American Society of **D**iagnostic
& **I**nterventional **N**ephrology

Coding of Procedures in Interventional Nephrology 2009

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Introduction

Proper coding of interventional procedures is a difficult and daunting, but essential task. Each procedure that is done is made up of a number of parts, each of which has its own code. This requires that a list of component codes be created for each procedure based upon selections made from a long list of alternatives. It is important that this be done correctly. However, many of the potential codes are not specific, many have exclusions and some are bundled. Add to this complexity the fact that changes in coding are being made on a constant and continuing basis. There is no question; the process can be confusing and even baffling.

The Renal Physician's Association and The American Society of Diagnostic and Interventional Nephrology established a joint committee to develop an educational document to outline the most appropriate coding practices for interventional procedures and published a Coding Manual in 2005. The manual was updated in 2006. Since then multiple changes have altered the landscape of interventional coding. These include changes in CCI edit policies and the advent of G-codes for interventions. Recognizing the importance of unanimity in coding practices, an ASDIN task force was created in 2007 with the mandate to review relevant billing practices of other societies enter into discussions and whenever possible make suggestions to the coding committee to resolve them. Most of these recommendations are incorporated within this revision of the manual. It is our belief that major differences in coding practices no longer exist.

This has necessitated a thorough review and revision of the ASDIN manual by the coding committee. The committee has been expanded and broadened to represent the many aspects of the interventional community served by ASDIN. This manual is now presented for your use with our firm recommendations that it be considered the standard of practice for coding. <u>Please make special note of the changes in the sections on selective catheterization, arteriography, and angioplasty coding.</u> Please note also that this revision of the manual recognizes the difference in complexity of procedures on arteriovenous fistulas verses arteriovenous grafts.

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Notice
This document is informational only and should serve as a guideline for appropriate coding. CPT codes and their descriptors are copyrighted by the American Medical Association. Codes should be strictly applied in a manner consistent with coverage and payment policies including National and Local Coverage Determination Policy for specific rules in your area.

This manual is designed to provide accurate and authoritative information regarding coding principles and reasonable efforts have been made to assure the accuracy of the information within the pages. However, the ultimate responsibility for correct coding /documentation remains with the provider of service. ASDIN makes no representation, warranty, or guarantee that this compilation of information is error-free, nor that the use of this guide will prevent differences of opinion or disputes with the Medicare carrier as to the the codes that are accepted or the amounts that will be paid to providers of service, and will bear no responsibility or liability for the results or consequences of this guidance.

Grouping of Codes

Because of the way the individual CPT codes are designed, it is generally necessary to use a group of component codes for an interventional procedure. At times, this grouping will vary somewhat for the same procedure. For example, in doing a thrombectomy, there are some steps that are always performed (cannulation, thrombectomy) however, there are some steps that may or may not be performed depending upon the circumstance (arterial angioplasty). Therefore, in doing the coding you should start with the basic set of codes for that procedure and add to it as needed. In either instance you will end up with a list of codes. In order to create this group or list of codes, the individual procedure or service must be understood. In addition, most radiology coding is composed of two related codes, a 3xxxx level code for the performance of the procedure and a separate 7xxxx level code for the radiologic supervision of the procedure and interpretation of the images. Also, CPT codes allow modifiers for second, incomplete or unusually complex procedures. These modifiers are published in the CPT manual of the AMA.. Compared to other areas, cardiology coding for example, relatively few peripheral interventions are considered bundled, therefore, detailing everything performed and reviewing CCI Edits is essential to accurate coding and reimbursement.

Note:

CCI Edits - The Centers for Medicare and Medicaid Services (CMS) developed the National Correct Coding Initiative (NCCI) to promote national correct coding methodologies and to control improper coding that leads to inappropriate payment in Part B claims. The coding policies developed are based on coding conventions defined in the American Medical Association's CPT manual, national and local policies and edits, coding guidelines developed by national societies, analysis of standard medical and surgical practice and review of current coding practice. CCI edits are editorial comments that are issued to clarify coding issues. If there is a special restriction or requirement for the use of a specific CPT code, it will be published as a CCI Edit. CCI Edits are updated quarterly, updates should be ordered and reviewed quarterly.

National Correct Coding Initiative

CMS expanded the reach of the National Correct Coding Initiative (NCCI), effective Jan. 1, 2009. The NCCI edits, built into the Medicare contractors' claims processing systems, control improper payment of Part B claims by disallowing certain combinations of CPT codes to be billed together, or by limiting the payable

number of units for some services. The NCCI contains two types of edits: the Column 1/Column 2 edits, and the Medically Unlikely Edits (MUEs).

Column 1/ Column 2 - Column 1/Column 2 code edits get their name from the table in which they appear. The CPT codes appearing in Column 1 are the payable service. The codes in Column 2 are the non-payable codes unless they qualify for an appropriate modifier). The column 1/column 2 correct coding edit table contains two types of code pair edits. In effect, the edit bundles the Column 2 service into the Column 1 service when either:

- Column 2 (component) is an integral part of Column 1 (comprehensive), or when
- Column 1 and Column 2 could not reasonably based on medical necessity be provided to the same patient on the same day by the same physician

The National Technical Information Service (NTIS) provides the printed versions of column 1/column 2 correct coding edits and CMS provides the electronic version. The column 1/column 2 edits table is divided into 6 columns:

- Column 1 is the payable code in the edit pair
- Column 2 is the non-payable code in the edit pair
- Column 3 shows whether an edit pair was established before 1996
- Column 4 shows the first effective date of the edit
- Column 5 shows the deletion date of the edit.
- Column 6 shows whether exceptions are allowed for billing the code pair

When reported with the column 1 code, the "column 2" code generally represents the code with the lower work RVU of the two codes. Some column 1/column 2 codes are mutually exclusive. In this instance column 6 of the table will list a "0." This means that if both procedures are reported, only the column 1 code will be paid. Basically, in practice, one should drop the column 2 code in favor of the higher level column 2 code. An example of this is cannulation. Nonselective cannulation, 36145, is a column 2 code. Selective cannulation (catheterization) such as for a 1st order artery, 36215, is a column 1 code. These codes are mutually exclusive. When performed together, only the column 1 code should be reported. These code pairs are assigned a correct coding modifier indicator of "0" which means that the modifiers associated with the CCI are not allowed.

Other column 1/column 2 code pairs allow for the use of a modifier. In this instance column 6 of the table will list a "1." This means that if both procedures are reported, both codes will be paid, but a 59 modifier will need to be attached to the column 2 code. An example of this is simultaneous arterial angioplasty (or venous angioplasty of the access) and a venous angioplasty of the central vessels. Arterial or venous G-code angioplasty (G0392 or G03930, has been designated a column 1 code and central venous angioplasty, 35476, a column 2 code. However, column 6 of the table lists a "1" for this code pair. This means that both codes can be reported when done on the same patient, but a -59 modifier needs to be attached to the column 2 code (35476 in this example).

It should be noted that the same code can be a column 1 code when paired with one code and a column 2 code when paired with a different code. For example with the code pair G0392/G0393, G0393 is a column 2 code; however, the two codes are mutually exclusive. – this would be coded only with a G0392, G0393 would be dropped-. With the code pair G0393/35476 (35476 referring to angioplasty of a central vessel), G0393 is a column 1 code and 35476 is a column 2. This allows for use of a modifier so the coding would be listed as G0393 and 35476-59 when performed together..

Medically Unlikely Edits - An MUE for a CPT code sets the maximum number of units that a physician would report under most circumstances for a single beneficiary on a single date of service. The MUE is based on the natural anatomic limits, the HCPCS and CPT code descriptors, CPT coding instructions, CMS policies, the nature of service/procedure, the nature of equipment, and the physician's clinical judgment. Accordingly, if the MUE is "2," the physician cannot be paid for more than 2 units of that code for a single patient on a single date of service. It should be noted that not all HCPCS/CPT codes have MUEs associated with them.

Currently no CMS required MUEs apply to procedures described in this manual. However, the Coding Committee has indicated the principle that an MUE of 2 venous angioplasties should apply except in unusual circumstances.

Separate Billing for Technical and Professional Services (Modifier 26)
In general, CMS makes a single payment for all covered services, which includes ancillary services that are furnished in connection with a covered procedure such as radiology. They do, however, designate certain radiological services (7xxxx series codes) that are eligible for separate payment of the technical and the professional component. This is possible only if the services are performed in a facility in which the physician does not own the equipment or employ the technical staff. These eligible services are billed by attaching a modifier to the basic code, TC for the technical and 26 for the professional component. If the code for the procedure is used unmodified, it indicates a complete or global service.

If the physician owns the equipment and employs the technical staff or if the physician is employed directly by the facility to provide professional services for which the facility does the billing, the global designation (no modifier) is used.

This principle, i.e., the ability to use a 26 and TC modifier applies only for procedures performed in the hospital. None of the radiological codes (7xxxx series codes) used in this manual have been designated as eligible for separate payment under this mechanism in an ambulatory surgical center. It also does not apply in the extension of doctor's office model. The 3xxxx series and the 9xxxx series codes are not affected by this policy.

Individual Codes Used For Vascular Access Procedures
It is perhaps easiest to organize a review of individual codes by looking at the procedure being performed. The manual is organized around procedural types and groupings with likely coding combinations discussed. In addition, CPT codes are organized in a structure of complexity. In many situations, "higher" level codes necessitate the elimination of "lower" level codes and this will be discussed in detail by examples.

1. Angioplasty and Related Procedures

1.1 PRIMARY CODES

First to be considered are the primary codes that are generally used with this procedure. In addition, there are several secondary codes that may occasionally be used. These will be discussed after the primary codes. If a procedure-related complication occurs, this might also generate additional codes.

Table 1 - Codes Used for Angioplasty

Primary -
36145 – Cannulation
75790 – Angiogram of graft or fistula
G0393 – Venous angioplasty (within access)
35476 – Venous angioplasty (outside of access)
75978 – Supervision and interpretation of either G0393 or 35476

Secondary (occasional) -
36145-59 – Second cannulation
G0392 – Arterial angioplasty (within access)
35475 – Arterial angioplasty (outside of access) upper extremity
35474 – Arterial angioplasty (outside of access) lower extremity
75962 – Supervision and interpretation of either G0392 or 35475
75710 - Arteriogram of extremity
75820-59 – Angiogram of draining veins (separate procedure)
75827-59 – Angiogram of superior vena cava (separate procedure)
75825-59 - Angiogram of inferior vena cava (separate procedure)
36010 - Selective catheterization of SVC or IVC
36215 - Selective catheterization first order branch, artery (upper extremity)
36216 - Selective catheterization second order branch, artery (upper extremity)
35245 – Selective catheterization of first order branch, artery (lower extremity)
36120 - Cannulation of brachial artery via direct puncture

1.1.1 Cannulation (Catheterization) Code

Cannulation or catheterization (in this context, the terms are used to mean the same) may be either selective or non-selective. Selective cannulation is a column 1 code and non-selective is a column 2. These codes are mutually exclusive. This principle involves both arterial and venous vessels. In order to code properly, this concept must be mastered.

1.1.1.1 Non-selective cannulation (column 2 code)

The most frequently performed cannulation is non-selective. The target vessel is entered directly and is not manipulated further. The target vessel has been accessed and the procedure is over. The code 36145 is a non-selective cannulation code which is specific for the dialysis access (either fistula or graft). The descriptor for 36145 is – introduction of needle or catheter into an arteriovenous shunt created for dialysis (cannula, fistula, or graft). This code would be used when either a graft or a fistula is cannulated. (It is not an appropriate code for use when a vein is cannulated as for vein mapping.)

Note: The cannulation (catheterization) code whether non-selective or selective as discussed below includes: "necessary local anesthesia, introduction of needles or catheter, injection of contrast media with or without automatic power injection, and/or necessary pre- and post injection care specifically related to the injection procedure".

1.1.1.2 Selective catheterization (column 1 code)

With selective catheterization, the device being used is manipulated in some manner in order to advance from the first vascular structure entered to the target vessel, either an artery or a vein. Several necessary conditions must be met in order to utilize the selective catheterization codes. The first is medical necessity, the second is the use of a guiding or diagnostic catheter placed independent of a balloon catheter, and the third is the documentation of the work effort required for manipulation of the wire and injection of contrast.

The key word here is manipulation. If the device enters the target vessel passively, then the procedure should not be considered as a selective catheterization. For example, an AVF is cannulated, but the target vessel is the radial artery and in order to enter the radial artery manipulation of the wire using a catheter is required. This would be a selective catheterization. On the other hand, if the wire passes easily up the radial artery then this is not selective catheterization. Similarly, if a graft is cannulated and the target vessel is simply a continuation of the access such as the basilic vein leading into the axillary vein and on into the subclavian vein, no manipulation is required to advance a device into the downstream vessels. This would not warrant a selective catheterization code.
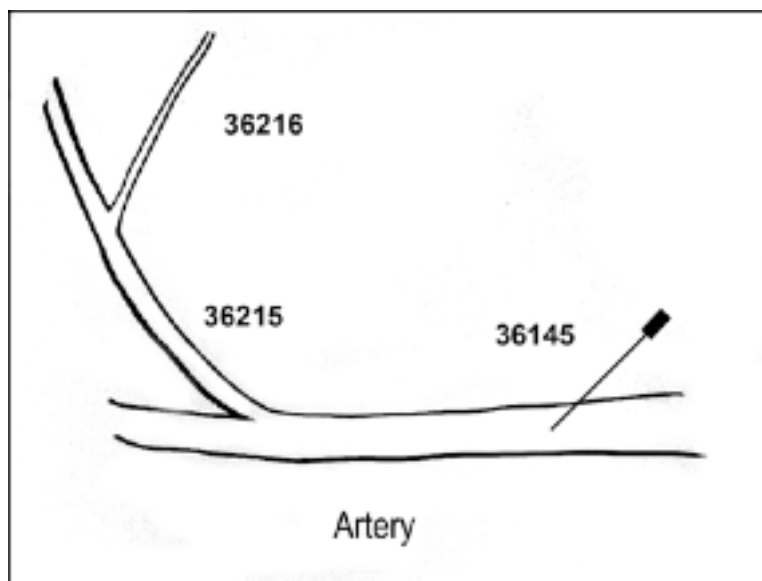

Figure 1 – Catheterization sequence for arterial catheterizations. Only the highest order code is used, the preceding codes are dropped.

The most common scenario is when unique pathology presented by an individual case requires that the vessel be selectively catheterized to facilitate the performance of an angiogram and the appropriate treatment of the case. In this instance either the code 36215 or 36216 would be warranted depending upon the specific sequence of the target artery entered (Figure 1). The descriptor for 36215 is – selective catheter placement, arterial system, each first order thoracic or brachiocephalic branch, within a vascular family. For the code 36216, the descriptor is - selective catheter placement, arterial system; initial second

order thoracic or brachiocephalic branch, within a vascular family (Figure 1). If dealing with a thigh graft anastomosed to the femoral artery, the first order branch would be the femoral artery. The code for this would be 36245. The descriptor for this code is - selective catheter placement, arterial system; each first order abdominal, pelvic or lower extremity artery branch, within a vascular family. Because we are usually entering an artery from a fistula or graft, the essential element to differentiate which code to use is the order or sequence of vessels entered rather than the specific anatomic designation of the vessel entered.

Example: a fistula was cannulated retrograde. Because of diminished pulse pressure (the medical indication) the artery was cannulated retrograde. To accomplish this selective catheterization was performed by "manipulating" a vascular catheter into the anastomosis in order to facilitate passing a guidewire followed by a diagnostic catheter into the radial artery (the work component) and an angiogram was performed. The radial artery would be classified as a first order artery and the selective catheterization code 36215 would be used.

The same principles hold for selective venous catheterization. The code for catheterization of a 1st order venous branch is 36011. The descriptor for this code is – introduction of needle or intracatheter, vein; first order branch. The code for catheterization of a 2nd order venous branch is 36012. The descriptor for this code is – introduction of needle or intracatheter, vein; second order, or more selective, branch (Figure 2).
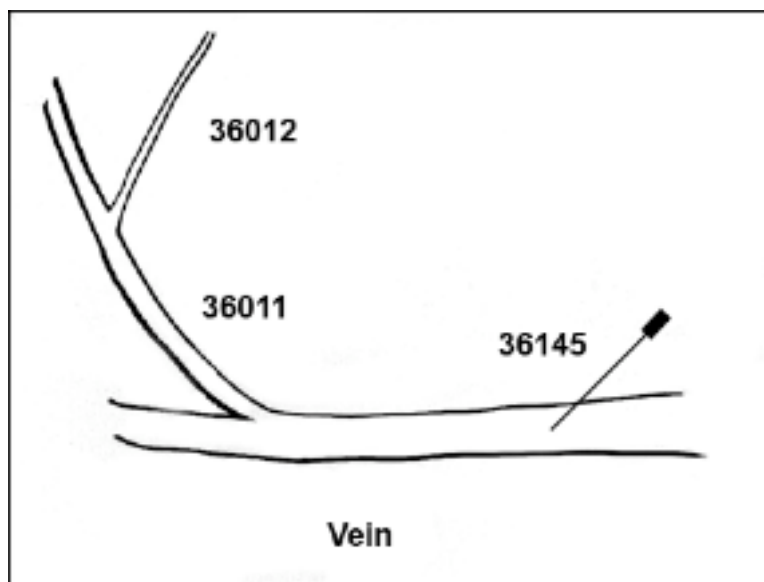

Figure 2 – Catheterization sequence for venous catheterizations. Only the highest order code is used, the preceding codes are dropped.

These selective codes were originally developed for use based upon cannulation of a central vessel from which one progressed peripherally. In dealing with dialysis access dysfunction; however, the process is generally reversed; the progression is from a peripheral cannulation to a more central location. One is generally (although not always) accessing a peripheral vessel and progressing centrally.

The anatomical name of the vessel involved is not important. The only exception to this is the vena cava. The code 36010 is specific to selective catheterization of either the superior or inferior vena cava. Contrast injection of the vena cava also has a unique code for supervision and interpretation, 75825 for the inferior and 75827 for the superior vena cava. If the selective code 36010 (column 1 code) is used, then the non-selective code 36145 (column 2 code) should be dropped.

In applying a selective cannulation code, the determining factor is **actual work performed**. Ordinarily the work involved in negotiating a wire across a stenotic lesion is included in the relative value units of the angioplasty. However, there will be situations where this is not achieved without the added work of selective catheterization with a guiding or diagnostic catheter. Again the key element is the **requirement for manipulation** of the guidewire with a vascular catheter. A **valid medical indication for selective catheterization** must be present separate from the need to perform an angioplasty It should be recognized that crossing a lesion only for the purpose of performing an angioplasty does not qualify under this heading. Such a maneuver should be regarded as a reasonable part of that basic procedure.

Example 1: An angiogram was performed that visualized the access and draining veins all the way up through the superior vena cava. A stenotic lesion was identified in the mid-basilic vein. Great difficulty was encountered in passing the guidewire necessary to facilitate the angioplasty. It had to be manipulated using a vascular catheter. In this instance, a selective catheterization code was not warranted since only the angioplasty was accomplished through the guidewire passage.

Example 2: An angiogram of a forearm cephalic vein fistula was performed. Dual drainage is observed. However, a 90 % stenosis of the upper arm cephalic vein was noted. In order to define this vessel ('indication") a vascular catheter was required to "manipulate" a guidewire past the lesion ("work component"). An angiogram was performed through a diagnostic catheter which demonstrated that the upper arm cephalic vein was the dominant drainage. Subsequently an angioplasty was performed. In this example an indication for a selective catheterization was present, a first order vein was cannulated and a diagnostic catheter was required to perform the necessary angiogram. A 36011 should be coded.

