral, so each leg is coded independently.

The highest level intervention performed is always the one reported. All interventions performed in the four arteries in the femoral/popliteal territory are combined as if done in one vessel. There may be different interventions performed in different unilateral femoral/popliteal arteries, but they are combined to determine which code to report. The hierarchy, from highest to lowest (with angioplasty always included), is:

- 37227 – Stent with atherectomy
- 37225 – Atherectomy
- 37226 – Stent placement
- 37224 – Angioplasty (without atherectomy or stent placement)

### Example 5

56-year-old male status post right SFA stenting who has worsening pain in his right leg and was found to have, on ultrasound, an in-stent stenosis of severe degree. He also has left leg rest pain. The plan is to perform a diagnostic bilateral leg angiogram with possible intervention of his right leg stents to salvage them.

From a left common femoral artery approach, using ultrasound guidance (showing patent access artery, needle access along with permanent recorded image), a catheter is placed into the abdominal aorta. An aortogram is performed. The catheter is moved to the aortic bifurcation, and two oblique views of the iliac arteries are performed, showing an infrarenal aortic aneurysm as well as very mild diffuse iliac stenoses bilaterally.

The right external iliac artery is selected. Right leg angiogram demonstrates SFA stents with 80-90% stenosis and 3-vessel run-off to the foot below the stents. A 6 mm balloon is then advanced over a wire and used to angioplasty the SFA stents. Follow-up angiography demonstrates resolution of the stenosis and the run-off is unchanged.

### Example 6

71-year-old female with a known history of stenosis near the popliteal artery in the right leg developed acute on-set of rest pain. Plan is to perform the angiogram with possible intervention to relieve her rest pain symptoms.

The left common femoral artery is cannulated with micropuncture needle. A 5 French sheath is then placed into this artery, followed by an Omni flush catheter into the aorta. Aortogram as well as views of the iliac arteries are performed, showing a widely patent aorta as well as widely patent common iliac stents, which were kissing stents. Through the Omni flush catheter, a guidewire is passed and the right external iliac artery is selected with the catheter. Right leg angiogram

demonstrates a patent common femoral artery, mildly diseased right superficial femoral artery with an occlusion at the knee level of the popliteal artery, and reconstitution of three tibial vessels with a high takeoff of the anterior tibialis artery. Multiple attempts are made to come up and over the bifurcation with a sheath; however, this is not possible secondary to the presence of kissing stents, so local anesthetic is infiltrated into the right common femoral area. The right common femoral artery is cannulated with micropuncture needle in an antegrade fashion. Wire access is achieved. The popliteal is crossed and the occlusion is balloon angioplastied with a 3 mm balloon followed by a 4 mm balloon. There is a very small dissection, but this

At this point, the 5 French sheath is removed and replaced by a short 6 French sheath in the left groin. Left leg angiogram is performed through that sheath, demonstrating moderate to severe stenosis of the left SFA and 3-vessel run-off to the foot with the posterior tibial artery being the dominant vessel. Mynx closure device is then deployed.

**Codes: 75625, 75716-XU, 76937, 37224**

*The patient did not have a previous diagnostic angiogram, so the extremity angiogram is reported separately. An -XU modifier is appended to code 75716, as there are NCCI edits to prevent blanket reporting of diagnostic lower extremity angiography at time of intervention. Ultrasound guidance for vascular access is not a bundled component and is reported separately. The pre-existing stent in the right superficial femoral artery was treated with angioplasty. This is reported with code 37224, initial vessel. Code 37224 includes the catheter placement, femoral/popliteal angioplasty, completion angiography, and placement of the Mynx device. For hospital Medicare billing, code C1760 would be reported for the Mynx device.*

does not appear to be flow limiting. There is still residual 40% stenosis in this area. At this point, with the presence of the high takeoff of the anterior tibial vessel, it does not appear prudent to place a covered stent in this area (which will make further bypass more difficult). The foot is warm and viable. There is flow through this area. The left femoral puncture site is closed with a Mynx device. Pressure is held on the right side.

