I run a billing company for physicians, and my husband, who is an interventional radiologist, is one of my clients. Recently, he approached me and asked me what he was paid for his procedures. Because of the numerous possibilities for performing interventional procedures, I told him that he needed to be more specific about his request. He said, “OK, what do I get paid for iliacs?” I asked, “Diagnostic or therapeutic, nonselective or selective, contralateral or ipsilateral, bilateral, single-vessel or multiple-vessel procedures?” He asked me why I had to know so much about the procedure to give him a figure. I told him that I could give him an overall ballpark figure for all of his procedures but he wanted something more specific. So, I began to diagram the possibilities.

BILLING GUIDELINES

Reimbursement is a complicated issue, and coding depends on what was done and what was documented. For documentation purposes, each part of the interventional procedure must be described in detail, such as:
- the puncture site(s)
- final position of the catheter within each vascular family
- all preprocedure imaging
- any therapeutic procedures performed
- all supervision and interpretation services

In order for a procedure to be recognized by a third party payor (e.g., Medicare), appropriate current procedural terminology (CPT) codes must be submitted to the payor. Iliac procedures are coded in accordance with conventional interventional radiology component billing guidelines, which allow for the identification of a wide variety of coding combinations in various circumstances. The surgical component of the procedure is most often identified by the 30000 series CPT codes, whereas the imaging and supervision and interpretation (S&I) services are described by the use of the 70000 series CPT codes. For the imaging procedures, a -26 modifier is added to the 70000 series code if the equipment is not owned by the physician. CPT codes can be modified under certain circumstances. There are various modifiers that are used with the 30000 series codes to assist the carriers in making proper payment determination. Some of the modifiers that I frequently use are the -51 multiple procedure or -59 distinct procedural services, and -50 bilateral procedure modifier. For a complete list of modifiers, please refer to the AMA CPT manual.
**CODING EXAMPLES**

When coding for interventional services, we always start with the puncture site and final position of the catheter within any given vascular family. Catheter services can be described as nonselective or selective; a nonselective catheter is placed directly into an artery (eg, the aorta), whereas if the catheter is negotiated further into a branch, it involves more effort and a selective catheter placement code is used. Upper and lower selective catheter placements are described as first-, second-, or third-order as the selectivity increases.

There are also codes for each additional second- or third-order catheter placements within a given vascular family.

Let us assume that, from a right femoral puncture site, a diagnostic study was performed by placing the catheter nonselectively into the aorta for performing an aortogram with run off. In this case, the CPT codes would be:

- 36200 introduction of catheter, aorta
- 75630-26 aortography, abdominal plus bilateral iliofemoral lower extremity S&I (-26 professional component modifier used because we do not own the equipment).

If the catheter were selectively placed contralaterally from the right femoral puncture site into the left common iliac and a unilateral lower-extremity angiogram was performed, the CPT codes would be reported as:

- 36245 selective catheter placement, arterial system, each first-order, lower-extremity artery branch
- 75710-26 angiography, extremity, unilateral, S&I

Using the same example, if the catheter were then pulled back into the right common iliac and bilateral imaging were performed via the sheath, the full procedure would be coded as:

- 36245 selective catheter placement, arterial system, each first-order, lower-extremity artery branch
- 75716-26 angiography, extremity, bilateral, S&I

Let us move on to a selective therapeutic procedure in which an internal iliac percutaneous transluminal angioplasty (PTA) was performed after a contralateral catheter placement and unilateral lower-extremity imaging was performed. In this case, the codes would be:

- 35473 transluminal balloon angioplasty, percutaneous, iliac
- 36246-51 selective catheter placement, arterial system, initial second-order, lower-extremity branch (modifier -51 can be used to identify the multiple surgical procedures, or, if a -51 is not recognized by the insurance carrier, a -59 distinct procedure modifier can be used in each example)
- 75962-26 transluminal balloon angioplasty, peripheral artery, S&I
- 75710-26 angiography, extremity, unilateral, S&I

(Note: according to recent National Correct Coding Initiative [NCCI] edits, the 75710-26 imaging procedure would be denied by Medicare as included in the more comprehensive code 75962.)

If a catheter were placed contralaterally into the external iliac artery and a unilateral extremity imaging procedure were performed prior to a PTA, with dictated unsuccessful results requiring the placement of a stent, the coding would be:

- 37205 transcatheter placement of an intravascular stent(s), percutaneous, initial vessel
- 35473-51 transluminal balloon angioplasty, percutaneous, iliac
- 36246-51 selective catheter placement, arterial system, initial second-order, lower-extremity branch
- 75960-26 transcatheter introduction of intravascular stent(s), percutaneous, S&I, each vessel
- 75962-26 transluminal balloon angioplasty, peripheral artery, S&I
- 75710-26 angiography, extremity, unilateral, S&I

(Once again, the 75710-26 code would be denied by Medicare due to the NCCI edits.)