Actually, the performance of a selective catheterization requires a **double indication**. Firstly, there is a requirement for a medical indication for the procedure that is to be performed (such as an angiogram or the placement of a coil). Secondly, there is an absolute need for a medical indication for the selective catheterization. When this is followed by the work of guidewire manipulation with a vascular catheter, only then is the code for selective catheterization is warranted (Figure 3).
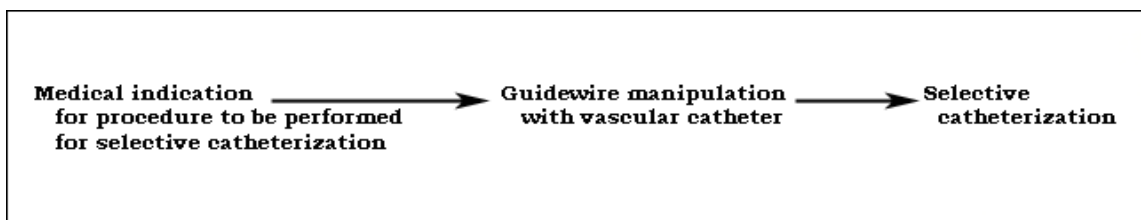

Figure 3 – Requirements for selective catheterization

Notice that these codes are **not attached to an anatomically named vessel**. The same vessel could be a first or second order branch depending on the vessel which was the primary site of access. If the brachial artery is selectively cannulated from a radial-cephalic fistula, it would be a second order branch. If the same vessel was catheterized from a brachial-cephalic graft, it would be a first order branch (it is the first artery that you come to from that site). Likewise, the radial artery would be a second order branch if reached by first passing through the brachial, but would be a first order branch if it is the artery attached to the access as is the case with a radial cephalic fistula. The code used in each instance must indicate the order of the branch rather than being specific for an anatomical name.

There are times when entering a downstream continuation vessel **does** require manipulation for purposes of visualization rather than angioplasty. If an obstruction of the distal subclavian vein or cephalic arch precludes adequate visualization of the central vessels, selective catheterization with a diagnostic catheter

would be warranted. This would be considered a first order selective catheterization and would be coded 36011.

Example: A case with a clinical presentation suggestive of a central venous stenotic lesion was evaluated with an angiogram. The venous anatomy up to the mid subclavian vein was visualized injecting through the sheath. At that point an obvious lesion was noted. However, nothing was visualized beyond that point. Because of the "medical necessity" to visualize the remainder of the venous drainage, a vascular catheter was passed beyond the lesion. This was accomplished by "manipulation" of the guidewire with a vascular catheter ("work component"). The angiogram was performed by injecting through the catheter once it was passed. A 36011 code for selective catheterization was warranted.

Pertinent principles associated with selective catheterization are summarized in Table 2.

Table 2 Selective Catheterization	
Requirements	Disqualifications
Medical necessity	No medical indication
Guidewire manipulation	No manipulation
with vascular catheter	Angioplasty only
to move from one vessel	Using angioplasty balloon catheter
to another	Using dialysis catheter

Important coding principle – As previously mentioned, selective catheterization is a column 1 code (see details on page 4) and non-selective cannulation is a column 2 code. Therefore, the two cannot be used together for the same site. When the access is cannulated, the non-selective code is warranted; however, if a selective catheterization is then performed through this site, the non-selective code is dropped in favor of the selective code. The column 1 code always takes precedence. If the access is cannulated a second (or more) time, a non-selective code with a 59 modifier would be warranted. The basic principle is - each time a site is used for a selective catheterization, the non-selective code is dropped in favor of the selective one.

1.1.2 Angiogram

When a routine angiogram of an access (fistula or graft) is performed, the code 75790 should be used. The descriptor for this code is – angiography, arteriovenous shunt (eg. dialysis patient) radiological supervision and interpretation. This code bundles visualization of the entire access and all of its venous drainage up through the superior vena cava. In other words, the code 75790 includes all of the access from the arterial anastomosis to the venous anastomosis as well as all peripheral and central veins that receive drainage from the access. It also includes the artery immediately adjacent to the anastomosis.

There are separate codes for the draining veins of the access (75820) and for the superior vena cava (75827); however, under ordinary circumstances these are bundled in the use of the 75790 code. Therefore they should not be separately listed except in certain (see below) special circumstances.

The code 75820 is used to designate an angiogram of the draining veins. The descriptor for this code is – venography extremity, unilateral radiological supervision and interpretation. This code includes all of the veins above the site of access into the vessel up to, but not including, the superior vena cava. The code 75827 is used to designate an angiogram of the superior vena cava. The descriptor for this code is – venography caval, superior, with serialography, radiological supervision and interpretation.

In order to qualify as a separate procedure and be coded separately, these studies must be either **performed by selectively catheterizing the veins** in question (see discussion under selective catheterization) or be **performed by cannulating a separate site**. In such an instance, the independent code, 75820 or 75827, should be listed with a -59 modifier designating that the study performed qualifies as a separate procedure. This listing should be in addition to the 75790 code. If selective catheterization of the superior vena cava is performed the code 36010 is warranted. The descriptor for this code is - introduction of catheter, superior or inferior vena cava (see details below).

In patients with an access placed in the thigh, angiographic studies will involve the inferior vena cava and its branches. The code for an angiogram of the inferior vena cava is 75825. The descriptor for this code is venography, caval, inferior, with serialography, radiological supervision and interpretation. The draining veins, i.e., the femoral, external iliac and common iliac are all covered by the code 75820. This is the same code as is used for the draining veins in the upper extremity. The descriptor for this code is - venography, extremity, unilateral, radiological supervision and interpretation. As is the case with the upper extremity codes, these codes can be used with 75790 only if they qualify as a separate procedure. In this instance they would be used with the modifier -59. If selective catheterization of the inferior vena cava is performed the code 36010 should be used just as for the superior vena cava. The descriptor for this code is - introduction of catheter, superior or inferior vena cava.

As was described above under the selective catheterization section, when the selective code is used, the non-selective cannulation code for that site should be dropped. The higher order code takes precedence.

It is important to note that although an angiogram may be repeated several times during the course of the angioplasty procedure, it should be **coded only once**. Additionally, one should note that angiograms performed in follow-up for procedures such as angioplasty or stent placement are considered to be bundled with the basic procedure itself. The only exception to this is a follow-up angiogram following coil placement which is code 75898. The descriptor for this code is - Angiography through existing catheter for follow-up study for transcatheter therapy, embolization or infusion.

Coding Tip: Clearly document in your procedure note all of the vessels that were studied and the findings of the study. In other words, state that the access was examined and that the draining veins were examined. Give the findings of both studies individually. It is also important to document both the medical necessity for doing a separate procedure (either selective catheterization or cannulation from a separate site) and the medical necessity for visualizing the draining vein.

1.1.3 Venous Angioplasty

There are two coding choices for a venous angioplasty - G0393 and 35476. The descriptor for the angioplasty code is – transluminal balloon angioplasty, venous. The code G0393 is a temporary code issued by CMS and has been designated as a column 2 code when paired with G0392 and a column 1 code when paired with 35476. This code is specific for venous angioplasty of the access (fistula or graft). It should be used only for a venous angioplasty performed on a lesion **within the access** (see definition below).The code 35476 should be used only for treatment of lesions in the central veins (see definition below). The code G0393 should be used only once in any case and cannot be used with the G code for angioplasty of the artery. If both an arterial and a venous angioplasty are done within the access, only the arterial should be coded.

The degree of stenosis should always be documented in the procedure report. A stenosis of 50% or greater as well as a clinical indication (poor flow, abnormal exam, prolonged bleeding, etc.) should be

required prior to performing an angioplasty. Either of these angioplasty codes should always be coupled with 75978 the code for radiological supervision and interpretation. The descriptor for this code is - transluminal balloon angioplasty, venous, radiological supervision and interpretation.

Table 3 - Venous Angioplasty Codes	
G0393	Venous, within the access
G0392	Arterial, within the access
35476	Venous, central lesion
35475	Arterial, excluding anastomosis

1.1.4 Multiple Venous Angioplasties
Before discussing the basic principles that govern the coding of multiple angioplasties, there are several principles that will need to be established.

1.1.4.1 Central veins versus peripheral veins
The terms central and peripheral veins, although commonly used, are not clearly defined in anatomical references. For our purposes, central veins will be defined as those within the boney thorax – subclavian, brachiocephalic and superior vena cava. In connection with the lower extremity, central veins will be defined as those within the boney pelvis and abdomen – external iliac, common iliac and inferior vena cava. All veins peripheral to these two central groups will be defined as peripheral veins.

1.1.4.2 Access definition
The vascular access or conduit should be considered to be a separate vessel by definition. For purposes of coding, the access, whether fistula or graft, should be considered to be from the arterial anastomosis through to the beginning of the central veins, i.e., the subclavian.   This should be thought of as a single conduit.

1.1.4.3 Multiple angioplasties
Situations in which multiple angioplasties may be coded are very limited. Although multiple stenotic lesion may be present within the contiguous venous drainage of the access up though the axillary vein (the definition of the access), their treatment only warrants a single code. A single code G0393 should be used for all lesions treated within this region. When one enters the central veins, any lesion present within a distinctly separate vascular structure, warrants a separate code. Treatment of these lesions would be coded with the code 35476. The supervision and interpretation code 75978 would be paired with each of the G0393 and 35476 angioplasty codes. The 35476 code may be used with G0393. In this instance, it is classified as a column 2 code and would therefore be listed with a -59 modifier. No more than two venous angioplasty codes should be used in any case.

If a single lesion extends across two adjacent separate vessels, treatment warrants only a single angioplasty code. In instances in which the exact anatomical identity of the vessel is critical for coding purposes (Figure 4), a lesion that bridges across two vessels should be defined by the vessel in which it lies predominantly. Two codes are warranted only in instances in which separate distinct lesions are present in separate vessels, provided that the two vessels qualify for separate coding based upon the access versus central veins rule as described.

Figure 4 – Lesion extends from cephalic arch into subclavian vein. a - The lesion is primarily in the subclavian and should be classified as a subclavian lesion. b - The lesion is about equally distributed between the cephalic and subclavian, it should be classified as the higher order vessel – the subclavian. c - The lesion is primarily in the cephalic and should be classified as a cephalic lesion.

1.1.4.4 Coding of multiple angioplasties

When multiple angioplasties have been performed there are certain rules that must be applied in coding:

- The arterial anastomosis should be considered part of the feeding artery and coded as an arterial angioplasty within the access using G0392 (see section 1.2.6.1 for details and basic principles).
- Any venous angioplasty within the access vessel (as defined) should be coded using G0393.
- Only one G0393 can be used in any case.
- G0392 and G0393 cannot be used together, since G0392 is a column 1 code, it should be applied if both a venous and an arterial lesion are treated within the access vessel.
- A venous lesion in the central veins that is treated should be coded using 35476. Each named vessel can be coded separately, but no more than two venous codes per case.
- When 35476 is paired with G0393 it is considered a column 2 code and should therefore have a -59 modifier attached.
- No more than 2 angioplasties of an access, its feeding artery and its drainage should be coded in any case (either one G0393 or G0392 and one 35476). Unless special, specific documentation is provided to indicate that it is an unusual circumstance.
- No more than one 35475 code in combination with G0392 should be used in any case.
- The supervision and interpretation code 75978 or 75962, as is appropriate, should be paired with each angioplasty code and the second usage should have a -59 modifier attached.

Table 4 – Venous and Arterial Angioplasties Used Together		
Codes	Yes	No
G0393 & G0392		X
G0393 & 35476	X	
G0392 & 35476	X	
35476 & 35476	X	
35475 & 35476	X	
G0392 & 35475	X	
35475 & 35475	X	

1.1.4.5 Multiple Angioplasties Not Warranted

There are definite instances when two codes should not be used.

- Performing multiple angioplasties from separate access sites does not warrant multiple codes.

- If there is double drainage and both have lesions that are treated, it should be coded as a single angioplasty

- If the case involves a bidirectional fistula and both limbs have lesions that are treated, it should be coded as a single angioplasty

1.2 SECONDARY CODES

These codes may be used in an occasional case where the need is dictated.

1.2.1 Catheterization of the Superior Vena Cava

The code for selective catheterization of the superior vena cava is 36010. The descriptor for this code is - introduction of catheter, superior or inferior vena cava. It requires a medical indication for the selective catheterization. The mere fact that you have a catheter in the central veins to administer medications or to do a "pull-back" venogram is not a medical indication (this might be the case with a thrombectomy). The most common medical indication is an instance where you cannot pass a guidewire, there is pathology present and flow through the area is marginal or not apparent. In such a case, selective catheterization of the superior vena cava may be medically indicated. When this code is used, the medical indication for the selective catheterization should be clearly documented. One should also document the fact that manipulation of the guidewire with a vascular catheter was necessary to gain the desired position for the angiogram (the definition of selective catheterization). Additionally, one should not use the 36145 code for cannulation with this code. The code 36010 is a column 1 code and therefore represents a higher order of accessing the vasculature and supersedes the use of 36145 which is a column 2 code.

1.2.2 Selective Catheterization of the Central Draining Veins

There are times when the central draining veins, i.e., the subclavian and brachiocephalic veins, are not well visualized with the routine procedure because of the pathology that is present. In these instances the routine angiogram is done, but these structures do not visualize because of a severe lesion preventing the passage of the radiocontrast. This lack of visualization represents an adequate medical indication for selective catheterization of the vein in question. When coupled with a medical indication for the angiographic study, then coding for selective catheterization, 36011, and for the angiogram as a separate procedure, 75820-59, are warranted. This is the appropriate code to use. Even though these are central veins, all venous structures (except for the superior and inferior vena cava) draining the upper extremity (or lower extremity), are bundled under the code for an angiogram of the extremity.

If an angiogram is performed in which the central veins on one side are approached by cannulating a vein in the opposite extremity and passing across to the side in question, then the 36011 code would be warranted as long as the procedure was performed using a catheter to manipulate the guidewire (the work component). This would also be the case if one were accessing the central veins of the upper extremity from a femoral approach. If the target vein was actually a division removed from the central veins, the jugular vein for example, the second order code 36012 would be warranted. In all of these instances guidewire manipulation using a vascular catheter is an absolute requirement.

The same rules for coding listed under selective coding above (paragraph 1.1.1.2) apply here. 36011 is column 1 code when paired with 36145. If it is used, the 36145 (the column 2 code) is dropped.

Coding Tip: When either the 36010 or the 36011 codes are used, be careful to fully document the medical necessity for the selective catheter placement as well as the medical necessity for the basic study such as 75827-59.

1.2.3 Second Cannulation
If the procedure being performed requires a second cannulation, then 36145 is used a second time with a modifier – 36145-59. An additional 36145 code would be warranted for each additional cannulation as long as they were medically indicated, each would need the -59 modified attached.

Coding Tip: Document the site of introduction and if more than one site is involved, clearly document each site. List the medical indication for each separate procedure. Modifier 59 will need to be attached to indicate introduction at a separate site.

1.2.4 Arteriogram
The code for arteriogram is 75710. The descriptor for this code is – angiogram, extremity, unilateral, radiological supervision and interpretation. There should also be a clear medical indication for the study. An examination of the artery adjacent to the arterial anastomosis is included in the 75790 code. This should be interpreted as being within 2 cm of the anastomosis. Use of the 75710 code would be warranted only if you examined a larger segment of the artery. Examination of the entire artery is not required, however. The general rule should be – examine that portion of the artery that is necessary to make a diagnostic evaluation related to your medical indication.

This arteriogram may be performed by selective catheterization of the artery or by occluding the access downstream and refluxing radiocontrast into the artery. The technique used to perform the arteriogram does not affect the use of the code. However, the extent of the segment of artery examined is important regardless of the technique used.

Coding Tip: If an arteriogram code is used, the procedure note should clearly define the medical indication for the study. If a selective catheterization is coded, the medical indication for the catheterization should also be detailed. The number of times the cannulation code 36145 is used should be decreased by one if selective catheterization is performed. Either the 36215 or the 36216 code supersedes the 36145 code. If a second cannulation was performed then only a single use of the 36145 code is warranted.

1.2.5 Cannulation of Brachial or Radial Artery
Occasionally, it is necessary to cannulate either the brachial or the radial artery in order to accomplish the required task. The code for cannulation of the brachial artery is 36120. The descriptor for this code is - introduction of needle or intracatheter; retrograde brachial artery. The code for cannulation of the radial artery is 36140. The descriptor for this code is - introduction of needle or intracatheter; retrograde extremity artery.

1.2.6 Arterial Angioplasty
As with venous angioplasty there are two codes that may be used for an arterial angioplasty – G0392 and 35475. The descriptor for both of these is the same - transluminal balloon angioplasty, brachiocephalic trunk or branches, each vessel. Additionally, when either code is used, it should be accompanied by the 75962 code for radiological supervision and interpretation. The descriptor for this code is - transluminal balloon angioplasty, peripheral artery, radiological supervision and interpretation.

These two codes for arterial angioplasty should be used differently. Angioplasty of stenosis at the arterial anastomosis of an arteriovenous hemodialysis access (graft or fistula) should be coded G0392. When a lesion within the feeding arteries is treated and is clearly separate from the anastomosis of the access, the 35475 code should be applied.
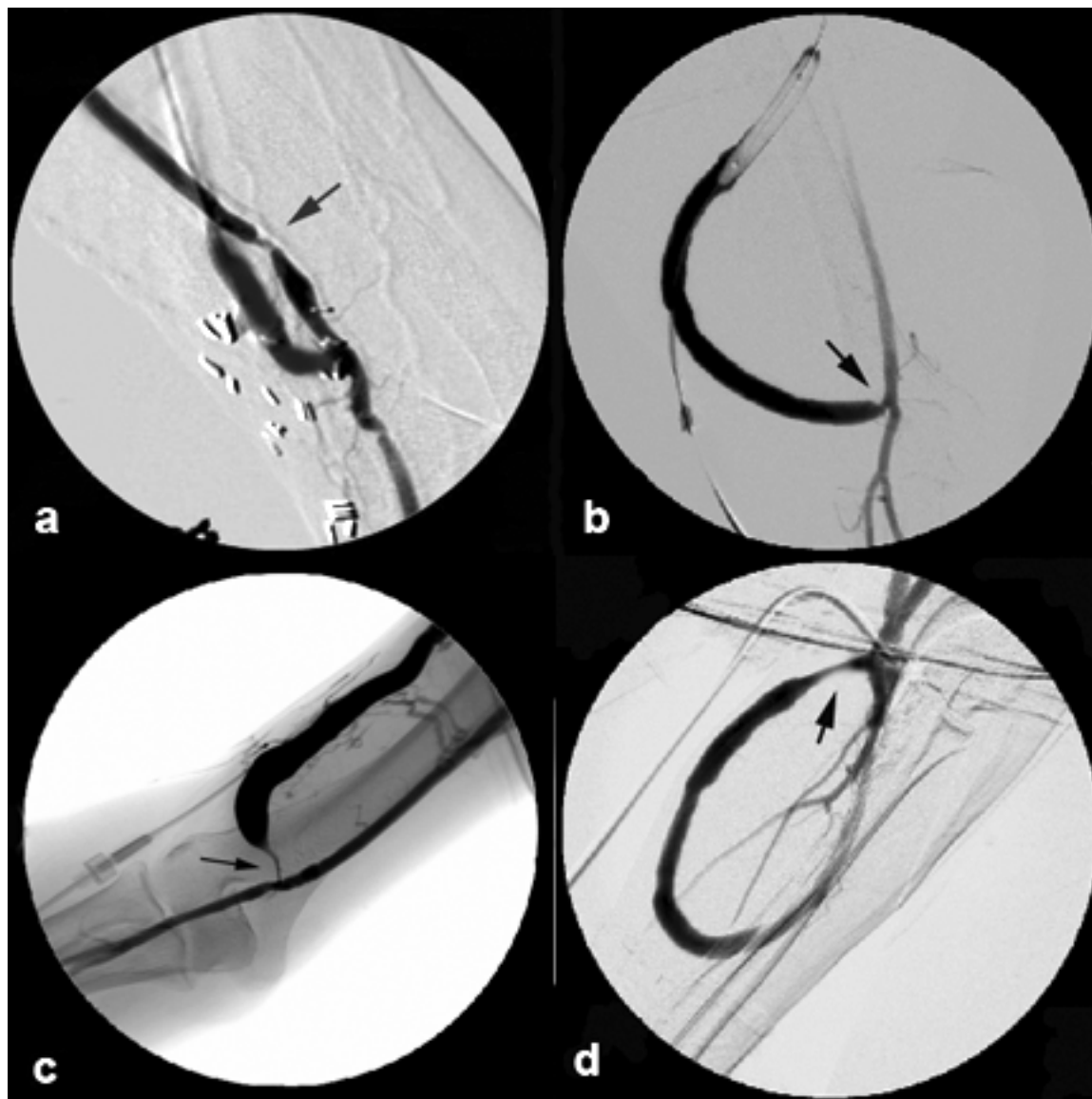

Figure 5 – a. Arterial lesion (arterial angioplasty), b. Anastomotic lesion (arterial angioplasty), c. Juxta-anastomotic and anastomotic lesions (arterial angioplasty), d. Juxta-anastomotic lesion (venous angioplasty).