**Codes: 36246-XU, 75625, 75710-XU, 37224**

*The patient did not have a previous diagnostic angiogram, so the abdominal aortogram and extremity angiograms are reported separately. An -XU modifier is appended*

to the diagnostic angiography code (75710), as there are NCCI edits to prevent blanket reporting of diagnostic lower extremity angiography at time of intervention. The catheter placement for angiography was performed from the left groin access. The intervention was per-

formed through the right groin access. Catheter placement into the right external iliac artery from the left femoral artery access is not included in the revascularization and is reported separately. It is a second order catheter placement below the diaphragm, which is reported

with code 36246. An -XU modifier is appended to indicate it is a distinct catheter placement from that utilized for the revascularization. Angioplasty was performed in the popliteal artery, which is reported with code 37224.

### Example 7

78-year-old male presents with a nonhealing ulceration of his right foot. PVR showed diminished flow. The plan is to perform an angiogram with possible intervention to salvage his right foot and allow it to heal.

From a left common femoral approach, a catheter is placed in the abdominal aorta. An aortogram is performed including two different views of the iliac artery. This shows the iliac arteries are widely patent. There is ectasia of bilateral common iliac arteries. The right external iliac artery is selected and a right leg angiogram performed. It demonstrates significant 80% stenosis of the right SFA with run-off to the anterior tibial and peroneal arteries to the foot. At this point, a 6 French destination sheath is placed up and over the bifurcation with the tip in the superficial femoral artery in the right side. Access is gained across the lesion using a glide catheter and a guidewire. This is then changed out to a Rosen wire. The lesion is treated with Jetstream G3 atherectomy, followed by angioplasty with

a 6 mm balloon and then placement of two stents, a 7 x 150 mm and a 7 x 12 mm. These are re-angioplastied with a 6 mm balloon and with a good result. Follow-up angiography demonstrates preserved run-off and no residual stenosis.

#### Codes: 75710-XU, 37227

*The patient did not have a previous diagnostic angiogram, so the extremity angiogram is reported separately. There are no findings of the abdominal aorta, so the aortogram S&I is not coded. An -XU modifier is appended to 75710, as there are NCCI edits to prevent blanket reporting of diagnostic angiography at time of intervention. The intervention performed included angioplasty, atherectomy, stent placement, and post stent placement angioplasty of the stent. This is reported with code 37227, initial vessel. Code 37227 includes both the stent placement and the atherectomy, as well as the angioplasty, catheter placement, and completion angiography.*

### Example 8

Patient is a woman who presents with disabling claudication and heavily calcified exophytic stenoses in her right superficial femoral and popliteal artery seen on recent angiogram and is taken to the cath lab for intervention.

Micropuncture technique is used to access the common femoral artery on the left, and guidewire and sheath are placed. A catheter is directed over the bifurcation. An oblique view demonstrates proximal lesions, one right at the orifice of the SFA and another about 10 cm distally, and there is a third heavily calcified vessel 30 cm dis-

tally, all involving the SFA. Separate 80% proximal profunda femoral artery and 90% mid popliteal artery stenoses are also identified. All lesions are crossed and then are sequentially treated with an atherectomy device with marked improvement. They are angioplastied to 4 mmHg with a balloon and repeat arteriogram shows very nice result. Run-off arteriogram confirms evidence of some significant disease in the mid portion of the above-knee popliteal artery, and this is similarly treated with the atherectomy device, and again angioplasty to 4 mm with very nice result. A completion arteriogram

demonstrates good flow through all the areas. There is evidence of low flow distally in the tibials, and the patient receives 200 mcg nitro intra-arterially. A repeat arteriogram shows marked improved flow. There is a cut-off in the distal peroneal but extensive collateralization into the foot. The catheters and guidewires are removed and pressure held for hemostasis.

#### Code: 37225

*Diagnostic angiography was previously performed, so it is not reported separately. The patient presented for the intervention. The interven-*

tion performed included angioplasty and atherectomy in the superficial femoral artery in three separate locations. In addition the popliteal artery was treated with angioplasty and atherectomy, as was the profunda femoral. These are all part of the unilateral femoral/popliteal territory, so only one code is reported. Code 37225 describes atherectomy with or without angioplasty. This same code would be reported if the angioplasty had not been performed.