However, in the previous example, if the vessel were not predilated and the balloon was expanded for the purpose of deploying the stent, it would be considered to be primary stenting, and the codes for the procedure would be:

- 37205 transcatheter placement of an intravascular stent(s), percutaneous, initial vessel
- 36246-51 selective catheter placement, arterial system, initial second-order, lower-extremity branch
- 75960-26 transcatheter introduction of intravascular stent(s), percutaneous, S&I, each vessel
- 75962-26 transluminal balloon angioplasty, peripheral artery, S&I
- 75710-26 angiography, extremity, unilateral, S&I

If bilateral common iliac PTA/stenting is performed from a single puncture site after selective bilateral lower-extremity angiograms were obtained, the codes would be:

- 37205 transcatheter placement of an intravascular stent(s), percutaneous, initial vessel
- 35473-50-51 transluminal balloon angioplasty, percutaneous, iliac (in this case, I have used the -50 bilateral procedure modifier as well as the -51 multiple surgical procedure modifier to ensure that the insurance carrier understands the circumstances)
- 37206 transcatheter placement of intravascular stent(s), percutaneous, each additional vessel
- 36245-51 selective catheter placement, arterial system; each first-order, lower-extremity branch
- 75960-26 transcatheter introduction of intravascular stent(s), percutaneous, S&I, each vessel
- 75962-26 transluminal balloon angioplasty, peripheral artery, S&I
- 75710-26 angiography, extremity, unilateral, S&I

If bilateral common iliac PTA/stenting is performed from a single puncture site after selective bilateral lower-extremity angiograms were obtained, the codes would be:

- 37205 transcatheter placement of an intravascular stent(s), percutaneous, initial vessel
- 35473-50-51 transluminal balloon angioplasty, percutaneous, iliac (in this case, I have used the -50 bilateral procedure modifier as well as the -51 multiple surgical procedure modifier to ensure that the insurance carrier understands the circumstances)
- 37206 transcatheter placement of intravascular stent(s), percutaneous, each additional vessel
- 36245-51 selective catheter placement, arterial system; each first-order, lower-extremity branch
- 75960-26 transcatheter introduction of intravascular stent(s), percutaneous, S&I, each vessel
- 75962-26 transluminal balloon angioplasty, peripheral artery, S&I
- 75710-26 angiography, extremity, unilateral, S&I

(Once again, the 75710-26 code would be denied by Medicare due to the NCCI edits.)
There is little doubt that percutaneous endovascular therapy has supplanted the bulk of open surgical repair for aortoiliac occlusive disease (AIOD). A brief survey of the senior author's practice indicates that during the interval 2003 to the present, 46 percutaneous endovascular procedures were performed in patients with AIOD, whereas 27 formal surgical revascularizations were performed. In addition, so-called hybrid procedures (i.e., open femoral artery approach) were utilized 30 times. Treatment options for AIOD are many and have been reviewed elsewhere. Despite the migration to endovascular therapies, a surgical perspective is bolstered by the substantiation of the gold standard aortobifemoral bypass graft as an extremely effective and durable treatment for AIOD. But, these are interesting times and the risk/benefit ratio of any intervention can no longer be considered in the myopic context of operative mortality and long-term durability.

Surgeons (hopefully) long ago appreciated the futility of banging the long-term durability drum. Our patients and their referring physicians desire minimally invasive therapies with their attendant low risk and rapid return to functional status. Such a paradigm is particularly important when intervention is carried out to relieve claudication—true for the majority of patients treated for AIOD. In this context, we review the variety and specific application of surgical reconstructions for AIOD. Such reconstructions (Table 1) are selectively applied as a function of anatomic patterns of disease, associated conditions and/or comorbidities, and previous interventions.

**SURGICAL OPTIONS**

**Aortobifemoral Grafting**

Aortobifemoral grafting is the standard and the benchmark against which all therapies for bilateral AIOD should be considered. In properly selected and evaluated patients, operative mortality rates of 1% with attendant patency rates of 85% to 95% at 5 years and 75% to 80% at 10 years, can be achieved. The procedure is also well suited for treating complex patterns of occlusive disease, including multi-segment disease and long-segment occlusions. Furthermore, aortobifemoral grafting has been documented to achieve excellent functional outcomes, although assessing the contribution of the frequently associated infrainguinal disease is a constant of surgical judgment.

Important technical components of the procedure include selecting the appropriate method of proximal anastomosis (end-to-end preferred in most), careful graft limb tunneling to avoid ureteral complications, avoidance of sexual dysfunction in sexually active male patients, and, most importantly, verification and/or reconstruction of profunda...