1.2.6.1 Arterial anastomosis

The arterial anastomosis is defined as the surgically created junction of the access (fistula or graft) and the artery. As such, stenosis of this anatomic location often involves the artery proper. When the artery is involved in the stenosis, the arterial anastomosis should be considered part of the arterial inflow tract and coded as an arterial angioplasty using G0392. Sometimes it is difficult to define radiographically exactly where the anastomosis is located. The guiding principle is - when the balloon must be in the artery in order to perform the angioplasty, it should be coded G0392 or arterial angioplasty. Treatment of this

site is typically performed utilizing retrograde cannulation of the arteriovenous access and also applies in situations where direct cannulation of an artery is required.

Coding Tip: *Documentation should include the radiographic involvement of the artery and/or balloon location along with comment that the stenosis involves the* **"arterial anastomosis and arterial inflow tract".**

Since its use is restricted in this manner, only one G0392 can be used and as previously discussed it cannot be used together with G0393. When this code is paired with G0393, G0392 is a column 1 code. The column 2 code of the pair, G0393, should be dropped. In other words, these two codes mutually exclusive, i.e., cannot be used together (see discussion on page 4 – NCCI edit).

Table 5 – Arterial Angioplasty Locations

Considered arterial angioplasty
       Arterial anastomosis
       Juxta-anastomotic artery
       Feeding artery at any point up through central veins

Not considered arterial angioplasty
       Juxta-anastomotic access (vein or graft)

1.2.6.2 Feeding artery

When a lesion within the feeding arteries is treated and is clearly separate from the anastomosis of the access, the 35475 code should be applied. An arterial lesion that lies within 2 cm of the anastomosis should be classified as the anastomosis and be coded with the appropriate G code. If an arterial lesion is continuous with an anastomotic lesion, it should be considered as part of the anastomosis and covered by the G0392 code used for that structure. If, however, the lesion is in a portion of the arterial tree not contiguous with the anastomosis and more than 2 cm removed from it, the code 35475 should be used. If both types of lesions are present the code pair G0392 and 35475 would be used. In this instance, with this code pair, G0392 would be a column 1 code and 35475 would be a column 2. These two codes are not mutually exclusive, i.e., they can be used together. The column 2 code, 35475, would need to have the -59 modifier attached. The use of the 35475 code would be appropriate for all arterial lesions up though the central arteries.

In the case of a thigh graft, the femoral artery is generally the site of the arterial anastomosis. If the lesion is in the non-contiguous femoral artery there is a unique code for this vessel. The code for a femoral artery angioplasty is 35474. The descriptor for this code is - transluminal balloon angioplasty, femoral - popliteal.

The supervision and interpretation code 75962 would be paired with each arterial angioplasty code and any second usage should have a -59 modifier attached.

1.2.7 EKG Monitoring
In the past, the code for EKG interpretation, 93040, could be used for the monitoring performed during an interventional procedure. This is no longer the case. EKG interpretation is bundled with the basic procedure for which monitoring is being performed.

1.3 COMPLICATION MANAGEMENT CODES
If a complication of the angioplasty treatment occurs, its management may also generate additional codes. The major complication of an angioplasty is vein rupture. In some instances this needs to be stented.

1.3.1 Stent Placement
The code for stent placement is 37205. The descriptor for this code is – transcatheter placement of an intravascular stent(s), (non-coronary vessel), percutaneous; initial vessel. The code 75960 is used to report the radiological supervision and interpretation for this procedure. The descriptor for this code is - transcatheter placement of an intravascular stent, (non-coronary vessel), percutaneous and/or open, radiological supervision and interpretation, each vessel. If a second stent is placed, an additional code – 37206 would be warranted if it involves a second named vessel. The descriptor for this code is - transcatheter placement of an intravascular stent(s), each additional vessel. In this instance both the 37205 and the 37206 codes would be used. The radiological supervision and interpretation code 75960 would be used twice, once with each placement code. The second usage should be accompanied by the -59 modifier to indicate that it was a separate procedure. If two stents are placed in the same vessel, only the initial code 37205 is warranted.

If a single lesion extends across two adjacent named vessels, treatment warrants only one 37205 code. Two codes are warranted only in instances in which separate distinct lesions are stented in separate named vessels.

For purposes of coding, the access itself is considered a separate vessel as previously described (paragraph 1.1.4.2). This vessel is considered to extend from the arterial anastomosis up to the central veins. Although multiple lesions may be present within the contiguous venous drainage of the access up though the axillary vein, their treatment only warrants a single 37205 code. When one enters the central veins, any lesion stented within a separate named vascular structure, warrants a separate code.

The supervision and interpretation code 75960 should be paired with each stent code. Where more than one stent code is warranted, each code would be paired with a 75960 code. Each such code after the first should have the modifier -59 attached to indicate that it is a separate procedure.

The code for stenting does not bundle any associated angioplasty procedures. These procedures would be coded separately and independently from the stenting procedure(s).

Coding Tip: The medical indication for the stenting should be clearly documented in the record.

Note: The rules for determining separate vessels for stenting are the same as for venous angioplasty discussed above.

2. Thrombectomy

2.1 PRIMARY CODES

All of the codes used in reporting an angioplasty would be appropriate for use in a thrombectomy because of the commonality of the procedures. There is actually only one unique code that would need to be added to the primary list.

Table 6 - Codes Used for Thrombectomy

Primary -
   36145 – Cannulation
   36145-59 – Second cannulation
   75790 – Angiogram of graft or fistula
   75710 - Arteriogram
   36870 - Thrombectomy
   G0393 – Venous angioplasty of the conduit
   75978 – Supervision and interpretation of G-0393 (and 35476)

Secondary (occasional) -
   G0392 – Angioplasty of the artery/anastomosis of the access
   75962 – Supervision and interpretation of G-0392 (and 35475)
   35476 - Angioplasty of central vein (not part of conduit)
   75978 – Supervision and interpretation of 35476 (and G-0393)
   35475 - Angioplasty of artery not contiguous with the access
   75962 –Supervision and interpretation of 35475 (and G-0392)
   75820-59 – Angiogram of draining veins (separate procedure)
   75827-59 – Angiogram of superior vena cava (separate procedure)
   75825-59 - Angiogram of inferior vena cava (separate procedure)
   36011 - Selective catheterization of central draining veins from a larger vessel
   36010 - Selective catheterization of SVC or IVC
   36215 - Selective catheterization 1st order branch (arterial - upper extremity)
   36216 - Selective catheterization 2nd order branch (arterial - upper extremity)
   35245 – Selective catheterization of 1st order branch (arterial - lower extremity)
   36120 - Cannulation of brachial artery

2.1.1 Thrombectomy

The code for thrombectomy is 36870. The descriptor for this code is – thrombectomy, percutaneous, fistula, autogenous or non-autogenous graft (includes mechanical thrombus extraction and intra-graft thrombolysis). This code is used to describe the removal of a thrombus from the access, graft or fistula, regardless of the method used. It includes both mechanical and pharmacological techniques. It does not include the other codes that are grouped under the overall combined procedure that is performed to declot a dialysis access. It is important to note that treatment of occlusion without demonstrated thrombus is not considered to be a thrombectomy and should not be coded as such.

Note: If a lytic enzyme is administered use of a "J" code for the medication would be warranted. The code for tPA is J2997. This code is for a 1 mg dose. If more than 1 mg is used, the code would be used more than once (equal to the number of mg used).

2.1.2 Arteriogram

The code for arteriogram is 75710. This code has already been described above in association with angioplasty codes. However, it may be more commonly indicated in connection with a thrombectomy. The fact that the graft is clotted may be a reasonable indication for study of the artery. Additionally, evaluation of the case for possible peripheral embolization post procedure may require an arteriogram. Since residual thrombi may be present even after the access has been opened and flow has been restored, selective catheterization (requires guidewire manipulation with a vascular catheter) of the artery to accomplish the arteriogram may be necessary. This would warrant the use of the code 36215 (for a first order branch) or 36216 (for a second order branch). If one of these codes is used, then one cannulation code 36145 should be dropped.

Coding Tip: If this procedure is coded, the procedure note should document the fact and report the findings individually .In addition, the medical indication for selective catheterization of the artery should be clearly stated.

2.2 IN SITU THROMBOSIS OUTSIDE OF ACCESS

Although not a common occurrence, there are instances in which *in situ* thrombosis of the artery feeding an access or a vein in the drainage of the access is encountered. Thrombectomy of these structures that lie outside of the defined dialysis vascular access is necessary and warrants a separate code.

2.2.1 Arterial Thrombectomy

The appropriate code for a thrombectomy of an *in situ* thrombosis of the feeding artery is 37184. The descriptor for this code is - primary percutaneous transluminal mechanical thrombectomy, noncoronary, arterial or arterial bypass graft including fluoroscopic guidance and intraprocedural pharmacological thrombolytic injection(s); initial vessel. This code should not be used for the treatment of an embolectomy.

2.2.2 Venous Thrombectomy

The appropriate code to use for thrombectomy of an in situ thrombosis of a vein draining the dialysis vascular access is 37187. The descriptor for this code is percutaneous transluminal mechanical thrombectomy, vein(s), including intraprocedural pharmacological thrombolytic injections and fluoroscopic guidance. If the thrombus that is the vein is merely an extension of the access thrombosis, this code should not be used. Likewise, if the condition being treated is actually an embolus of thrombus from the access, this code should not be used.

Coding Tip: If either of the in situ thrombectomy codes is used, one should be sure that the thrombus that is evident is not just a short segment of clot or embolus that is being encountered in association with a thrombosed access. The thrombus in question must be clearly in situ.

2.3 COMPLICATION MANAGEMENT CODES

If a complication of the thrombectomy treatment occurs, its management may also generate additional codes. In addition to the complications associated with angioplasty, the major complication of thrombectomy is peripheral arterial embolization. This may require an embolectomy. This procedure will necessarily require an arteriogram (75710) and very likely selective catheter placement in addition to the actual embolectomy.

2.3.1 Selective Catheterization of a 1st Order Branch (Artery)
The first step in the procedure for embolus removal generally involves selective catheterization of the artery. If this is a first order branch, the code for this is 36215. The descriptor for this code is – selective catheter placement, arterial system; each first order thoracic or brachiocephalic branch, within a vascular family. The brachial artery would be classified as a first order branch if that is the first artery entered. In the case of an access fed directly from the radial artery, then this vessel would be the first order branch. (See detailed discussion of 1st and 2nd order vessels earlier in this document - paragraph 1.1.1.2).

2.3.2 Selective Catheterization of a 2nd Order Branch (Artery)
If the procedure also requires passing through the brachial artery and the selective catheterization of either the radial or ulnar artery, then this would necessitate a different code. The code would be 36216. The descriptor for this code is - selective catheter placement, arterial system; initial second order thoracic or brachiocephalic branch, within a vascular family. Both the radial and ulnar arteries would be considered second order branches.

Important coding principle – Any type of selective catheterization is a column 1 code (see details on page 4) and non-selective cannulation is a column 2 code. Therefore, the two cannot be used together for the same site. When the access is cannulated, the non-selective code is warranted; however, if a selective catheterization is then performed through this site, the non-selective code is dropped in favor of the selective code. The column 1 code always takes precedence. If the access is cannulated a second (or more) time, a non-selective code with a 59 modifier would be warranted. The basic principle is - each time a site is used for a selective catheterization, the non-selective code is dropped in favor of the selective one. Also, only the most selective portion of the procedure is coded. In other words, if the brachial artery is cannulated in the process of placing a catheter in the radial artery, only the radial artery cannulation is coded.

2.3.3 Embolectomy of Brachial Artery
Embolization symptoms are generally immediate. Treatment of this complication is necessary; this generally generates a series of codes. The code for embolectomy of an artery is 37186-59. The descriptor for this code is - secondary percutaneous transluminal thrombectomy, arterial or arterial bypass graft, including fluoroscopic guidance and intraprocedural pharmacological thrombolytic injections, provided in conjunction with a percutaneous intervention other than primary mechanical thrombectomy. The -59 modifier should be attached to the primary 37186 code because, as the descriptor states, this code should not be used with the mechanical thrombectomy code 36870. Since in the instance being described here, the embolectomy is a separate, distinct procedure, the 59 modifier should be attached to designate it as such.

Table 7 - Codes for Embolectomy

75710 – Arteriogram
36215 - Selective catheterization first order branch (arterial - upper extremity)
36216 - Selective catheterization second order branch (arterial - upper extremity)
35245 – Selective catheterization of first order branch (arterial - lower extremity)
37186-59 - Embolectomy during declotting procedure (regardless of treatment modality)

When an embolus occurs as a complication of a mechanical thrombectomy, it generally lodges in the brachial artery, just above the bifurcation. However, at times, it may pass into the radial or ulnar arteries. For the purpose of coding, the exact location of the embolus is not important. The 37186-59 should be used regardless of the site of the embolus.

If a decision was made to treat the embolus with lytic therapy, the same 37186-59 code would apply. The fact that a lytic enzyme was administered would warrant the use of a "J" code for the medication. The code for tPA is J2997. This code is for a 1 mg dose. If more than 1 mg is used, the code would be used more than once (equal to the number of mg used).

Coding tip: There is a "J" code for every medication that might be used. Each of these codes designates the unit of medication that a single code represents. Each medication used can be coded.

3. Ultrasound Evaluation of Access

There are instances in which the evaluation of the vascular access using duplex ultrasound is medically indicated. The code for this study is 93990. The descriptor for this code is – duplex scan of hemodialysis access (including arterial inflow, body of access and venous outflow. It is important to note that this must include evaluation of the artery and vein associated with the access. Additionally, as the descriptor indicates, and evaluation of the arterial inflow and venous outflow is required. As usual, clear documentation of medical indication and image documentation of the study performed is important.

Coding Tip: It is important to note that in instances in which the access is evaluated using both ultra sound and angiography, only one modality can be coded. Since the angiography code is the higher level of the two, it would generally be the one used.

4. Vascular Mapping

Vascular mapping should be considered in the evaluation of a patient for the placement of a dialysis vascular access. The goal here is to identify venous anatomy that would be conducive to the creation of the best possible access for that patient; generally this means an arteriovenous fistula. How this procedure is coded depends upon the patient's situation related to previous access placement.

If the patient has not had a previous fistula or graft, the temporary code G-0365 should be used. The descriptor for this code is - mapping of vessel for hemodialysis access (services for preoperative vessel mapping prior to creation of hemodialysis access using an autogenous hemodialysis conduit, including arterial inflow and venous outflow). In order to qualify for this code, imaging can be done using any technique or combination of techniques. It should be noted that the descriptor for this code specifies that both the venous and arterial anatomy must be evaluated. If only the veins are imaged, a - 52 modifier should be attached to the code to indicate a reduced level of service. The G-0365 code is for one extremity only, if both upper extremities are examined the code should be listed a second time with a – 59 modifier to indicate a separate distinct service. It is important to note that the use of this code is restricted to a patient that has not had a prior dialysis access graft or fistula. Additionally, it can only be used two times a year.

Vascular mapping may be done using ultrasound, angiography or a combination of both. The code G-0365 covers all of these techniques. However, this is a radiological code; it does not preclude the use of

surgical codes that might be warranted based upon the type of procedure performed. If, for example, the vein mapping portion of the study was performed by angiography, the code 36005 (cannulation of vein and injection of contrast) may be applied.

```
Table 8 - Vascular Mapping

No prior arteriovenous access
        G-0365 – includes all studies by any modality

Prior arteriovenous access
  Ultrasound codes
        93930 – Ultrasound of artery, bilateral
        93931 – Ultrasound of artery, unilateral
        93970 – Ultrasound of vein, bilateral
        93971 – Ultrasound of vein, unilateral
Angiographic codes
        36005 - Cannulation of vein and injection of contrast
        36005-59- Cannulation/injection of second arm
        75820 - Venogram of single arm
        75822 - Venogram of both arms
        75827 - Venogram of SVC
```

In the case of a patient who has had a prior arteriovenous dialysis access (graft or fistula), coding for vascular mapping involves the use of a group of codes. If done radiographically, this procedure would involve the use of codes for cannulation of a vein, the injection of contrast and the performance of a venogram. If done by ultrasound, the codes would be those for ultrasound of the artery and vein of the extremity. If a combination of both is utilized for the evaluation then an appropriate combination of codes would be warranted. The codes that should be used are as follows:

4.1 ANGIOGRAPHIC STUDY

4.1.1 Cannulation and Injection of Contrast
The code for this procedure is 36005. The descriptor for this code is - injection procedure for contrast venography (including introduction of needle or intracatheter). If the study is bilateral, then the code would be used a second time with the -59 modifier. This code should not be used at any time when a fistula or graft is cannulated. Its use is restricted only to vein cannulation as with the performance of a venogram.

Coding Tip: Document the fact that more than one site is involved, clearly document each site. Modifier 59 will need to be attached to indicate that this is a separate site.

4.1.2 Venogram
There are two possible codes that could be used. The choice depends upon whether the venous mapping involves both arms or only one. The code for a single arm is 75820. The descriptor for this is – venography, extremity, unilateral, radiological supervision and interpretation. This code includes all of the veins up through the superior vena cava. If the study is bilateral then the code 75822 should be used. The descriptor for this code is - venography, extremity, bilateral, radiological supervision and interpretation

4.1.3 Superior Vena Cava Angiogram

The code for study of the superior vena cava is 75827. The descriptor for this is - venography caval, superior, with serialography, radiological supervision and interpretation. It should be noted that according to the descriptor, the 75827 code is for the superior vena cava and not for central veins in general. If the 75827 code is used, the medical indication for the procedure should be clearly stated.

Coding Tip: *If a superior vena cava angiogram is coded, one should be sure that that vascular structure was clearly demonstrated in detail. It should be a complete study. Additionally, the medical indication for a complete study should be clearly documented.*

4.2 ULTRASOUND STUDY

4.2.1 Ultrasound Study of Artery

The codes for performing ultrasound studies on the artery are 93930 and 93931. The choice of appropriate code depends on whether it is a **unilateral or bilateral study**. The code 93930 is for the bilateral study. Its descriptor states – duplex scan of the upper extremity arteries or arterial bypass grafts; complete bilateral study. The code for a unilateral study is – 93931. Its descriptor states – duplex scan of the upper extremity arteries or arterial bypass grafts; unilateral or limited study. These codes would include all ultrasound evaluation performed on the artery or arteries during the course of the study.