## Tibial/Peroneal Artery Revascularization

The revascularization codes for the tibial/peroneal arteries are a combination of those utilized for iliac and femoral/popliteal artery revascularization. Similar to the iliac artery zone, revascularization codes are reported per vessel with three separately identifiable vessels. Similar to the femoral/popliteal revascularization codes, there are codes that combine atherectomy with stent placement. Angioplasty remains bundled with stent placement and atherectomy, if performed. The following CPT codes are available to report revascularization for occlusive disease in the tibial/peroneal territory:

- **37228** – Revascularization, endovascular, open or percutaneous, tibial/peroneal artery, unilateral, initial vessel; with transluminal angioplasty
- **37229** – Revascularization, endovascular, open or percutaneous, tibial/peroneal artery, unilateral, initial vessel; with atherectomy, includes angioplasty within the same vessel, when performed
- **37230** – Revascularization, endovascular, open or percutaneous, tibial/peroneal artery, unilateral, initial vessel; with transluminal stent placement(s), includes angioplasty within the same vessel, when performed
- **37231** – Revascularization, endovascular, open or percutaneous, tibial/peroneal artery, unilateral, initial vessel; with transluminal stent placement(s) and atherectomy, includes angioplasty within the same vessel, when performed
- **37232** – Revascularization, endovascular, open or percutaneous, tibial/peroneal artery, unilateral, each additional vessel; with transluminal angioplasty (List separately in addition to code for primary procedure)
- **37233** – Revascularization, endovascular, open or percutaneous, tibial/peroneal artery, unilateral, each additional vessel; with atherectomy, includes angioplasty within the same vessel, when performed (List separately in addition to code for primary procedure)
- **37234** – Revascularization, endovascular, open or percutaneous, tibial/peroneal artery, unilateral,

- each additional vessel; with transluminal stent placement(s), includes angioplasty within the same vessel, when performed (List separately in addition to code for primary procedure)
- **37235** – Revascularization, endovascular, open or percutaneous, tibial/peroneal artery, unilateral, each additional vessel; with transluminal stent placement(s) and atherectomy, includes angioplasty within the same vessel, when performed (List separately in addition to code for primary procedure)

As in the femoral-popliteal territory, stent placement for non-occlusive disease is reported with codes 37236 and 37237 (arterial stent placement, initial and additional vessel respectively). The tibial/peroneal revascularization codes are comprised of codes for initial vessel procedures and additional vessel procedures. Only one tibial/peroneal initial vessel code is reported per extremity for codes 37228-37235. As in the other territories, angioplasty is always bundled into any higher level intervention. There are codes for angioplasty only (37228 – initial vessel, 37232 – additional vessel), atherectomy (37229 – initial vessel, 37233 – additional vessel), stent placement (37230 – initial vessel, 37234 – additional vessel), and stent placement with atherectomy (37231 – initial vessel, 37235 – additional vessel). Only one of these codes is reported per vessel treated. The initial vessel code reported is the one describing the most complex intervention performed. The hierarchy, from highest to lowest (with angioplasty always included), is:

- 37231 – Stent with atherectomy*
- 37229 – Atherectomy*
- 37230 – Stent placement*
- 37228 – Angioplasty only (without atherectomy or stent placement)*
- 37235 – Stent with atherectomy, each additional vessel*
- 37233 – Atherectomy, each additional vessel*
- 37234 – Stent placement, each additional vessel*
- 37232 – Angioplasty only (without atherectomy or stent placement), each additional vessel*

There are four tibial/peroneal vessels recognized for revascularization. This includes the tibial/peroneal trunk, the posterior tibial artery, the anterior tibial artery, and the peroneal artery. The tibial/peroneal trunk is included in any distal artery revascularization procedure reported. For example, if revascularization is performed in both the tibial/peroneal trunk and the posterior tibial artery, only one revascularization procedure is performed for coding purposes. Similar to coding for femoral/popliteal artery revascularization, the two arteries are considered one vessel for coding purposes. The interventions in the two are combined to select the most complete code to describe them as if they were one vessel.

While the tibial/peroneal trunk is included in any distal intervention, this does not include the anterior tibial artery. The anterior tibial artery originates above the

tibial/peroneal trunk (it is not distal), so the two are considered separate vessels when coding revascularization procedures in both. (An anterior tibial and a tibial/peroneal trunk angioplasty can be coded as an initial and an additional tibial/peroneal angioplasty.)

Always report the “initial” vessel code for the most complex revascularization and the “each additional” for other interventions. Only one code from the 37228-37231 series of the *CPT Codebook* may be reported per leg. These codes are unilateral, so report revascularization in the contralateral extremity separately, reporting one of the initial vessel codes, followed by additional vessel codes for revascularization in additional contralateral tibial/peroneal arteries.