4.2.2 Ultrasound Study of Vein

The codes for performic ultrasound studies on the vein are 93970 and 93971. The choice of appropriate code depends on whether it is a unilateral or bilateral study. The code 93970 is for the bilateral study. Its descriptor states – duplex scan of the upper extremity veins including compression and other maneuvers; complete bilateral study. The code for a unilateral study is – 93971. Its descriptor states – duplex scan of the upper extremity veins including compression and other maneuvers; unilateral or limited study. These codes would include all ultrasound evaluation performed on the veins during the course of the study.

It is important to note that **imaging of a vessel by only one modality can be coded** at a single session. if both an ultrasound study and an angiogram are performed, only one can be coded. Since the angiographic study is the higher order study of the two, it will be the one generally chosen for assigning a code.

5. Arteriovenous Fistula - Treatment of Accessory Vein

5.1 PRIMARY CODES

A number of the basic codes already discussed would be used here. These include 36145 – cannulation and 75790 – angiogram of the fistula. The actual technique used to obliterate the vein would be unique to the procedure used to treat the accessory vein.

5.1.1 Cannulation

The non-selective cannulation code 36145 would be appropriate for use here but **would be superseded by the selective cannulation code** used for the selective catheterization of the accessory vein as discussed below. The 36145 code would be listed only if more than one cannulation was performed during the course of the procedure. A -59 modifier should be used to indi9cate that it was a separate procedure.

5.1.2 Vein Ligation

The code used for this procedure is 37607. The descriptor for this code is – ligation or banding of angioaccess arteriovenous fistula. This code **should only be used once**, regardless of the number of vessels ligated or the method of ligation.

Table 9 - Accessory Vein Obliteration

Common codes –
36145 – Cannulation of fistula
75790 – Angiogram of fistula

Ligation technique –
37607 –Ligation

Coil insertion –
36011 – Selective cannulation of 1st order vein
36012 - Selective cannulation of 2nd order vein
37204 – Placement of coil
75894 – Supervision and interpretation of 37204
75898 – Post coil angiogram via catheter

5.1.3 Insertion of Coil

Several codes are generated by this procedure. Firstly, the accessory vein must be selectively catheterized. The code for selective catheterization of a 1st order venous branch is 36011. The descriptor for this code is – introduction of needle or intracatheter, vein; first order branch. The code for catheterization of a 2nd order venous branch is 36012. The descriptor for this code is – introduction of needle or intracatheter, vein; second order, or more selective, branch. Of course the **non-selective cannulation code 36145 should be dropped each time a selective code is applied.**
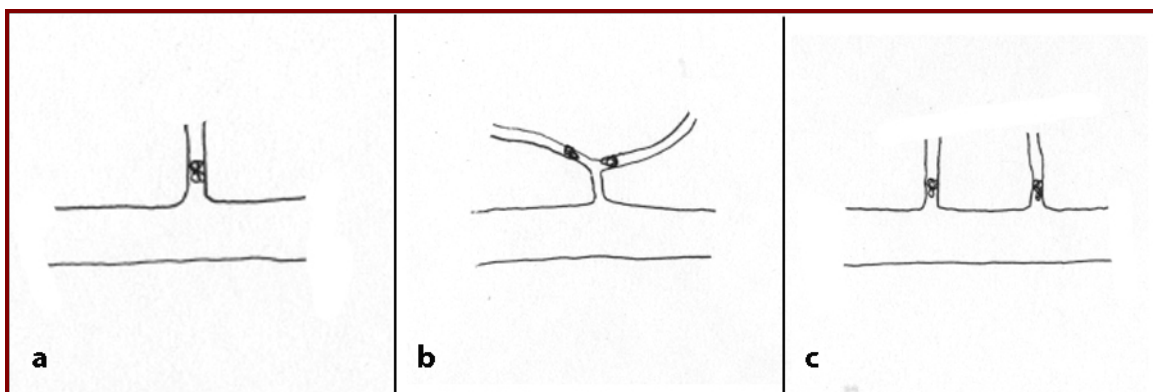
Figure 6 – Placement of coils. a – Single vein – one code, b – Single field – one code, c – Two veins – two codes.

Placement of the coil warrants the code 37204. The descriptor for this code is – transcatheter occlusion or embolization, percutaneous, any method, non-central nervous system, non-head or neck. Code 75894 describes the radiological supervision and interpretation for the coil placement code. The descriptor for this code is – transcatheter therapy, embolization, any method, radiological supervision and interpretation. In practice this pair of codes is used only once even though more than one coil may be placed.

There are instances in which, for one reason or another, branches of a vessel that comes off of the fistula are coiled to accomplish the desired goal. This should be viewed as a field of veins attached to a single trunk vessel (Figure 6) that comes off of the fistula. Only one code should be used for each field of veins. In other words, regardless of the number of branches coiled, the determining factor is the number of single vessel trunks attached to the fistula. Coiling branches may, however, result in the need to selectively catheterize 2nd order branches.

It is possible to code for a follow-up angiogram following the placement of an embolization coil. The code for this is 75898. The descriptor for this code is angiography through existing catheter for follow-up study for transcatheter therapy, embolization or infusion. As the descriptor indicates this angiogram is one where doing it through the catheter that is in place (for insertion of the coil) is required.

Coding tip - Clearly document the fact that a vein was selectively catheterized to justify the use of the selective catheterization code for this procedure. Also if you use the post coil angiogram code, document clearly that it was performed through the catheter that was in place.

6. Tunneled Catheter Procedures

6.1 PRIMARY CODES

6.1.1 Insertion of Tunneled Catheter

As with the other procedures already discussed, the insertion of a tunneled dialysis catheter generates a group of codes. There are several **primary codes** that are used in every case. Additionally, there are secondary codes that may occasionally be used, if the need arises.

6.1.2 Ultrasound Guidance

The code for ultrasound guided cannulation when inserting a tunneled catheter is 76937. The descriptor for this code is - ultrasound guidance for vascular access requiring ultrasound evaluation of potential access sites, documentation of selected vessel patency, concurrent realtime ultrasound visualization of vascular needle entry, with permanent recording and reporting. As indicated in the descriptor, use of this code requires that an image be made and made part of the permanent record. This code should not be used in cases where the vein is only examined by ultrasound and the cannulation is not actually ultrasound guided (real-time).

Coding tip: In order to use this code, a permanent record of the image generated must be generated.

Table 10 – Insertion of Tunneled Dialysis Catheter

Primary codes –
76937 - Ultrasound guidance
77001– Fluoroscopy guidance
36558 – Catheter insertion
36565 - Dual catheter insertion via separate sites

Secondary codes –
35476 – Venous angioplasty
75978 – Supervision and interpretation for 35476

6.1.3 Fluoroscopic Guidance

The code for fluoroscopic guidance used in connection with the placement of a central venous device is 77001. The descriptor for this code is - fluoroscopic guidance for central venous access device placement, replacement (catheter only or complete), or removal (includes fluoroscopic guidance for vascular access and catheter manipulation, any necessary contrast injections through access site or catheter with related venography radiologic supervision and interpretation, and radiologic documentation of final catheter position). This code also includes any angiographic study that might be performed in conjunction with the catheter placement. It is possible to have an angiographic study qualify as a separate procedure if it is done by selective catheterization or if it is done from a separate access site. In such an instance, a 59 modified should be attached to the code to indicate that it is a separate procedure.

Coding tip: This code includes the injection of radiocontrast, therefore, codes for angiography of the central veins or superior vena cava should not be used with it unless they qualify as a separate procedure. If this is the case, then the code should be used with a -59 modifier. This applies to all catheter related procedures where fluoroscopic guidance is used.

6.1.4 Catheter Insertion

The code used for the actual catheter insertion is 36558. The descriptor for this code is – insertion of tunneled centrally inserted central venous catheter, without subcutaneous port or pump. Over 5 years of age. This code is for the instance in which a single tunneled catheter is inserted. If two structurally separate catheters are inserted into two separate venous sites, the appropriate code would be 36565. The descriptor for this code is - insertion of tunneled centrally inserted central venous access device, requiring two catheters via two separate venous access sites, without subcutaneous port or pump. The descriptor indicates that if this later code is to be used, the two catheters must be inserted via separate access sites. A dual catheter inserted through a single venous access site would not qualify.

Coding tip - Clearly document the fact that two catheters were inserted at separate venous access sites. This refers to dual catheters such as the Tesio catheter. If the wrong size catheter was inserted, removed and replaced with the correct size, it should still be coded as a single catheter.

6.2 SECONDARY CODES

There are times when the central veins are stenotic and require angioplasty before the tunneled catheter can be inserted. These additional secondary procedures generate additional codes. These are the same codes that were discussed above. They will be listed again here in order to point out unique aspects.

6.2.1 Venous Angioplasty

The code for venous angioplasty is 35476. The descriptor for this code is – transluminal balloon angioplasty, venous. Code 75978 describes the radiological supervision and interpretation. The descriptor for this latter code is transluminal balloon angioplasty, venous, radiological supervision and interpretation. At times when a tunneled catheter is being placed, significant venous stenosis is encountered and complicates the insertion. If a significant stenosis is present, then it should be dilated. In this instance the appropriate codes would need to be applied.

Coding tip - If a venous angioplasty is performed, clearly document the vessel involved and the degree of stenosis as you would any other time this code is applied.

6.2.2 Unusual Circumstances

In an occasional instance, after cannulation of the vein for the placement of a tunneled catheter, difficulty is encountered in passing the guidewire. If, after examining the vein angiographically, it is decided to abandon that site and move to the opposite side, additional codes may be warranted. The use of the code 77001 should be used for the site that is actually used to insert the catheter. This code also includes (bundles) any angiographic studies that are done in connection with the placement of the catheter. However, the original attempt represents a separate venous access site and therefore meets the definition of a separate procedure. In this instances a non-selective cannulation code and a code for an angiogram is warranted. Neither of the two non-selective cannulation codes that have been used with a peripheral access is appropriate here. The code 36145 is used for grafts and fistulas; the code 36005 is specific for a vein cannulated for the performance of an extremity venogram. Unfortunately, there is no code specifically for this contingency. The code 36000 is the best choice for use here. The descriptor for this code is - introduction of needle or intracatheter, vein. Additionally, the code superior vena cava 75827 would be warranted for use with a -59 modifier if this vessel was imaged.

If it is necessary to do a selective catheterization of the superior vena cava in order to angiographically visual this structure (requires manipulation of the guidewire with a vascular catheter), the code for selective catheterization of the superior vena cava, 36010 would be warranted.

Coding tip – In doing a selective catheterization of the SVC, a vascular catheter should be used. Doing this with the dialysis catheter should not be deemed to qualify. As in all things medical necessity is required and good documentation is critical.

6.3 EVALUATION OF EXISTING TUNNELED CATHETER
There are instances in which the evaluation of an existing tunneled catheter using fluoroscopy with radiocontrast injection is medically indicated. The code for this is 36598. The descriptor for this code states - contrast injection(s) for radiologic evaluation of existing central venous access device, including fluoroscopy, image documentation and report. It is important to note that this requires image documentation. There are restrictions of the use of this code. It cannot be used with 36596 - mechanical removal of intraluminal (intracatheter) obstructive material from a central venous device through device lumen. It can also not be used with 75902 - mechanical removal of intraluminal (intracatheter) obstructive material from a central venous device through device lumen. Additionally, this code should not be use for evaluation of catheter prior to exchange, insertion or removal.

6.4 TUNNELED CATHETER REPAIR
Some catheters are made with a replaceable hub. When it becomes damaged, repair of the hub may allow for the salvage of the catheter. The code for catheter repair is 36575. The descriptor for the code is - repair of tunneled or non-tunneled central venous access catheter, without subcutaneous port or pump.

6.5 TUNNELED CATHETER REMOVAL
With most catheters this is a rather simple procedure providing the catheter was properly place. Catheter removal is performed under two circumstances. Firstly, the catheter is no longer needed; it is being removed, not to be immediately replaced. Secondly, its need is continuing, but it must be exchanged with a new catheter. The coding for the simple removal would be as follows.

6.5.1 Catheter Removal
The code for catheter removal is 36589. The descriptor for this code is – removal of implantable venous access device and/or subcutaneous reservoir. If the catheter is to be replaced then the use of this removal code would depend on whether it is to be replaced at the same venous entry site or a new one as described below.

6.5.2 Tunneled Catheter Exchange (Replacement)
The key factor in coding of a catheter replacement is the venous entry site. If the old entry site is also used for the new catheter, it is classified and coded as an exchange. This is true even if a new tunnel and exit site were created. If a new venous entry site is used for the new catheter, abandoning the old site, it is classified as a removal and new catheter insertion. This is true even if it is on the same side.

6.5.2.1 Same Venous Entry Site
If the old catheter is removed and replaced at the same site such as replacement over a guidewire, it should be coded as a catheter exchange. The code for this is 36581. The descriptor for this code is - replacement, complete, of a tunneled centrally inserted central venous catheter, without subcutaneous port or pump through the same venous access.

Table 11 - Catheter Exchange - Same Venous Access Site

Primary codes –
      77001 – Fluoroscopy
      36581 – Catheter exchange

Secondary codes –
      35476 – Venous angioplasty for fibrin sheath removal
      75978 – Supervision and interpretation for 35476

6.5.2.2 New Venous Access Site

If the new catheter is placed at a new venous access site after the old one has been removed, then two codes would be used. The catheter removal code - 36589 would be appropriate for the removal and the catheter insertion code - 36558 would be used for the new catheter placement.

Coding tip - If the two codes are used for a catheter replacement, it is important to document the fact that the new catheter was placed with a new venous access site and not through the old site over a guidewire.

6.5.3 Fibrin Sheath Removal

A fibrin sheath forms when a tunneled catheter is in place for even a short period of time. A venous stenosis is frequently associated with the fibrin sheath at the venous entry site. This may be related to the fact that the sheath is actually fibro-epithelial and starts at the venotomy site. Additionally, the sheath itself represents intraluminal obstructing material when a catheter is being exchanged at the same site. In order to avoid the risk of this anomaly interfering with the function of the newly placed catheter, it should be removed. Dilatation with an angioplasty balloon is a very effective maneuver in eradicating the sheath as well as any associated stenosis. Therefore the venous angioplasty procedure appears to be warranted when a fibrin sheath is removed during the course of a tunneled catheter exchange if it is done through the venous entry site rather than through a separate venous access.

The code for venous angioplasty is 35476. The descriptor for this code is – transluminal balloon angioplasty, venous. Code 75978 describes the radiological supervision and interpretation. The descriptor for this latter code is transluminal balloon angioplasty, venous, radiological supervision and interpretation.

Coding tip - The presence of the fibrin sheath, the vessel affected and the degree of any stenosis detected should be described and documented.

6.5.4 Intraluminal Removal of Catheter Thrombus

If a thrombosed catheter is treated mechanically with an endoluminal brush or guidewire to remove a thrombus and restore its function the use of the code 36596 is warranted. The descriptor for this code is - mechanical removal of intraluminal (intracatheter) obstructive material from a central venous device through device lumen. If this is done under fluoroscopic guidance there is a supervision and interpretation code to accompany it. This code is 75902. The descriptor for this code is - mechanical removal of intraluminal (intracatheter) obstructive material from a central venous device through device lumen, radiologic supervision and interpretation.
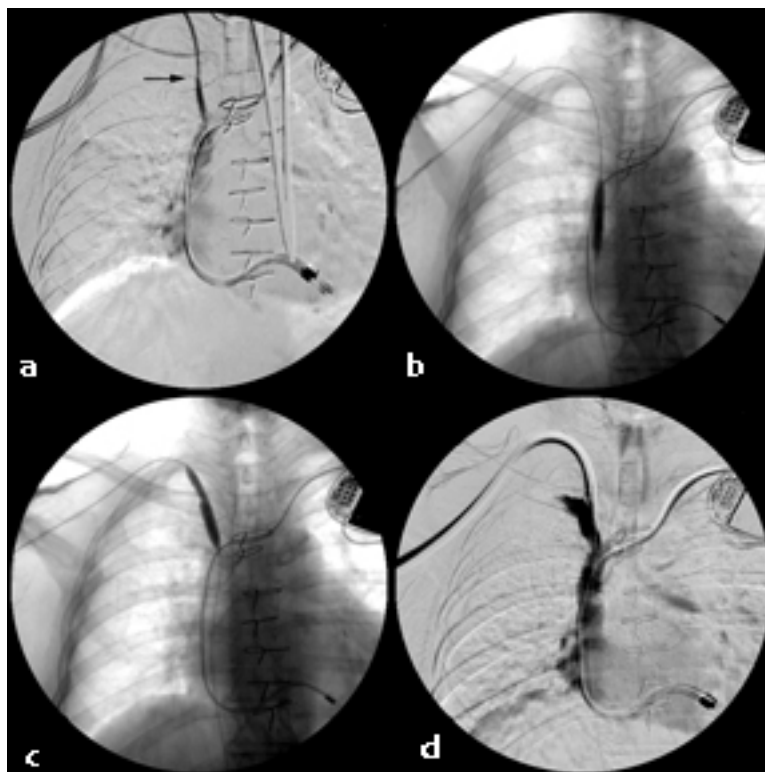
Figure 7 – Treatment of fibrin sheath. a – The old catheter has been freed and the tip (arrow) pulled back to level of clavicle, radiocontrast was injected to demonstrate presence of sheath (below arrow). b – Angioplasty balloon has been inserted and passed to level below the sheath. c – Angioplasty balloon has been inflated in area of sheath, the stenosis that is present is apparent. d – New catheter has been inserted to point that tip is at level of clavicle; radiocontrast was injected to demonstrate absence of sheath.

7. Non-tunneled Catheter Procedures

There are unique codes, separate from those that are used for tunneled catheters that are designated for use with non-tunneled devices. It is of some importance to note that these codes are not reserved for use with dialysis catheters. They can, in fact, be used for any type of catheter that is to be used for any purpose. These codes are as follows:

For non-tunneled catheter insertion the code is 36556. The descriptor for this code is- insertion of non-tunneled centrally inserted central venous catheter. Over 5 years of age.

For non-tunneled catheter repair the code is 36575. The descriptor for this code is - repair of tunneled or non-tunneled central venous access catheter, without subcutaneous port or pump.

For non-tunneled catheter exchange the code is 36580. The descriptor for this code is - replacement, complete, of a non-tunneled centrally inserted central venous catheter, without subcutaneous port or pump through the same venous access

For non-tunneled catheter removal there is no code available. The CPT Coding Manual clearly states that the codes for removal of tunneled catheters should not be used.

In addition to these specific codes for procedures involving non-tunneled catheters, other ancillary codes such as those for ultrasound (76937) and fluoroscopic guidance (77001) as well as monitoring may be appropriately used.

8. Subcutaneous Port Procedures

There are unique codes, separate from those that are used for tunneled catheters that are designated for use with subcutaneous ports. These are as follows:

For the **insertion of a port** the code is 36561. The descriptor for this code is - insertion of tunneled centrally inserted central venous access device, with subcutaneous port, over 5 years of age.

For the **insertion of two ports** the code is 36566. The descriptor for this code is - Insertion of tunneled centrally inserted central venous access device, requiring two catheters via two separate venous access sites, with subcutaneous port(s).

For the **replacement of a catheter associated with a port** the code is 36578. The descriptor for this code is - replacement, catheter only, of central venous access device, with subcutaneous port or pump, through same venous access

For the **replacement of the complete port** the code is 36582. The descriptor for this code is - replacement, complete, of a centrally inserted central venous access device, with subcutaneous port.

For the **removal of a port** the code is 36590. The descriptor for this code is - Removal of tunneled central venous catheter, with subcutaneous port or pump.

As with non-tunneled catheters, in addition to these specific codes, **other ancillary codes** such as those for ultrasound and fluoroscopic guidance during vein cannulation as well as monitoring may be appropriately used.

9. Peritoneal Catheter Procedures

9.1 PRIMARY CODES
There are several CPT codes that are warranted when a peritoneal catheter is inserted.

9.1.1 Insertion of Peritoneal Dialysis Catheter
The code for insertion of the peritoneal dialysis catheter without the use of peritoneoscopy is 49421. The descriptor for this code is – insertion of intraperitoneal cannula or catheter for drainage or dialysis; permanent.