The rules can best be demonstrated using the following case examples.

### Example 9

47-year-old male who is status post a right below-knee popliteal to dorsalis pedis artery bypass with reversed ipsilateral lesser saphenous vein. The bypass has failed. He has had his foot debrided several times, and he is at a point where the foot may not be salvageable from a debridement standpoint. However, he wants something done to try to salvage his right foot despite the circumstances. The plan is to do a right leg angiogram and be relatively aggressive with angioplasty to try and increase flow to the right foot.

From a left common femoral artery access a catheter is placed in the right iliac, and iliac angiogram is performed, showing no significant stenosis in the iliac artery. The right external iliac is selected and a right leg angiogram performed, which demonstrates widely patent femoral and popliteal arteries with occlusion of all the tibial vessels at the mid-calf level and reconstitution of an anterior tibialis artery distally, which is moderately diseased. At this point, the patient is systemically heparinized. A 6 French destination sheath is placed up and over the bifurcation into the right superficial femoral artery. A glide catheter as well as a glide wire are used to select out the right anterior tibial artery and used to cross his chronic occlusion and re-enter distally. The patient is balloon angioplastied with a 2.5 mm balloon followed by a 3 mm balloon with a relatively good result with a filling defect proximally in the anterior tibial artery; flow was much more brisk after a 3 mm drug-eluting stent was placed.

All catheters and wires are removed. Angiography of the left groin shows he has a high bifurcation of his femoral artery, and the sheath is in the proximal superficial femoral artery. The heparin is reversed with protamine. Pressure is held at the access site.

#### Codes: 75710-XU, 37230

*No previous diagnostic angiogram had been performed, so the extremity angiogram (75710) is reported separately. An -XU modifier is appended to accommodate NCCI edits between diagnostic and interventional procedures. Two angioplasties were performed across the same lesion in the anterior tibial artery along with a stent. This is one revascularization reported with code 37230. All catheter placements, medication administration, follow-up angiography, and angiography to determine whether a closure device may be utilized are bundled into code 37230.*

### Example 10

Stenosis in the left popliteal artery demonstrated on computed tomographic angiography (CTA). Also seen is anterior tibial occlusion and severe tibial/peroneal trunk stenosis.

Via the right common femoral artery a sheath and catheter are placed in the distal abdominal aorta. A pelvic arteriogram demonstrates the previously placed stent in the right common iliac artery to be widely patent with an ulcerated plaque along its medial wall. The right external iliac artery is widely patent. The right common femoral, femoral profunda, and proximal bypass graft are widely patent.

A catheter is placed over the bifurcation into the left distal external iliac artery. A selective arteriogram demonstrates that the left common femoral and femoral profunda vessels are widely patent. The superficial femoral artery is occluded at its origin. The left femoral to above-knee popliteal artery bypass graft is widely patent. There is a severe stenosis of the popliteal artery beginning at the level of the distal anastomosis and extending over a 2 cm distance that matches the CTA. The popliteal artery below this level improves in caliber. The anterior tibial artery is occluded with a good caliber dorsalis pedis artery seen in the foot. The tibial/peroneal trunk is 90% stenosed, and the peroneal artery is widely patent. Posterior tibial artery is a small caliber vessel but is seen into the plantar surface of the foot.

### Example 11

Bilateral lower extremity claudication greater on the left than right side.

Via the right common femoral artery a sheath and catheter are placed in the proximal abdominal aorta. A mid-stream aortogram demonstrates a single renal artery to the right kidney which is widely patent. There are two renal arteries to the left kidney both of which are widely patent. There is moderate atherosclerotic disease of the infrarenal portion of the abdominal aorta.

The catheter is repositioned in the abdominal aorta and a rotational arteriogram of the pelvis demonstrates mild atherosclerotic disease of the proximal centimeter of the common iliac artery. The right hypogastric artery is patent. The right external iliac and femoral arteries are widely patent as well.