9.1.2 Peritoneoscopy
The code for insertion of the peritoneal dialysis catheter with the use of peritoneoscopy is 49324. The descriptor for this code is – laparoscopy, surgical with insertion of intraperitoneal cannula or catheter; permanent. The CPT manual directs that this code should be also used for peritoneoscopy with catheter insertion.

9.1.3 Injection of Air Into Peritoneal Cavity
The appropriate code for the injection of air into the peritoneal cavity is 49400. The descriptor for this code is – the injection of air or contrast into peritoneal cavity (separate procedure).

9.1.4 Peritoneogram
If contrast is injected to obtain a peritoneogram this would warrant a second use of the 49400 code with a -59 modifier (49400-59) to indicate that it is a separate procedure. Additionally, the radiological supervision and interpretation code 74190 for the peritoneogram would also be appropriate.

Table 12 – Peritoneal Catheter Insertion

49421 - Insertion of peritoneal catheter without
        peritoneoscopy
49324 - Peritoneoscopy with catheter insertion
49400 – Injection of air or contrast
74190 – S&I code for peritoneogram
76998 – Ultrasound guidance, intraoperative
49435 - Presternal subcutaneous extension
49436 - Delayed creation of exit site from embedded
        subcutaneous segment

Coding tip: The use of the code 74190 is restricted to instances in which a peritoneogram is obtained. If only air is injected to aid in the placement of the catheter and there is no imaging, then this code would not be appropriate. If this is done the medical indication for the peritoneogram should be clearly stated.

9.1.5 Ultrasound Evaluation Prior to Trocar Insertion
Some interventionalists have found that it is very beneficial to evaluate the abdomen using ultrasound prior to insertion of the trocar in order to avoid damage to the epigastric artery and as an aid in avoiding areas of

adhesions. There is no specific code for this examination. The code 76998 is the most appropriate to use. The descriptor for this code is – ultrasound guidance, intraoperative. As the descriptor indicates, this code is reserved for intraoperative use and not just for scanning the abdomen prior to prepping the abdomen.

Coding tip: If the abdomen is scanned after the abdomen is prepped, it should be considered intraoperative.

9.2 PERITONEAL DIALYSIS CATHETER REMOVAL
The code for removal of the peritoneal dialysis catheter is 49422. The descriptor for this code is – removal of permanent intraperitoneal cannula or catheter.

9.3 REPAIR OF VENTRAL HERNIA
At times when a peritoneal dialysis catheter is removed, an incisional or ventral hernia is apparent. If this is repaired, then it is appropriate to code for the procedure. The code for repair of a ventral hernia is 49560. The descriptor for this code is – repair initial incisional or ventral hernia; reducible.

Note: although not a coding issue, there may be a privileging issue in the medical facility in which this hernia repair procedure is being performed.

9.4 PERITONEAL DIALYSIS CATHETER REVISION
There are times when a peritoneal dialysis catheter is dysfunctional. Evaluation reveals that it can be salvaged by repositioning. This procedure will generate several codes depending upon the specifics of what is actually done. Unfortunately, there is no specific code for repositioning a peritoneal catheter. This being the case, the code 49999 is warranted. The descriptor for this code is – unlisted procedure, abdomen, peritoneum and omentum. In using this code, it is important to document and describe the details of what was actually done. Additional codes such as the code for injection of air or contrast – 49400 may also be appropriate. If imaging is performed (peritoneogram), then the S&I code 74190 is warranted.

9.5 DELAYED CREATION OF EXIT SITE FROM EMBEDDED SUBCUTANEOUS SEGMENT
Burying the external segment of a peritoneal catheter until the site is healed and it is time to begin dialysis has been used by some interventionalist. The code for the delayed creation of an exit iste fro this embedded segment is 49436. The descriptor for this code is - delayed creation of exit site from embedded subcutaneous segment of intraperitoneal cannula or catheter.

10. Fistula Creation

10.1 TYPES OF FISTULA
Fistula types can be classified into three different categories: simple direct, vein transposition and vein translocation.

10.1.1 Simple Direct Fistula
With this type of fistula, the vein and the artery are used in their normal positions. The distal end of the vein is freed and connected to an adjacent artery.

10.1.2 Vein Transposition Fistula
With this category of fistula, the vein is moved or transposed to a position that is better suited for the construction of a fistula. The downstream or proximal end of the vein is left intact. The distal portion of the vein is transposed to a position that will facilitate ease of cannulation when the fistula is used for hemodialysis. This requires the construction of a tunnel or pocket to serve as a bed for the newly position vein.

10.1.3 Vein Translocation Fistula
With a translocation fistula a vein is removed from one anatomical location and moved to a new one. It involves moving the entire vein and requires the creation of both a venous and an arterial anastomosis. The construction of the access is very much like the placement of a graft. The only difference is that this is the patient's native vein that is being used. This requires the creation of a tunnel for the vein to be positioned in its new location.

Table 13 – Fistula Creation Codes

36821 - Creation of AV Fistula
36818 - Transposition of Cephalic Vein Upper Arm
36819 - Transposition of Basilic Vein Upper Arm
36820 - Transposition of Forearm Vein

10.2 FISTULA CREATION

10.2.1 Creation of Simple Direct Fistula
The creation of a simple direct fistula involves an incision in the skin to allow isolation of the desired artery and vein and the creation of a single arteriovenous anastomosis. This should be documented with the code 36821. The descriptor for this code is – Arteriovenous anastomosis, open; direct, any site (e.g., Cimino type). In doing this procedure, first makes an incision to expose the desire artery and vein segment. Then clamps are placed on the artery proximally and distally to allow an opening (arteriotomy) to be made. A vein is mobilized to allow the vessel to be in the proximity of the artery. This vein is sutured to the arteriotomy opening to allow blood to flow from the artery into the vein. This attachment may be accomplished with a side-to-side approach or with an end-to-side approach, usually ligating and sectioning

the vein distally. The operator may ligate any obvious accessory veins to achieve optimal blood flow in the newly created fistula. In the final step, the skin is closed in layers.

10.2.2 Creation of Vein Transposition Fistula
The three most common vein transposition fistulas are – brachial basilic, brachial-cephalic and radial-basilic. The first two of these are created in the upper arm, the later in the forearm. A transposition fistula may be created by either of two techniques – primary transposition or secondary transposition. In primary transposition, the vein is moved at the time the fistula is created. Secondary transposition involves movement after the fistula has matured. Each of these two techniques has its proponents.

10.2.2.1 Brachial-Basilic Fistula
The code for a brachial-basilic fistula creation is 36819. The descriptor for this code is – Arteriovenous anastomosis, open: by upper arm basilic vein transposition. Transposition of the basilic vein of the upper arm involves either one long or two short incisions in the upper arm to dissect out the basilic vein. It is then superficialized and transposed to the anterior surface of the upper arm so as to be accessible for cannulation in the dialysis facility. This is done by either placing it through a subcutaneous tunnel or by creating a subcutaneous pouch. The distal free end is anastomosed to an arterial inflow. The procedure is concluded by closure of the skin incision.

10.2.2.2 Brachial-Cephalic Fistula
Generally a brachial-cephalic fistula is a simple direct type of access. However, in some instances, the cephalic vein lies too deep to be accessible for cannulation at the dialysis facility once it has been converted into a fistula. In these instances, it can be transposed to a more superficial position to make it a usable access. The code for a brachial-cephalic transposition fistula creation is 36818. The descriptor for this code is - Arteriovenous anastomosis, open: by upper arm cephalic vein transposition.

10.2.2.3 Forearm Vein Transposition
The forearm basilic vein is not readily seen when the arm is superficially examined. For this reason is often spared, even in patients in whom veins have been obliterated by multiple cannulations and intravenous lines. This vein can be utilized to creat a very acceptable fistula in the forearm, but it generally needs to be transposed to the volar surface so as to be easily accessible for cannulation once it has become mature. The code for the creation of a forearm transposition fistula is 36820. The descriptor for this code is - Arteriovenous anastomosis, open: by forearm vein transposition. The surgery involved to transpose a forearm vein is considerable. The entire length of the vein must be exposed in order to mobilize it. Then multiple incisions are required to tunnel it onto the volar surface of the forearm and expose the artery for the anastomosis.

10.2.3 Creation of Vein Translocation Fistula
Although possible, vein translocation fistulas are seldom created. Other biologic and synthetic materials are readily available that serve as well, obviating the need for this category of fistula creation in most instances. The code for a vein translocation fistula is 36825. The descriptor for this code is – Creation of arteriovenous fistula by other than direct anastomosis (separate procedure); autogenous graft.

10.3 SECONDARY PROCEDURES
Beyond fistula creation, there are surgical needs for access maintenance. These procedures create the need for additional codes.

10.3.1 Revision of AVF / AVG

It is an unfortunate fact that not all fistulas that are created mature adequately for use as a dialysis access. Additionally, there are problems that can develop over time that render a previously adequate access unusable. Surgical revision can serve as a salvage procedure. The code for surgical revision is 36832. The descriptor for this code is - Revision, open, arteriovenous fistula; without thrombectomy, autogenous or nonautogenous graft. This scope and details of this procedure varies. It may involve the creation of an entirely new anastomosis or the placement of a segment of synthetic graft.

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Table 14 – Codes for Secondary Procedures

36832 - Revision of AVF / AVG
36833 - Revision of AVF / AVG with thrombectomy
36834 - Revision of AVF / AVG involving repair of aneurysm
37607 - Ligation / Banding of AVF
37618 - Ligation AVG / AVF for rupture or trauma
35206 – Direct Repair of Vessel Upper Extremity
35266 - Repair of Vessel Upper Extremity with Prosthetic Graft
35236 – Repair of Vessel Upper Extremity with Vein Graft
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10.3.2 Revision of AVF / AVG with Thrombectomy

Frequently the need for a surgical revision is indicated by thrombosis of the fistula. In this instance, the process of revision is the same as above, but there is also the need to perform a thrombectomy. This makes this overall procedure a higher order of magnitude than just a revision. The code for surgical revision with thrombectomy is 36833. The descriptor for this code is - Revision, open, arteriovenous fistula; with thrombectomy, autogenous or nonautogenous graft.

10.3.3 Revision of AVF / AVG Involving Repair of Aneurysm

When there is a severe venous stenosis affecting a fistula, the increased pressure within the access can produce an aneurysm, especially in areas when the wall has been weakened by multiple cannulations. In these instances a repair of the aneurysm is required as well as a revision to correct the basic problem. This repair generally involves excising a portion of the vessel wall at the site of the aneurysm followed by suturing the edges back together. The code for aneurysm repair is 36834. The descriptor for this code is - Plastic repair of arteriovenous aneurysm. This code may be used with the code for revision in instances in which additional surgical intervention for other lesions is required.

10.3.4 Ligation / Banding of AVF

There are instances in which there is a need to either ligate or band a fistula. In instances in which the fistula is no longer needed, ligation can be used to eliminate it completely. In other instances such as distal ischemia related to the presence of a fistula, banding of the fistula may be attempted as a therapeutic maneuver. Banding increases the resistance to blood flow in the fistula and promotes blood flow to the higher resistance distal extremity. The code for either ligation or banding is 37607. The descriptor for this code is - Ligation or Banding of angioaccess arteriovenous fistula.

10.3.5 Ligation Artery of Extremity

On rare occasion, an arteriovenous fistula may develop refractory extravasation or may actually rupture resulting in severe bleeding that demands definitive emergent treatment. In such an instance it may be

necessary to ligate the feeding artery. The code for this is 37618. The descriptor for this code is – Ligation, major artery extremity.

10.3.6 Direct Repair of Vessel
Occasionally, a vessel is damaged and requires repair after a fistula has been created or surgically manipulated in some manner. This may require that the vessel be repaired. In doing this, the physician makes an incision over the site of an injured blood vessel. The vessel is dissected free of the surrounding structures. Vessel clamps are placed. The edges of the injured vessel may be trimmed to allow repair. The vessel defect is repaired with suture. The clamps are removed. And the skin is closed in layers. The code for this procedure is 35206. The descriptor for this code is - Repair blood vessel, direct; upper extremity.

10.3.7 Repair of Vessel with Prosthetic Graft
There are times when the repair of a vessel that has been damaged requires that a short segment of synthetic graft be interposed in the vessel to accomplish the repair. The code for this procedure is 35266. The descriptor for this code is – Repair of blood vessel with graft other than vein; upper extremity.

10.3.8 Repair of Vessel with Vein Graft
Rather than using prosthetic material to repair an injured or diseased blood vessel a short length of vein may be removed and used either as a patch graft to restore the correct lumen size or inserted as an interposition graft. The code for this procedure is 35236. The descriptor for this code is - Repair of blood vessel with vein graft; upper extremity.

11. Modifiers

There are several modifiers that can and at times should be used in coding of the procedures performed by interventional nephrologists. It is important to become familiar with this and use them properly. One should also keep in mind that when a modifier is used, extra documentation is generally advisable.

Note: In many instances, the accepted coding choice appears to vary with the local carrier. It is suggested that your choice of modifier be based upon a discussion with your local carrier and that their definitions be used. It is important that your coding practice be standardized and that the required documentation be provided.

11.1 FAILED PROCEDURE
What if you attempt a procedure and cannot do it? How should it be properly coded? These are important questions. Basically, you should always code for what was actually accomplished. Beyond this, you have three choices.

11.1.1 Code Only the Procedure Completed
One could choose to code only what was completed and omit any codes for what was attempted and not accomplished. For example if one started out to do an angioplasty, but could not pass a guidewire and decided to stop after the initial angiogram, you could simply code it as a cannulation and a venogram using the 36145 and 75790 codes. This would be a reasonable choice since that is all that was actually accomplished.

11.1.2 Modifier for Reduced Level of Service
One could use a modifier to indicate that the basic service was altered. The modifier, -52, could be used to signify that the basic coded service has been reduced. This is designed to be used in circumstances where a service or procedure is partially reduced or eliminated. The use of this modifier allows one to report reduced services without disturbing the identification of the basic service. For example, if angioplasty was attempted, but after multiple tries with several types of guiding catheters and different guidewires, you could not get the guidewire across the lesion. In this instance the treatment could not be completed. A reasonable choice would be to code the procedure as 35476-52 and 75978-52 to indicate a reduced level of service. The other codes for procedures or services that were completed would be coded normally. Your report would be individually reviewed by the intermediary to determine a payment level. This would be a percentage of the basic fee. For this reason, documentation becomes very important to form a basis for this determination.

11.1.3 Modifier for Discontinued Procedure
One could use a different modifier to indicate that the procedure was discontinued. This modifier is -53. The use of this designation indicates that the procedure was started but discontinued. It could be used as an alternative to the -52 designation in the example quoted above.

Coding tip - If you attempt an angioplasty, cannot complete it and choose to use either the -52 or -53 modifier, it is important that you provide extra documentation to describe what you actually did do. This should be stated in terms of time and supplies. This will enable the reviewer to determine a reimbursement level appropriately.

Table 15 - Modifiers

22 - Unusual Procedural Services - When the service(s) provided is greater than that usually required for the listed procedure26 -   Professional Component - CMS has designated the service as eligible for separate payment of the technical and professional components of a 7xxxx series code (see page 3 of this manual for a discussion of restrictions)

26 - Separate profession component (see discussion on page 4)

52 - Reduced Services - A service or procedure is partially reduced or eliminated

53 - Discontinued Procedure - A surgical or diagnostic procedure is terminated, it was started but discontinued

59 - Distinct Procedural Service - A procedure or service was distinct or independent from other services performed on the same day. This may represent a different session or patient encounter, different procedure or surgery, different site or organ system, separate incision/excision, separate lesion, or separate injury not ordinarily encountered or performed on the same day by the same physician

76 - Repeat Procedure by Same Physician - A procedure or service needed to be repeated subsequent to the original procedure or service during the global period

77 - Repeat Procedure by Another Physician - A procedure or service performed by another physician needed to be repeated during the global period

78 - Related Procedure - A related procedure was performed during the global period that required the use of the procedure (operating) room

79 - Unrelated Procedure by Same Physician - A procedure or service performed during

11.2 COMPLEX OR COMPLICATED PROCEDURE

There are times when one is required to perform substantial additional work to accomplish a procedure. This warrants attachment of the modifier -22 to the basic code to indicate this increased level. When doing this the reason for the additional work (i.e., increased intensity, increased time, increased technical difficulty, or a higher than usual level of severity of the patient's condition) must be documented. Payment will be increase only under very unusual circumstances based upon a review of the medical record and other documentation. Claims under this coding are priced by individual consideration. It is important to note that submission of a claim using a code with this modifier attached does not in itself insure any additional payment.

Coding tip - If you choose to use the -22 modifier, it is important that you provide extra documentation in the procedure note to describe what you did that was unusual and more than is customarily required. The reason for this requirement should also be detailed. This will enable the reviewer to determine a reimbursement level appropriately.

11.3 SEPARATE PROFESSIONAL SERVICE

CMS designates certain radiological services (7xxxx series codes) that are eligible for separate payment of the technical and the professional component. This is possible only if the services are performed in a facility in which the physician does not own the equipment or employ the technical staff. These eligible services are billed by attaching a modifier to the basic code, TC for the technical and 26 for the professional component. If the code for the procedure is used unmodified, it indicates a complete or global service. None of the radiological codes (7xxxx series codes) used in this manual have been designated as eligible for separate payment under this mechanism except in the hospital setting. (See discussion on page 4)

11.4 SEPARATE PROCEDURAL SERVICE

Under certain circumstances you may need to indicate that a procedure or service was **distinct or independent from other** services **performed** on the same day. **Modifier** -59 is used to identify procedures or services that are not normally reported together, but are appropriate under the circumstances (medically indicated). This may represent a different session or patient encounter, a different procedure, different site, or separate lesion. For example, if it is necessary to cannulate the vascular access a second time in order to complete the task at hand, this modifier should be attached to the cannulation code, e.g., 36145-59. There are other examples of the use of the -59 modifier listed in the discussion of specific procedure codes above.

 If a patient must be returned to the procedure room after initial discharge to the recovery room and the access re-cannulated, the -59 modifier would be attached to each element of the second procedure.

Coding tip – The use of the -59 modifier is frequently abused. When this is applied to a case, one should be very careful to clearly document the fact that this is a separate and distinct procedure in addition to the medical necessity for doing the procedure.

Table 16 - Procedures With A Global Period		
Code	Descriptor	Global Period (Days)
36870	Thrombectomy	90
37607	Ligation of accessory vein	90
34101	Embolectomy - brachial artery	90
34111	Embolectomy - radial or ulnar artery	90
36558	Tunneled catheter placement (single)	10
36565	Tunneled catheter placement (double)	10
36581	Tunneled catheter exchange	10
36589	Tunneled catheter removal	10
36561	Insertion of subcutaneous port	10
36578	Replacement of catheter on port	10
36582	Replacement of complete port	10
36590	Removal of port	10
49320	Peritoneoscopy	10
49421	Insertion of peritoneal catheter	90
49422	Removal of peritoneal catheter	10
49560	Repair of ventral hernia	90

11.5 Subsequent Procedure Performed During Global Period

A number of the procedures that are performed have **global periods** (Table 17). This means that if a repeat procedure is performed during that period, it is not covered. However, there are times when it becomes necessary to perform an identical or similar procedure on a patient subsequent to a procedure with a global period that has not yet expired. There are several modifiers that have been used to report and code this situation so that coverage will be available. The terminology attached to these modifiers appears to be surgical. When dealing with surgical cases, the appropriate choice of a modifier may be obvious. However, in the case of endovascular procedures it becomes somewhat confusing. There are patients who

experience a thrombosed graft within a relatively short period after a previous thrombectomy. In one instance this may be due to recurrent hypotension and totally unrelated to the previous procedure; however, it is not totally clear from the descriptors whether this would be classified as a repeat procedure or an unrelated procedure.

The choices of modifier to attach to the basic identifying code when a subsequent procedure is performed during the global period include 76, 77, 78 and 79. The modifier - <u>76</u> is used to indicate a <u>repeat procedure</u> by the same physician and modifier - <u>77</u> is use to indicate a repeat procedure performed by another physician. The terminology used in the descriptions for these codes suggest that they would be the best choice if it was apparent that the subsequent procedure was totally unrelated to the previous one. The modifier - <u>78</u> has a descriptor that suggests its use when the subsequent procedure was related to the previous one. Based upon its description, use of the modifier - <u>79</u> seems to be warranted in cases where the subsequent procedure is completely different from the previous one, neither repeated nor related.

12. Documentation

There is an old adage – "If it's not documented, it didn't happen!" This should definitely be considered true when coding procedures that were performed in the interventional lab. If you are going to code for the procedure, be sure that it is documented adequately. There are several types of documentation. Firstly, there is radiographic documentation. This is the best, it is visual and objective; anyone can see it. Secondly, your procedure note is very important. If something was done that justifies a code, then it should be mentioned and/or discussed in the procedure note. Thirdly, the nurse's note, while not a detailed record of the step-by-step aspects of the procedure, should reflect what was actually done. Accurate coding is very important, but don't neglect the documentation.

Illustrative Coding Cases

Note: Only selected images are shown with each of the following illustrative cases. These images have been included to enhance understanding of the procedures that were performed. Due to space restrictions, not all images derived from the individual cases have been included. Failure to observe an image that adequately documents each procedure or a critical aspect of a procedure should not lead to the assumption that the work was not performed. Emphasis should be placed upon the narrative description of what was done and how it was coded.

Catheter Case 1 – Basic Tunneled Catheter Insertion

Referral: Need to start dialysis, no access available

History:
- 56 year old female
- Declining renal function for past year
- Needs immediate dialysis
- No arteriovenous access present

Physical Examination:
- Neck and thorax normal
- No surgical scars
- No previous central venous catheters
- No evidence of venous hypertension
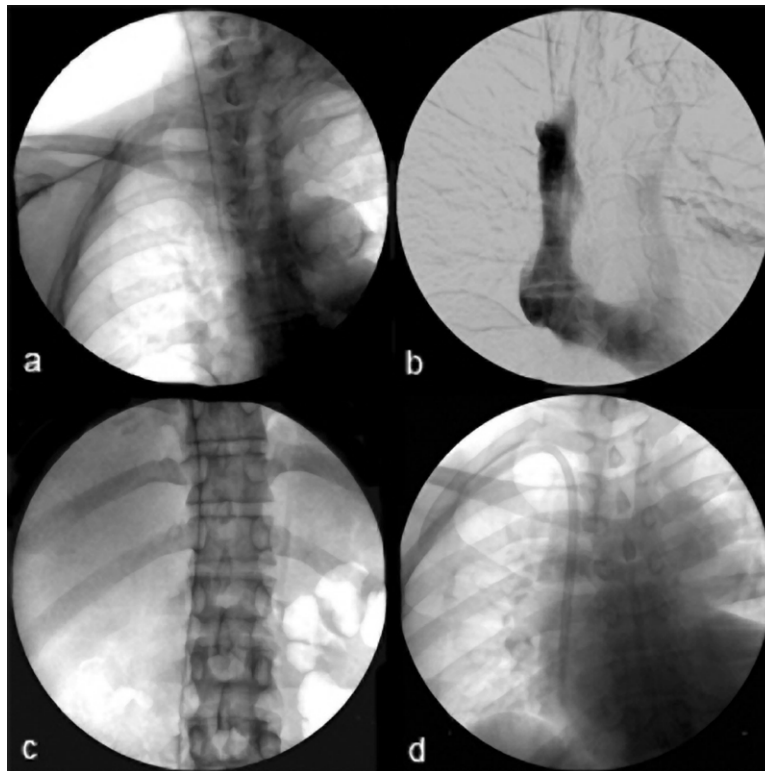
Procedure: The right IJ was cannulated using ultrasound and fluoroscopic guidance ((Figure a). Difficulty was encountered in passing the guidewire so an angiogram was performed (Figure b). No abnormality was seen. The guidewire was passed and positioned in the inferior vena cava (Figure c). A 28 cm dialysis catheter was then placed without difficulty (Figure d).

Analysis: This was an uncomplicated right IJ tunneled dialysis catheter placement.

Codes: Ultrasound guidance – 76937 (requires image documentation), Fluoroscopic guidance – 77001, Catheter insertion – 36558

Discussion: This was just a straight forward placement of a right internal jugular tunneled dialysis catheter. Difficulty was encountered in passing the wire resulting in the performance of an angiogram. This does not warrant a code because all angiographic studies are bundled with the basic fluoroscopic code.

Catheter Case 2 – Tunneled Catheter Exchange With Fibrin Sheath

Referral: Catheter with poor flow

History:
- 76 year old male
- Catheter dependent dialysis for 3 months
- Poor flow from catheter
- No history of chills or fever

Physical Examination:
- Catheter in right IJ
- Exit site looks clean
- No redness
- No drainage
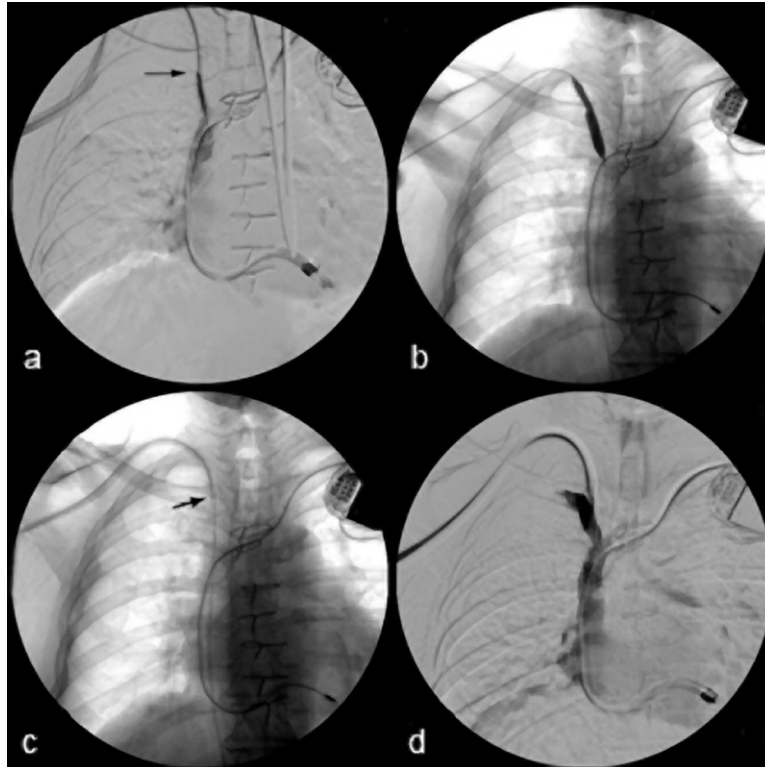
Procedure: The cuff of the right IJ catheter was freed using blunt dissection. The catheter was pulled back so that the tip was just below the clavicle and contrast was injected. A fibrin sheath was seen (Figure a). This was disrupted using an 8 X 4 angioplasty balloon (Figure b). Insertion of the new catheter was halted with the tip just below the clavicle (Figure c) and contrast was injected to assure that the sheath was gone (Figure d). The new catheter was then placed without difficulty.

Analysis: This was an uncomplicated right IJ tunneled dialysis catheter placement associated with a fibrin sheath which was disrupted by angioplasty.

Codes: Fluoroscopic guidance – 77001, Catheter exchange – 36581, Fibrin sheath disruption – 35476, 75978

Discussion: This was a straight forward exchange of a right internal jugular tunneled dialysis catheter with a fibrin sheath. The performance of an angiogram does not warrant a code because all angiographic studies are bundled with the basic fluoroscopic code. The fibrin sheath disruption was done by venous angioplasty and was coded as such.

Catheter Case 3 – Tunneled Catheter Exchange
(Complicated by Central Vein Stenosis)

Referral: Catheter with poor flow

History:
- 46 year old male
- On dialysis for 4 years
- Multiple central venous catheters
- Catheter placed blindly 5 days earlier

Physical Examination:
- Catheter in left IJ
- Exit site looks clean
- No redness
- No drainage
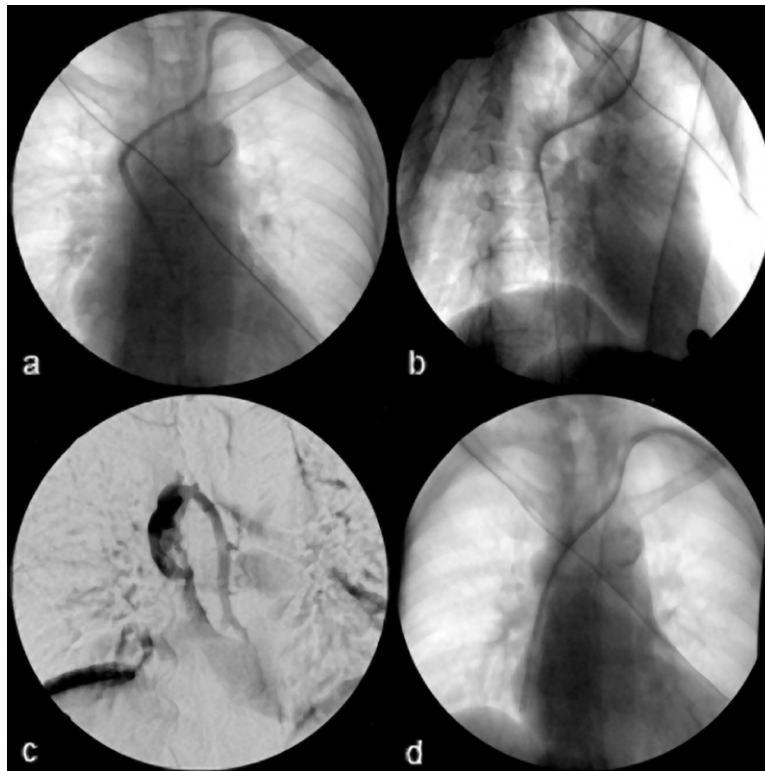
Procedure: The initial course of the dysfunctional catheter (diagonal) suggested that it was in the azygous vein (Figure a). A lateral view confirms that this was the case (Figure b). It was not clear as to whether the SVC was patent or not. Using a Kumpe vascular catheter the guidewire was manipulated into the superior vena cava and an angiogram was performed that showed that it was patent (Figure c). The new catheter was then passed over the guidewire into the SVC (Figure d).

Analysis: This was a complicated left IJ tunneled dialysis catheter exchange. It was necessary to demonstrate that the SVC was patent which required selective catheterization of that structure. The new catheter was passed over a guidewire once it was appropriately placed.

Codes: Fluoroscopic guidance – 77001, Catheter exchange – 36581, Selective catheterization of the superior vena cava – 36010, Angiogram of superior vena cava – 75827-59

Discussion: This was a case that was complicated by stenosis of the central veins causing hypertrophy of the azygous vein and partial obstruction of the entry into the superior vena cava. Selective catheterization was necessary in order to gain access to the SVC. This warrants the appropriate code for that procedure. The angiogram of the SVC is normally bundled in the fluoroscopy code. However, since it was accomplished via selective catheterization, it warrants coding as a separate procedure with a -59 modifier.

Catheter Case 4 – Tunneled Catheter Placement
(With Cannulation of an Obstructed Right IJ)

Referral: Need for dialysis catheter

History:
- 50 year old female
- On dialysis for 5 years
- Multiple central venous catheters
- No arteriovenous access

Physical Examination:
- Multiple central venous catheter scars
- No evidence of venous hypertension
- Old graft sites on both arms
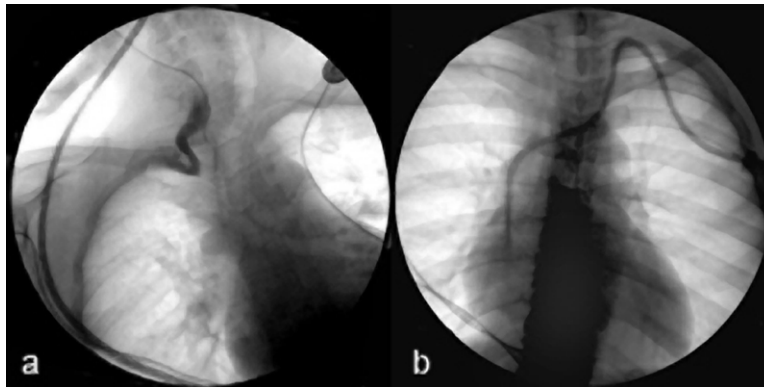
Procedure: The patient had a large right IJ on ultrasound. It was cannulated but the guidewire would not pass. After several failed attempts, an angiogram was performed which showed that the right IJ was totally obstructed (Figure a). The left IJ was cannulated and a tunneled catheter was placed without further difficulty (Figure b).

Analysis: In this case the right IJ was examined angiographically first and was found to be obstructed.

Codes: Cannulation of vein – 36000-59, Angiogram of internal jugular vein – 75860-59, Ultrasound guidance – 77001, Fluoroscopic guidance – 77001, Catheter placement – 36558.

Discussion: In this case, an attempt was made to place a catheter in the right internal jugular vein. However, the vein, after evaluation, was found to be obstructed. This evaluation warrants coding. The angiogram performed here was designated as a separate procedure by the attachment of a 59 modifier. The fact that it was done from a separate access site made it a separate procedure. The cannulation of the vein for the placement of a catheter is bundled with the basic catheter placement code. However, the cannulation on the right side was not associated with a catheter placement, it warrants a separate code, 36000 is the appropriate code for this purpose. A 59 modifier should also be attached to indicate that it is a separate procedure.

Catheter Case 5 – Tunneled Catheter Exchange
(With Stenosis of Lower IJ)

Referral: Catheter with poor flow

History:
- 52 year old female
- On dialysis for 2 years
- Left I J catheter with poor flow
- Has had multiple central venous catheters

Physical Examination:
- Catheter in left IJ
- Prior catheter sites bilateral
- No evidence of venous hypertension
- No evidence of infection
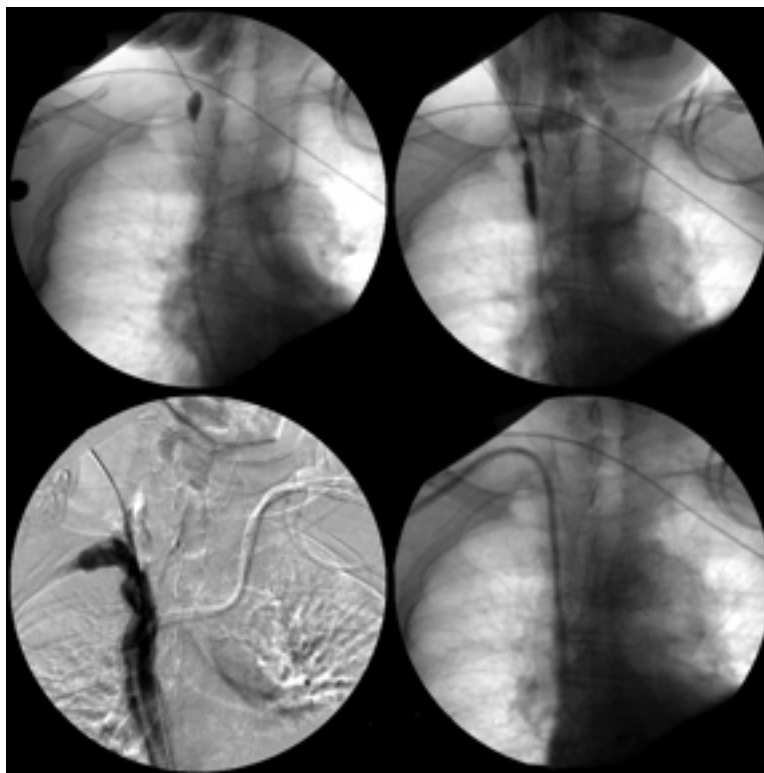
Procedure: The right IJ was visualized with US and looked good. It was cannulated. The guidewire would not pass. An angiogram was done (Figure a). With multiple attempts, the guidewire was passed down to the atrium. An angioplasty was performed with an 8 X 4 balloon (Figure b). After the angioplasty, the superior vena cava was visualized and looked good (Figure c). The catheter was then inserted on the right (Figure d) and the left catheter was removed.

Analysis: This was a complicated right IJ tunneled dialysis catheter placement. It was necessary to perform a venous angioplasty to treat the IJ stenosis before the catheter could be placed. Although a catheter exchange was performed, the old and the new catheter were on opposite sides, this affects the coding.

Codes: Ultrasound guidance – 76937, Fluoroscopic guidance – 77001, Catheter removal – 36589, Catheter insertion – 36558, Venous angioplasty – 35476, 75978.

Discussion: This was a case that was complicated by stenosis of the internal jugular vein. It was opened by angioplasty. This should be coded as a regular venous angioplasty. Since the new catheter was placed in a new site, the procedure should be coded as a removal and a placement rather than an exchange. The determining factor is the venous entry site. If the same site is used for the new catheter, then the exchange code should be applied. If a different entry site is used, then it should be coded as here.

Fistula Case 1 – Juxta-Anastomotic Stenosis

Referral: Failure of fistula to develop and poor flow.

History:
- 28 year old female
- Radial-cephalic fistula 6 months old
- Never used
- Dialysis with catheter

Physical Examination:
- Left radial-cephalic fistula
- Hyper-pulsatile at anastomosis
- Weak thrill
- Fistula poorly palpable above anastomosis
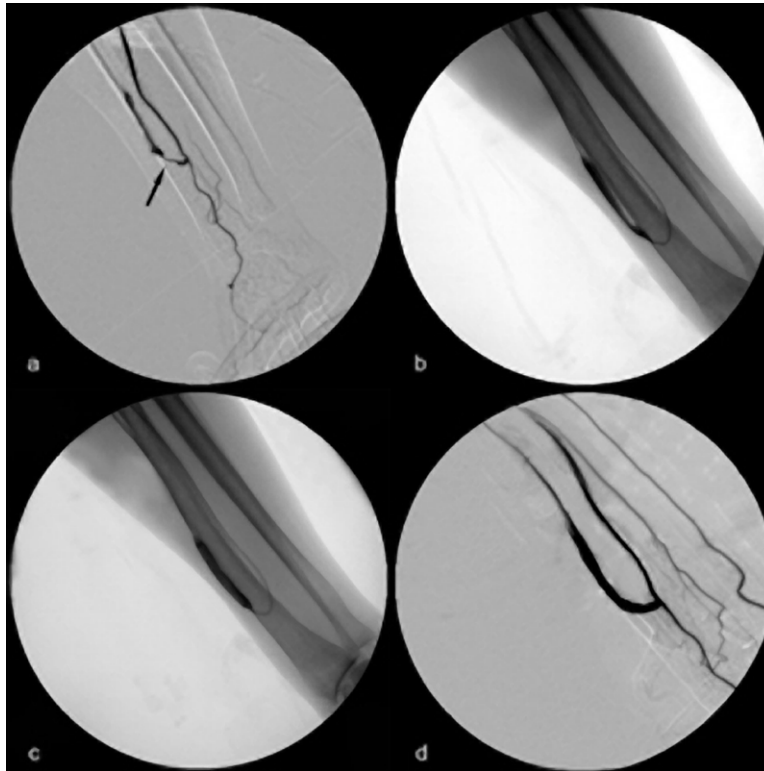
Lesion: Juxta-anastomotic stenosis in radial-cephalic fistula. Anastomosis is not involved (Figure a).