With a catheter in the right external iliac artery a unilateral arteriogram of the right lower extremity demonstrates that the right common femoral and femoral profunda vessels are widely patent. The superficial femoral artery demonstrates diffuse atherosclerotic disease and is relatively small in caliber. There is a slight stenosis at the exit of Hunter's canal, which extends over a centimeter distance and represents a 30% narrowing. There is then a high-grade stenosis in the popliteal artery beginning 3 cm above the knee joint. This

A sheath is placed over the bifurcation into the proximal portion of the fem-pop bypass graft. The stenotic lesion in the mid popliteal artery is crossed with a 0.14 guidewire. A 2.0 Spectranetic laser probe is used to cross the area of the distal anastomosis into the mid-portion of the native popliteal artery. There is moderate improvement. This lesion is then dilated with a 5 mm x 40 mm balloon catheter with excellent results. The laser is also used in the anterior tibial and tibial/peroneal trunk vessels. A stent is placed in the anterior tibial artery stenosis.

**Codes: 37225, 37231, 37233**

*The patient presented for the intervention with a diagnosis from a CTA. There was no change in the patient status or any other clinical reason documented for repeating the diagnostic angiography, so the angiography is not reported separately. The mid popliteal artery was revascularized. This is part of the femoral/popliteal territory. Treatment with a laser is coded as an atherectomy. Code 37225 describes an atherectomy of the femoral/popliteal territory with or without angioplasty, so the angioplasty is included. The anterior tibial and the tibial/peroneal trunk are separate vessels. The more complex atherectomy with stent is reported with "initial intervention" code 37231, and the less complex atherectomy is reported with "additional vessel intervention" code 37233.*

lesion extends over a 1 cm distance and represents a greater than 90% stenosis. The distal popliteal artery below this level is a small caliber vessel. There is an anterior tibial artery that is patent and is visualized into the dorsum of the foot. The posterior tibial/peroneal trunk as well as peroneal arteries are widely patent. The posterior tibial artery is a small caliber vessel and is seen into the plantar surface of the foot.

The left common iliac artery demonstrates mild atherosclerotic disease. The left hypogastric and external iliac arteries are widely patent. A catheter is placed over the bifurcation into the left external iliac artery, and a selective arteriogram of the left lower extremity demonstrates that the left common femoral and femoral profunda vessels are widely patent. The superficial femoral artery demonstrates mild atherosclerotic disease involving the proximal 4 cm of the superficial femoral artery. The caliber of the vessel then improves with a stenosis in the distal superficial femoral artery extending over a 4 cm distance to the level of the exit of Hunter's canal. This lesion represents a 90% narrowing. There is then a second stenotic lesion in the mid portion of the popliteal artery just behind the knee prosthesis. This lesion extends over a few millimeters distance and represents a 50 to 60% narrowing. Moderate atherosclerotic disease of the distal popliteal artery where there is a stenosis extending over a centimeter distance and again represents a 50% narrowing. The anterior tibial artery is 90% stenosed with a 90% stenosis in the dorsalis pedis artery in the foot. The posterior tibial/peroneal trunk and peroneal arteries are occluded.

A sheath is placed over the bifurcation into the left common femoral artery. A 0.14 guidewire is utilized to cross these multiple lesions in the superficial femoral as well as popliteal artery. A 2.0 mm Spectranetic laser probe is used to cross the stenosis in the proximal as well as distal superficial femoral as well as the mid to distal popliteal arteries. The popliteal artery is post-dilated with a 4 mm x 80 mm balloon catheter. There is overall improvement in the caliber of the vessel, but there is persistent subintimal dissection in the proximal superficial femoral artery but no limitation of flow. In addition, at the level of the distal superficial femoral artery an intimal dissection is detected with significant limitation of blood flow. Due to subintimal dissection and slow flow, a 6 mm x 150 and 6 mm x 120 mm stent are placed from just below the level of the knee joint across the stenosis in the distal superficial artery. The entire length of the lesion is post-dilated with a 4 mm balloon catheter with marked improvement in the flow through this area. The laser is used to treat both the anterior tibial and the dorsalis pedis arteries. Run-off via the anterior tibial and dorsalis pedis arteries is demonstrated with improved flow into the foot.