Procedure: Angioplasty with a 6 X 4 angioplasty balloon (Figures b, c). Treatment was successful (Figure d).

Analysis: The lesion involves only the fistula; there is no involvement of the anastomosis. It should be coded only as a venous angioplasty.

Codes: Cannulation – 36145, Angiogram of fistula – 75790, Venous angioplasty – G0393, 75978.

Discussion: This is just a straight forward angioplasty of a juxta-anastomotic lesion. The anastomosis was not involved. The treatment was successful. The G code was used here because the lesion was within the access itself. Since the anastomosis was not involved and the angioplasty balloon did not have to cross into the artery to successfully treat the lesion, G0392 was not appropriate to use. Although done the arteriogram was not coded. Even though there was poor flow in the fistula there was no clinical evidence to suggest an arterial problem, in fact, the fistula was hyperpulsatile at the anastomosis. This suggested good inflow.

Fistula Case 2 – Anastomotic Stenosis

Referral: Failure for fistula to develop and poor flow

History:
- 68 year old male
- Brachial-cephalic fistula 3 months old
- Never used
- Dialysis with catheter

Physical Examination:
- Brachial-cephalic fistula
- Poor pulse augmentation
- Weak thrill
- Fistula poorly palpable above anastomosis
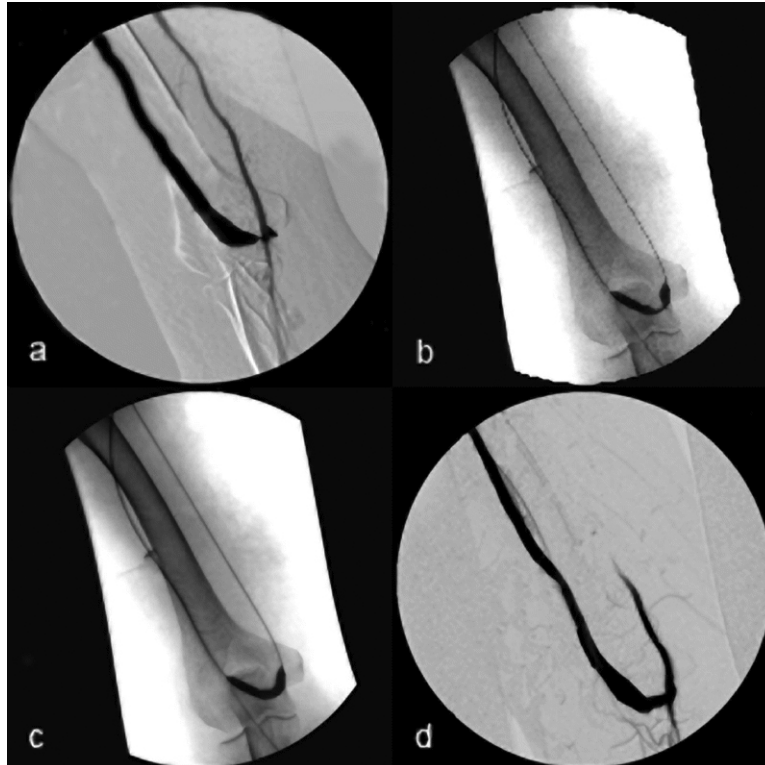
Lesion: Anastomotic stenosis in brachial-cephalic fistula. Fistula is not involved (Figure a).

Procedure: Angioplasty with a 6 X 4 angioplasty balloon (Figures b, c). Treatment was successful (Figure d).

Analysis: The lesion involves only the anastomosis; there is no involvement of the fistula. It should be coded only as an arterial angioplasty.

Codes: Cannulation – 36145, Angiogram of fistula – 75790, Arteriogram of extremity – 75710, Arterial angioplasty – G0392, 75962.

Discussion: This is just a straight forward angioplasty of an anastomotic lesion. The fistula was not involved. The treatment was successful. The arterial G code was used because the lesion was within the anastomosis of the access. Even though the entire brachial artery was not visualized, the use of the arteriogram code is warranted. A section of the artery sufficient to make a diagnostic evaluation was visualized. The medical indication for the study was poor flow in the fistula.

Coding Tip: Documentation should include the radiographic involvement of the artery and/or balloon location along with comment that the stenosis involves the "arterial anastomosis and arterial inflow tract".

Fistula Case 3 – Juxta-Anastomotic and Anastomotic Stenosis

Referral: Failure for fistula to develop and poor flow

History:
- 54 year old male
- Brachial-cephalic fistula 4 months old
- One year old
- Poor flow

Physical Examination:
- Brachial-cephalic fistula
- Poor pulse augmentation
- Weak thrill
- Fistula collapsed with arm elevation
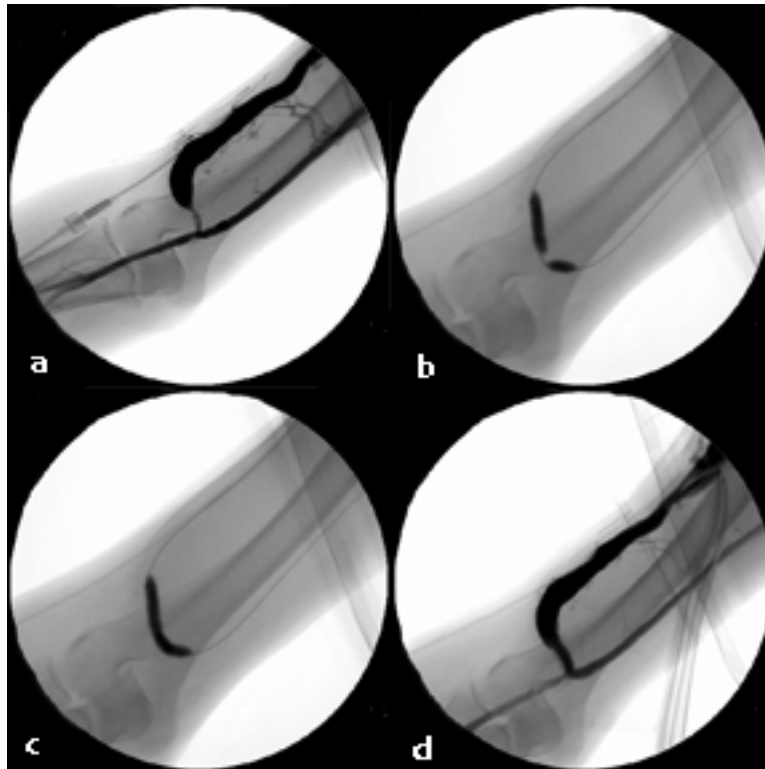
Lesion: Stenoses in brachial-cephalic fistula involving the anastomosis and the juxta-anastomotic fistula (Figure a).
Procedure: Angioplasty with a 6 X 4 angioplasty balloon (Figure b) to treat both anastomosis and adjacent fistula lesion (Figure c). Treatment was successful (Figure d). It was necessary to manipulate the guidewire with a vascular catheter to catheterize the brachial artery. This was necessary to accomplish the arteriogram which was performed because of the poor flow (not shown).
Analysis: The lesion involves both the anastomosis and the fistula and is continuous.
Codes: Angiogram of fistula – 75790, Arteriogram of extremity – 75710, Arterial angioplasty – G0392, 75962, Selective catheterization of 1st order artery - 36215
Discussion: In this case both the anastomosis and the juxta-anastomotic fistula were involved and both were treated successfully; however, the lesion was continuous. Therefore this should be coded as a single angioplasty. Since the arterial angioplasty is the higher level code it is the one that should be used. The G code should be used since the lesion was within the access itself. The ancillary code 93040 for EKG monitoring could also be applied which would require an interpretation addition to the documentation. Even though the entire brachial artery was not visualized, the use of the arteriogram code is warranted. A section of the artery sufficient to make the indicated diagnostic evaluation was visualized. The medical indication for the study was poor flow in the fistula associated with poor augmentation. The code for cannulation of the access was dropped in favor of the selective catheterization.

Fistula Case 4 – Anastomotic, Juxta-Anastomotic and Venous Stenosis

Referral: Failure for fistula to develop, unable to cannulate

History:
- 38year old male
- Brachial-cephalic fistula 4 months old
- Never used
- Dialysis with catheter

Physical Examination:
- Brachial-cephalic fistula
- Hyper-pulsatile over short lower segment
- No thrill, no bruit with Doppler
- Upper fistula not palpable
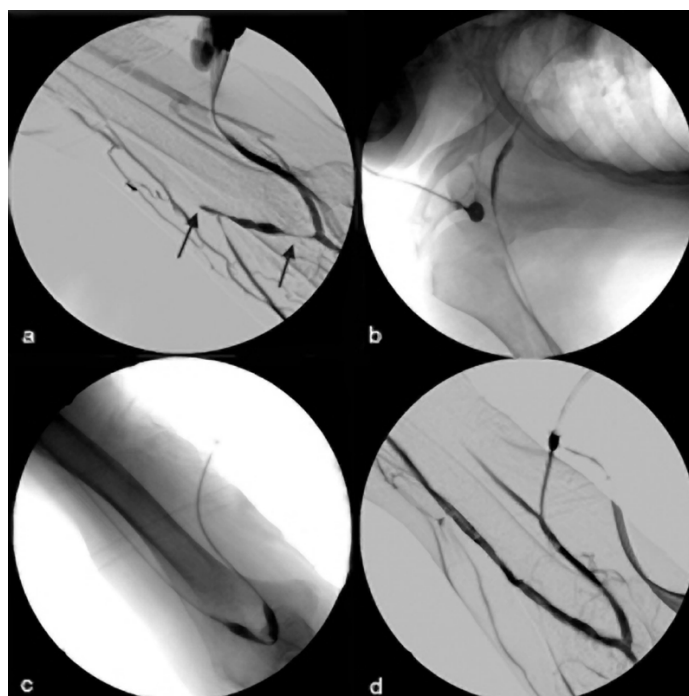
Lesion: Stenosis from anastomosis through entire fistula, up through cephalic arch. Apparent obstruction is apparent in the lower fistula (Figure a).

Procedure: The fistula could not be accessed from the venous side and a direct arterial puncture and sheath insertion was performed. Angioplasty of entire cephalic was performed with a 6 X 4 balloon (Figure b), multiple dilatations. Treatment of anastomosis lesion with 6 X 4 balloon (Figure c). Treatment was successful (Figure d). It was necessary to manipulate the guidewire with a vascular catheter to catheterize the fistula.

Analysis: In order to treat these lesions, it was necessary to cannulate the brachial artery. The entire cephalic vein, which included the fistula was dilated. The arterial anastomosis was also treated.

Codes: Cannulation of brachial artery – 36120, Angiogram of fistula – 75790, Arteriogram of extremity – 75710, Arterial angioplasty – G0392, 75962.

Discussion: In this case, even though the entire cephalic vein and the anastomosis were treated and multiple angioplasty dilatations were performed, only one angioplasty code is warranted. In this instance, because it is a column 1 code where paired with the venous angioplasty code, G0392 should be used. The fistula is considered to extend all the way to the subclavian and only one code can be sued in this access vessel. The use of the arteriogram code was warranted. A section of the artery sufficient to make a diagnostic evaluation was visualized. The medical indication for the study was a lack of flow in the fistula. Additionally, cannulation of the brachial artery and the need to visualize the artery to determine the location of the anastomosis and cannulate it warrants a code for the arteriogram. Selective catheterization was not coded since this was done in order to accomplish the angioplasty procedure only and this is bundled with that code. (see coding tip under Fistula case 2 above)

Fistula Case 5 – Fistula and Proximal Venous Stenosis

Referral: Poor flow

History:
- 52 year old male
- Radial-cephalic fistula 5 years old
- No difficulty with cannulation
- Poor flow by Transonic

Physical Examination:
- Radial-cephalic fistula
- Hyper-pulsatile over lower segment
- Diastolic thrill only
- Thrill below left clavicle
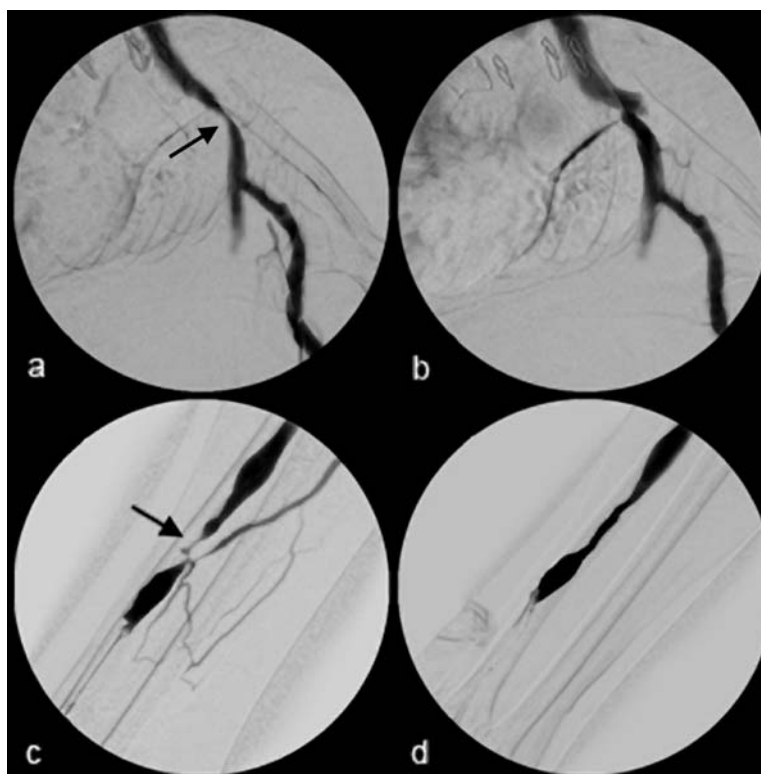
Lesion: Stenotic lesions in both the peripheral (access) and central vessels were seen. A lesion is seen in the subclavian (Figure a) and another lesion at mid-fistula proper within the forearm (Figure c).

Procedure: Angioplasty of the peripheral lesion was accomplished with an 8 X 4 balloon. The subclavian lesion was treated with a10 X 4 balloon. Treatments were successful (Figures b and d).

Analysis: Both lesions were significant and warranted treatment. No significant residual was seen, the treatments were successful.

Codes: Cannulation – 36145, Angiogram of fistula – 75790, 1st venous angioplasty– G0393, 75978, 2nd venous angioplasty (of a central vessel)– 35476-59, 75978-59.

Discussion: In this case there were two lesions – one was within the access vessel, the other was in a central vein. In this instance both can be coded. The lesion within the access requires that the G0393 code be used. In the central veins the 35476 code is appropriate. When this code pair is used, the G code is a column 1 code, the 35476 is a column 2 code. Therefore it is listed with a 59 modifier.

Fistula Case 6 – Accessory Vein Treated with a Coil

Referral: Difficulty with cannulation in upper fistula

History:
- 47 year old female
- Radial-cephalic fistula 6 months old
- Difficulty with cannulation in upper fistula
- Poor flow by Transonic

Physical Examination:
- Radial-cephalic fistula
- Good augmentation
- Continuous thrill
- Physical signs of accessory vein
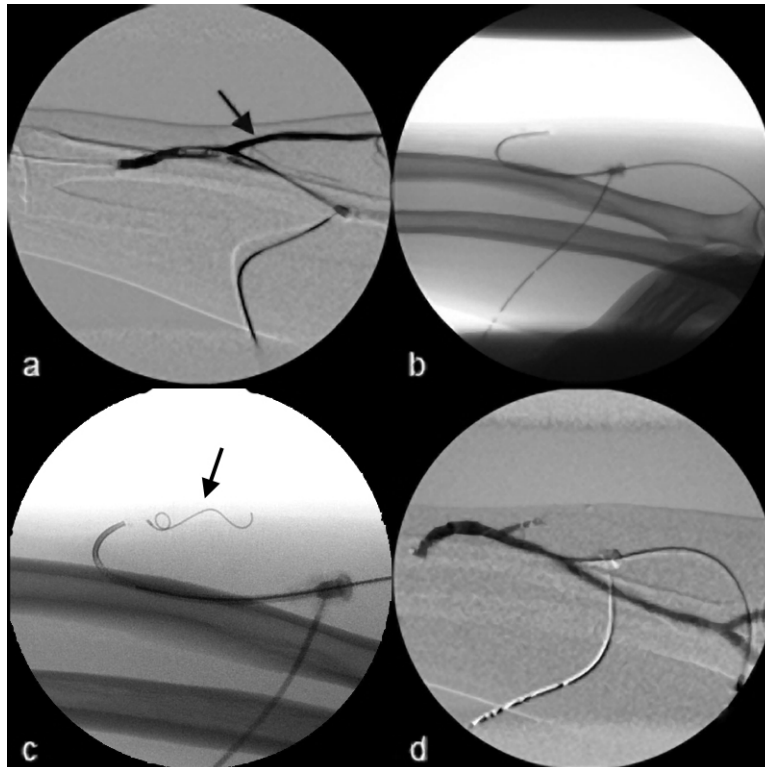
Lesion: A large accessory vein was found (Figure a).

Procedure: The accessory vein was selectively catheterized with a vascular catheter (Figure b). Two coils were placed in the vein (Figure c). A follow-up angiogram performed through the catheter showed no flow beyond the coil (Figure d).

Analysis: The accessory vein appeared to be significant and consistent with the patient's clinical picture. Manipulation with a vascular catheter was required to catheterize the vessel for coil placement. Coil placement was successful.

Codes: Selective catheterization of 1st order vein – 36011, Angiogram of fistula – 75790, Placement of embolization coil – 37204, 75894, Follow-up angiogram following the placement of an embolization coil – 75898.

Discussion: The non-selective cannulation code 36145 was dropped in favor of the selective code for catheterization of a 1st order vein – 36011. Even though two coils were placed in the vein, only a single code is warranted because only a single vein was coiled. The code 75894 is the supervision and interpretation code that goes with the technical procedure code. It is appropriate to code for the follow-up angiogram, the only instance in which a follow-up angiogram can be coded.

Fistula Case 7 – Accessory Vein Treated with a Coil
(Short Vein with Branches)

Referral: Difficulty with cannulation in upper fistula

History:
- 63 year old female
- Radial-cephalic fistula 6 months old
- Difficulty with cannulation in upper fistula
- Poor flow by Transonic

Physical Examination:
- Radial-cephalic fistula
- Good augmentation
- Continuous thrill
- Physical signs of accessory vein
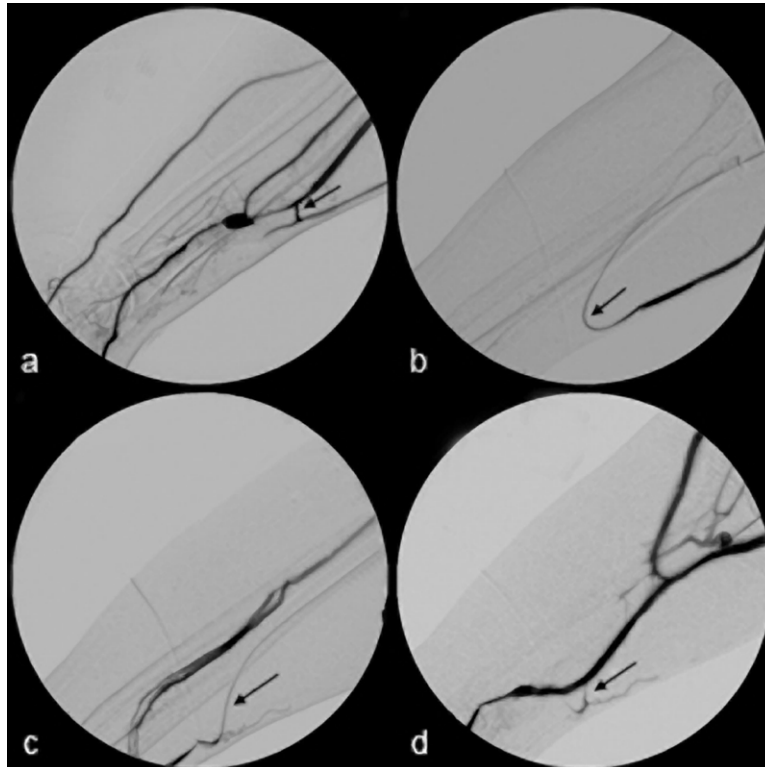
Lesion: A large accessory vein was found (Figure a). It was short and branched early into two main branches.