**Codes: 37227, 37229, 75625, 75716-XU**

*The extremity diagnostic angiography is reported separately with modifier -XU appended. The physician documented performance of an atherectomy (laser treatment) in the superficial femoral, popliteal, anterior tibial, and dorsalis pedis arteries. This was followed by angioplasty in the popliteal artery. Due to a dissection a stent was placed in the superficial femoral artery. This was followed by angioplasty of the superficial femoral artery. The popliteal and femoral arteries are all in the femoral/popliteal vascular territory. Only one femoral/popliteal territory revascularization code may be reported in one extremity. All procedures must be combined to determine the complexity of the interventions. Atherectomy, angioplasty, and stent placement were performed (37227). Angioplasty is always bundled into the other interventions. The highest complexity revascularization procedure was performed: stent placement and atherectomy. For the infrapopliteal intervention, the dorsalis pedis artery is a distal continuation of the anterior tibial, so atherectomy with laser in these two vessels is coded as a single anterior tibial procedure (37229).*

## Revascularization in Multiple Territories

Frequently patients with atherosclerosis will have it in multiple vessels that are in different vascular territories. When multiple territories are treated, each territory is coded independently. There will be an initial vessel revascularization code for each territory treated.

## Example 12

Patient with peripheral artery disease with ulceration. From a right femoral artery access a catheter is placed over the aortic bifurcation, and the left femoral artery is catheterized. Selective angiography is performed. The left deep and proximal superficial femoral arteries are patent, without significant disease. There is occlusion of the left popliteal artery just above the knee and diffuse disease of the distal left superficial femoral artery. There is reconstitution of the popliteal artery behind the knee. It is a somewhat diseased vessel. Below the knee, there is severe stenosis of the tibial/peroneal trunk and proximal peroneal artery in several areas. Distally, the peroneal artery is diffusely diseased, but without significant focal stenosis. There is reconstitution of the left posterior tibial artery at the ankle, which was a diseased vessel, but appears to be the best run-off to the foot. The dorsalis pedis artery also reconstitutes distally, but this is significantly weaker as a run-off vessel.

Due to the above findings, decision is made to perform an intervention. Using a sheath and guidewire, a 4 mm balloon is passed across the stenotic lesion in the superficial femoral/popliteal artery. It is inflated until there is resolution of the stenotic lesion. Completion angiography demonstrates significant residual stenosis and dissection, requiring stent placement. A 5 mm stent is passed across the stenotic lesion and deployed. This is post-dilated with a 5 mm balloon. Completion angiography demonstrates an excellent technical result. The tibial/peroneal trunk/peroneal artery is dilated with a 3.5 mm balloon, and comple-

tion angiography demonstrates an excellent technical result. Run-off is intact, with no evidence of embolization. Pullback angiography in the pelvis shows an unexpected 80% external iliac stenosis. This is treated with a covered stent. The wire is removed, and the puncture site is closed with a 6 French Perclose ProGlide device.

**Codes: 75710-XU, 37221, 37226, 37228**

*No previous diagnostic angiogram had been performed, so the extremity angiogram (75710) is reported separately. An -XU modifier is appended to accommodate NCCI edits between diagnostic and interventional procedures. Three vascular territories were treated: the iliac, the femoral/popliteal, and the tibial/peroneal. They are each coded separately. The stricture in the SFA was treated with angioplasty and then a stent was placed. The stent placement (with or without angioplasty) supersedes and includes the angioplasty, so code 37226 is reported for all work performed in the SFA. The tibial/peroneal trunk and peroneal artery are considered one vessel for coding purposes. It is a distinct vascular territory from the SFA, so it is reported separately. An angioplasty was performed, which is reported with code 37228, angioplasty in initial tibial/peroneal vessel. The external iliac is treated with a stent alone (37221) and is the initial iliac vessel for intervention. All catheter placements and placement of the Perclose closure device are bundled. For hospital billing, code C1760 would be reported for the Perclose device.*

## Example 13

Bilateral lower extremity claudication greater on the right than left side.

Via the left common femoral artery a sheath and catheter are placed in the distal abdominal aorta. A rotational arteriogram of the pelvis demonstrates that the right common iliac and hypogastric arteries are widely patent. There is severe atherosclerotic disease of the mid to distal aspect of the external iliac artery extending to the level of the inguinal ligament. There are two eccentric plaques in the mid and distal external iliac artery, which extend over a 2 cm distance and represent greater than 90% stenosis. A catheter is placed over the bifurcation into the proximal external iliac artery, and a selective arteriogram of the right lower extremity demonstrates that the right common femoral and profunda vessels are patent. The superficial femoral artery demonstrates two focal high-grade stenoses, one in the mid and one in the distal aspect of the superficial femoral artery. The proximal lesion represents a 50% stenosis, and the more distal lesion represents a 60 to 70% narrowing. There are two focal high-grade stenoses in the proximal to mid portion of the popliteal artery. Both of these lesions extend over a centimeter distance and represent 70 to 80% narrowing. The popliteal artery improves in caliber 5 cm above the knee joint. The anterior tibial artery is a small caliber vessel and

is seen into the dorsum of the foot. The posterior tibial/peroneal trunk and peroneal arteries are patent. The posterior tibial artery is seen to cross the level of the ankle joint into the plantar surface of the foot.

The left common iliac artery and hypogastric arteries are patent. The left external iliac artery demonstrates severe atherosclerotic disease throughout the course of this vessel with a severe stenosis in the mid and distal aspect of the external iliac artery. This extends to the level of the inguinal ligament. With a catheter in the external iliac artery, an arteriogram of the left lower extremity demonstrates that the common femoral artery has mild atherosclerotic disease. The femoral profunda vessel is patent. The superficial femoral artery demonstrates mild atherosclerotic disease in its proximal aspect with a mild stenosis of the distal superficial femoral artery. There are then two moderate stenoses in the proximal popliteal artery just beyond the exit of Hunter's canal. These two lesions extend over a centimeter distance and represent 70% narrowing. There is then a third lesion in the mid popliteal artery that extends over a centimeter distance and represents a 50% narrowing. The distal popliteal artery improves in caliber. The anterior tibial artery is a good caliber vessel with a dorsalis pedis artery seen in the foot. The posterior tibial/peroneal trunk and peroneal arteries are patent. The posterior tibial artery is seen to cross the level of the ankle joint into the plantar surface of the foot.

A sheath is placed over the bifurcation into the right common iliac artery. The stenoses in the right external iliac artery are crossed with a 0.014 guidewire. They are dilated with a 6 mm x 80 mm balloon catheter. The stenoses in the proximal to mid superficial femoral as well as proximal to mid popliteal arteries are crossed. These lesions are dilated with a balloon catheter (5 mm x 80 mm in length) with good results. The right external iliac artery is then stented with a 6 mm x 38 mm stent in its mid to distal aspect with a 7 mm x 30 mm stent extended into the distal most aspect of the external iliac artery. This lesion is then post-dilated with a 6 mm balloon catheter with good results as well.

The sheath is pulled back into the left external iliac artery, and the entire left external iliac artery is stented with two 38 mm stents deployed on a 6 mm balloon catheter with excellent results as well.

**Codes: 37221-50, 37224, 75716-XU**

*The diagnostic angiography is reported separately with modifier -XU appended. "Aortography" was of the pelvis and is part of the bilateral leg run-off. An aortogram was not performed. Angioplasty was performed in the right external iliac artery, which is not reported, as there is a subsequent stent placement (which includes the angioplasty). Angioplasty was performed in the proximal to mid SFA and proximal to mid popliteal artery on the right. There were no other interventions performed in these two arteries. The SFA and popliteal arteries are both in the femoral/popliteal territory, which is all considered one vessel for coding revascularization procedures, so only one revascularization is coded. The angioplasty is reported with code 37224. Following this, attention was turned back to the right external iliac artery that had been previously dilated. A stent was placed. The iliac artery is in a different territory than the SFA and popliteal artery, so the right iliac artery revascularization procedure is reported separately. The previously performed angioplasty is included in the stent placement. The iliac stent placement is reported as an initial stent placement with or without angioplasty (37221), as it is the first (and only) artery treated in this right iliac territory. A stent was then placed in the left external iliac artery. The revascularization procedure codes are unilateral, so this intervention is reported as an initial stent placement in the left iliac territory. It is also reported with code 37221. We have appended modifier -50 to indicate bilateral iliac stent placement was performed, but you may also report this as 37221, 37221-59 and/or append anatomical modifiers.*

**Example 14**

Non-healing ulcer of the right ankle.

Via the left common femoral artery a sheath and catheter are placed in the proximal abdominal aorta.

A midstream aortogram demonstrates antegrade filling of the celiac axis and SMA. There is a single renal artery to the right kidney with a 90% stenosis involving the proximal centimeter of this vessel. The left

main renal artery demonstrates mild atherosclerotic disease. Moderate atherosclerotic disease of the infrarenal portion of the abdominal aorta but no significant stenosis.

A catheter is pulled down into the distal abdominal aorta, and a rotational arteriogram of the pelvis is performed, which demonstrates that the right common iliac and external iliac arteries are widely patent. The right hypogastric artery is patent as well. Catheter is placed over the bifurcation into the right external iliac artery, and a selective arteriogram of the right lower extremity demonstrates an eccentric plaque in the mid to distal aspect of the right common femoral artery causing a 30 to 40% narrowing. The right femoral profunda vessel is small in caliber but patent. There is diffuse calcification of the right superficial femoral artery but no significant high-grade stenosis. There is a focal stenosis at the exit of Hunter's canal that extends over a centimeter distance and represents a 70% narrowing. The popliteal artery then improves in caliber. The anterior tibial artery is occluded 3 cm beyond its origin. There is a high-grade stenosis of the posterior tibial/peroneal trunk beginning 5 mm beyond its origin. This extends over a 5 mm distance. The posterior tibial-peroneal trunk then improves in caliber with a good caliber peroneal artery seen to the distal calf. The posterior tibial artery is occluded at its origin. There is reconstitution of the branches of the dorsalis pedis artery of the foot. The posterior tibial artery is reconstituted 4 cm above the ankle joint but is a very small caliber vessel with a small caliber posterior tibial artery seen in the foot. The left common iliac artery is widely patent. The left external iliac artery is widely patent as well. The left hypogastric artery demonstrates minimal atherosclerotic disease.

With a catheter in the left external iliac artery, an arteriogram of the left lower extremity demonstrates that the left common femoral and femoral profunda vessels are patent. The superficial femoral artery demonstrates a focal stenosis in the mid portion of

this vessel. This lesion extends over a centimeter and represents a 50% narrowing. The popliteal artery then improves in caliber. The anterior tibial artery is occluded 2 cm beyond its origin. There is mild atherosclerotic disease of the proximal centimeter of the posterior tibial/peroneal trunk representing a 30-40% narrowing. The caliber of this vessel then improves with a good caliber peroneal artery seen to the distal calf. The posterior tibial artery is occluded just beyond its origin. There is reconstitution of a posterior tibial artery at the level of the mid os calcis, which is a good caliber vessel into the foot.

A 5 French sheath is placed over the bifurcation into the right proximal superficial femoral artery. The stenosis in the proximal popliteal artery is crossed with a 0.014 guidewire. It is dilated with a 4 mm x 40 mm balloon catheter with good results. The stenosis in the tibial/peroneal trunk is then crossed and dilated with 3.5 mm x 2 cm in length balloon with excellent result. The right renal is then selected, and a 5 mm stent is placed.

**Codes: 36245-XS, 37236, 37224, 37228, 75625-XU, 75716-XU**

*The diagnostic angiogram is reported separately, as it is used for the initial diagnosis. Selective renal angiography is not performed, so code 75625-XU is submitted for aortography, and catheter placement code 36245 is allowed with the renal stent placement. An -XS modifier has been appended to code 36245, indicating it is a separate structure from the lower extremity, to accommodate NCCI edits. Two angioplasties were performed, one in the popliteal artery and one in the tibial/peroneal trunk. These are two separate vascular territories, so the angioplasty procedures are coded independently of each other. A stent was placed in the right renal artery. This is reported separately with code 37236 along with catheter placement code 36245-XS (the catheter placement outside the lower extremity revascularization vascular family is separately billable).*

## Summary

Coding of revascularization procedures is quite simple once you understand the concepts and the rules. You don't have to worry about selective catheter placements and whether an angioplasty was the planned definitive treatment or if it was performed to pre-dilate the vessel for subsequent stent placement. The key concepts to know are that there are three territories: the iliac, the femoral/popliteal, and the tibial/peroneal. Coding for iliac artery revascularization is unique in that there are separate codes to report additional vessel revascularization and atherectomy may be reported separately (codes 0234T-0238T). Coding for femoral/

popliteal artery revascularization is unique in that the whole territory is considered one vessel for coding purposes, and only one revascularization code may be reported for a unilateral territory. Coding for tibial/peroneal revascularization is unique in that the tibial/peroneal trunk is not considered a separate vessel unless it is the only vessel revascularized or the only other vessel revascularized is the anterior tibial artery. It is included in posterior tibial and peroneal artery revascularization. There are one "initial" and two "additional" unilateral interventions possible. Atherectomy is included in the code group 37228-37235 for tibial/peroneal intervention, similar to the femoral/popliteal codes; however, up to two "additional" vessel interventions are allowed.