Procedure: The main accessory vein (arrow in each image) was very short and branches early. Each of the two major branches was selectively catheterized with a vascular catheter and a selective angiogram of each was performed (Figures b and c). Two coils were placed in each of the vein branches. A follow-up angiogram performed through the catheter shows no flow beyond the coils (Figure d).

Analysis: The main accessory vein appeared to be too short to safely place a coil so each major branch was coiled. Manipulation with a vascular catheter was required to catheterize these vessels for coil placement. Since the vessels that were selectively catheterized were branches of the main vein, these were second order branches. Coil placement was successful.

Codes: Selective catheterization of first 2nd order vein – 36012, Selective catheterization of second 2nd order vein – 36012-59, Angiogram of fistula – 75790, Placement of embolization coil – 37204, 75894, Follow-up angiogram following the placement of an embolization coil – 75898.

Discussion: The non-selective cannulation code 36145 is dropped in favor of the selective code for cauterization of a 1st order vein. This code is then dropped in favor of the 2nd order catheterization that was done twice. Even though two veins were coiled, only a single code is warranted because this represents a single field, i.e., branches of a single vein off of the fistula. It is appropriate to code for the follow-up angiogram.

Fistula Case 8 – Multiple Venous Lesions

Referral: Poor flow

History:
- 68 year old female
- Brachial-cephalic fistula 6 months old
- Poor flow by Transonic

Physical Examination:
- Brachial-cephalic fistula
- Good augmentation
- Hyperpulsatile
- Multiple thrills over fistula

Lesion: Multiple stenotic lesions in fistula (Figure a).

Procedure: Multiple angioplasties were performed through the fistula up to the axillary vein (Figure c). The axillary vein (Figure b) and central veins were normal. An arteriogram was performed and was also normal.

Analysis: Multiple lesions were present and were treated; however, they were all in the same vessel – the fistula.

Codes: Cannulation - 36145, Angiogram of fistula – 75790, Venous angioplasty – G0393, 75978.

Discussion: Although multiple lesions were present and were treated, they were all within the same vessel, i.e., the fistula. Therefore only a single angioplasty code was warranted. An arteriogram was performed but there was no medical indication. Therefore, the study was not coded.

Fistula Case 9 – Thrombosed Fistula with Venous Stenosis

Referral: Thrombosed fistula

History:
- 47 year old female
- Brachial-cephalic fistula 6 months old
- No flow

Physical Examination:
- Brachial-cephalic fistula
- No thrill
- No pulse
- Slightly tender
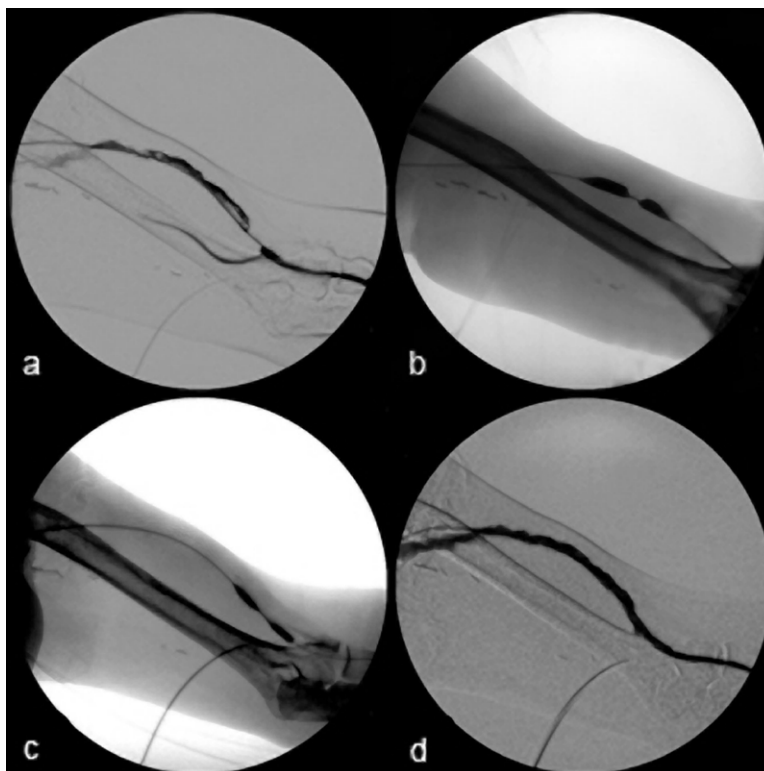
Lesion: Thrombosed fistula (Figure a) with two areas of venous stenosis within the fistula.

Procedure: The fistula was declotted using tPA and thromboaspiration. A juxta-anastomotic lesion was treated with an 8 X 4 balloon going in a retrograde direction (Figure c). A stenosis in the mid fistula was treated with an 8 X 4 balloon going in an antegrade direction (Figure b). The procedure was successful (Figure d). An arteriogram was performed and was normal. Guidewire manipulation with a vascular catheter was required to access the brachial artery.

Analysis: The thrombosed fistula was treated with both enzyme and mechanical modalities. The two lesions that were present could not be accessed from the same cannulation site. This necessitated doing the second from a separate access site. Because of the risk of creating an arterial embolus, the arteriogram performed after the thrombectomy was performed with a catheter introduced into the artery by guidewire manipulation.

Codes: Cannulation - 36145, Selective catheterization of 1st order artery - 36215, Angiogram of fistula – 75790, Venous angioplasty – G0393, 75978, Thrombectomy – 36870, Arteriogram – 75710,

Discussion: Two different modalities were used to perform the thrombectomy, but they are both covered under the same code. Although two lesions were present and were treated from separate access sites, they were all within the same vessel, i.e., the fistula. Therefore only a single angioplasty code is warranted. Selective catheterization of the brachial artery was necessary. This warrants a selective code which takes precedence over the code for the second cannulation. An arteriogram was performed. The medical indication for this study was a thrombosed fistula.

Fistula Case 10 – Fistula and Anastomotic Stenosis

Referral: Failure for fistula to develop and poor flow

History:
- 44 year old female
- Brachial-cephalic fistula
- Two year old
- Poor flow

Physical Examination:
- Brachial-cephalic fistula
- Poor pulse augmentation
- Weak thrill
- Fistula collapsed with arm elevation
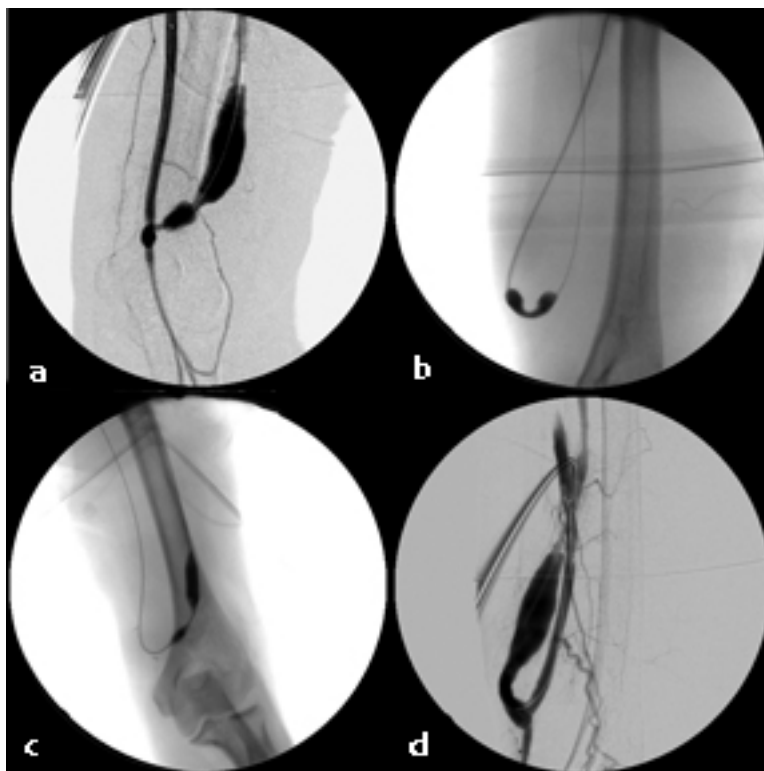
Lesion: Stenoses in fistula involving the anastomosis and the fistula 4 cm from anastomosis (Figure a).

Procedure: Angioplasty with a 6 X 4 angioplasty balloon (Figure b) to treat the anastomosis and with an 8 X 4 balloon to treat the adjacent fistula lesion (Figure c). Treatment was successful (Figure d). It was necessary to manipulate the guidewire with a vascular catheter to catheterize the brachial artery. After these two angioplasties, pulse augmentation was found to be excellent.

Analysis: There are two separate distinct lesions. One involves the anastomosis and the second involves the fistula several cm above the anastomosis.

Codes: Cannulation – 36145, Angiogram of fistula – 75790, Arterial angioplasty – G0392, 75962.

Discussion: In this case both the anastomosis and the fistula were involved and both were treated successfully. Although the two lesions were separate, they are both within the access vessel. Therefore only one code can be used. A G code should be used since the lesions were within the access itself. When the G0392 and G0393 code pair is used, the arterial code is a column 1 code and the venous is column 2. This means that the arterial code should be listed as the only code. An arteriogram was not done because physical examination of the access after the stenotic lesions present within the access were treated indicated good arterial inflow with excellent pulse augmentation. Selective catheterization of a 1st order artery was not coded since this was done in order to accomplish the angioplasty procedure only and this is bundled with that code. (see coding tip – Fistula Case 2)

Graft Case 1 – Simple Angioplasty of Graft

Referral: Poor flow.

History:
- 58 year old female
- Upper arm straight graft
- 2 years old
- Decreasing flow over past 3 months

Physical Examination:
- Upper arm straight graft
- Hyper-pulsatile
- Strong thrill at venous anastomosis
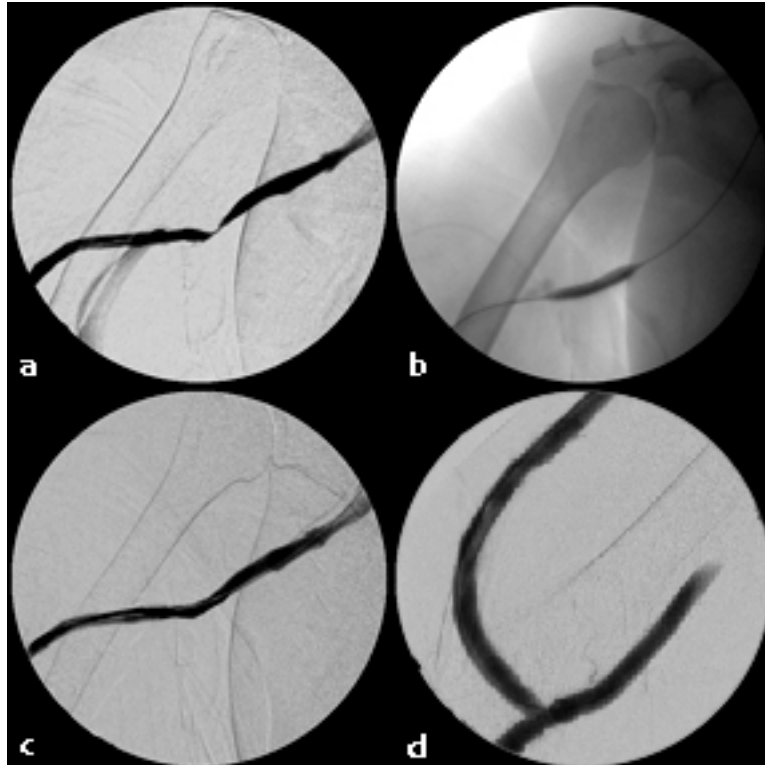
Lesion: Stenosis at venous anastomosis (Figure a).
Procedure: Angioplasty with an 8X 4 angioplasty balloon. Treatment was successful (Figure c). An angiogram was done to view arterial anastomosis with adjacent artery (Figure d).
Analysis: The graft had a simple lesion. There is stenosis of the anastomosis.
Codes: Cannulation – 36145, Angiogram of graft – 75790, Venous angioplasty – G0393, 75978.
Discussion: This was just a straight forward angioplasty of a venous anastomosis lesion in a straight upper arm graft. Since the lesion affected the graft itself, the G code was the appropriate code to use. A second code for an angioplasty would not be generated until one reached the central veins. Although the venous drainage up through the central veins was examined angiographically, it is all bundled under the basic code for the angiogram of the access. An arteriogram was performed, but there was no medical indication for it. Therefore it was not coded.

Graft Case 2 – Angioplasty of Graft
(Multiple Arterial Angioplasties)

Referral: Poor flow.

History:
- 48 year old female
- Forearm loop graft
- 3 years old
- Decreasing flow over past 3 months

Physical Examination:
- Forearm loop graft
- Decreased pulse
- Strong thrill at venous anastomosis
- Poor augmentation
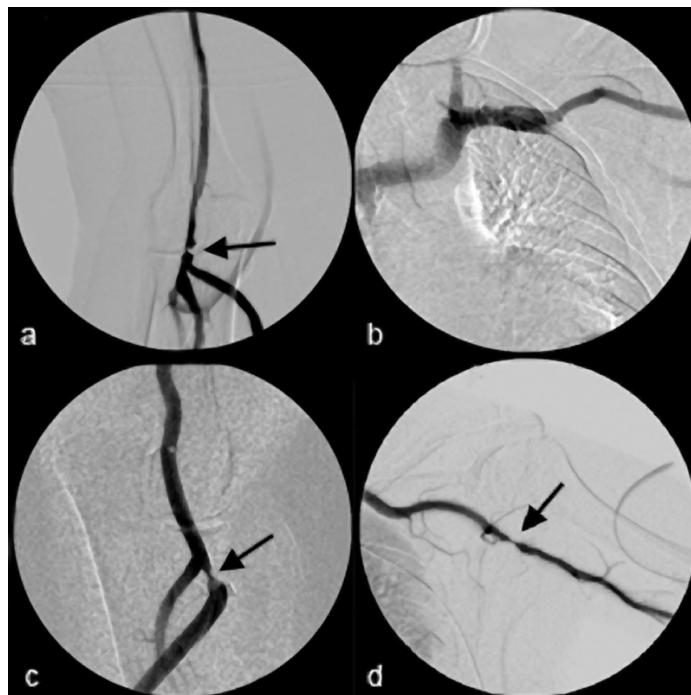
Lesion: Because of evidence of diminished inflow the brachial artery is cannulated retrograde and a brachial arteriogram with runoff performed as well as following contrast through the graft. Stenosis at venous anastomosis (Figure a), Stenosis at arterial anastomosis (Figure c), Stenosis of axillary artery (Figure d)

Procedure: Two cannulations, Angioplasty of venous anastomosis with an 8 X 4 angioplasty balloon. Selective catheterization of the brachial artery. An angioplasty of the arterial anastomosis and axillary artery was performed with a 6 X 4 balloon. Treatments were successful. An angiogram was done to view the central veins (Figure b).

Analysis: The graft has three associated stenotic lesions. Two affect the graft itself – the venous and the arterial anastomoses. One was distant to the graft – the axillary artery.

Codes: First cannulation – 36145, Angiogram of graft – 75790, Arteriogram – 75710, Arterial angioplasty – G0392, 75962, Arterial angioplasty – 35475-59, 75962-59, Selective catheterization of 1st order artery - 36215.

Discussion: In this case both the arterial and venous anastomoses were stenotic and were treated. These would need to be coded with the G code since they are within the access vessel. Only one G code can be used, since the G0392. Code is a column 1 code when this code pair occurs together, it should be the one that is used. Selective catheterization of the brachial artery was done and should be coded because it was done in order to visualize the arterial anatomy. One cannulation code was dropped in favor of the selective code. The lesion in the axillary artery should be coded using the 3XXXX series code since this is not part of the access. When used with the G0392 code it is a column 2 code, therefore it should have a 59 modifier attached. It is unusual to have more than 2 angioplasties so this case would demand very special attention to good documentation. (see coding tip under Fistula case 2)

# Graft Case 3 – Angioplasty with Multiple Lesions
(Single Angioplasty)

Referral: Poor flow.

History:
- 44 year old male
- Forearm loop graft
- 5 years old
- Frequent clotting

Physical Examination:
- Forearm loop graft
- Hyper-pulsatile
- Strong thrill at venous anastomosis
- Very scarred
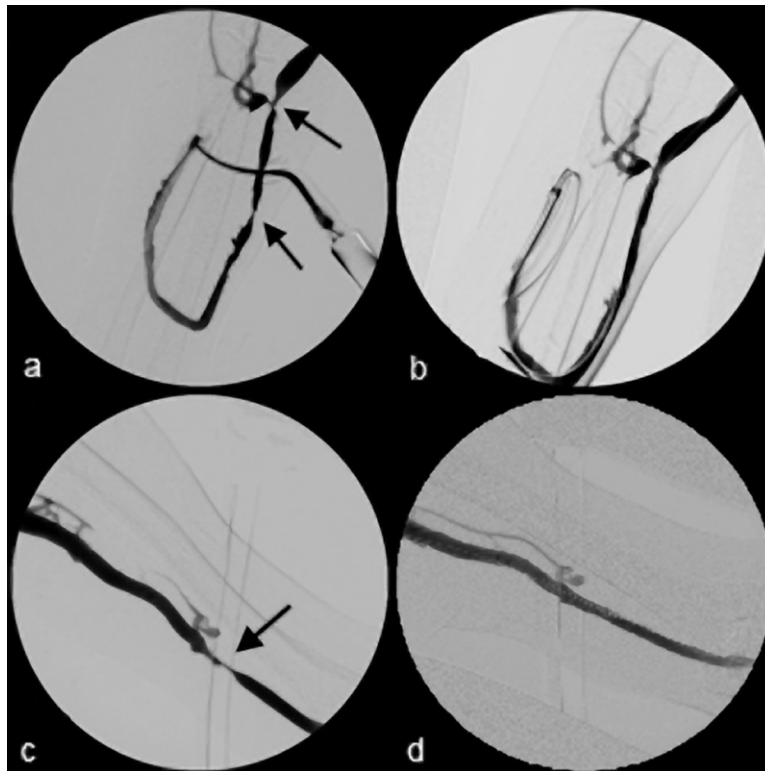
Lesion: Stenosis in graft and at the venous anastomosis (Figure a), Stenosis in mid basilic vein (Figure c)
Procedure: Angioplasty of graft, venous anastomosis and mid basilic lesions (Figures b and d)
Analysis: This case had three stenotic lesions. Two were associated with the graft, the other the mid portion of the basilic vein.
Codes: Cannulation – 36145, Angiogram of graft – 75790, Venous angioplasty – G0393, 75978,
Discussion: In this case there were actually three lesions present; however, they should all be bundled together since they were either within the graft (the mid-graft lesion and the venous anastomosis) or the peripheral draining vein. In the case of a graft, a second lesion is coded only when there is a lesion within the central veins and this would warrant a 35476/75978.

Graft Case 4 – Angioplasty with Multiple Lesions
(Multiple Angioplasty Codes)

Referral: Poor flow.

History:
- 64 year old female
- Forearm loop graft
- 4 years old
- Swelling of arm

Physical Examination:
- Forearm loop graft
- Hyper-pulsatile
- Strong thrill at venous anastomosis
- Swollen arm
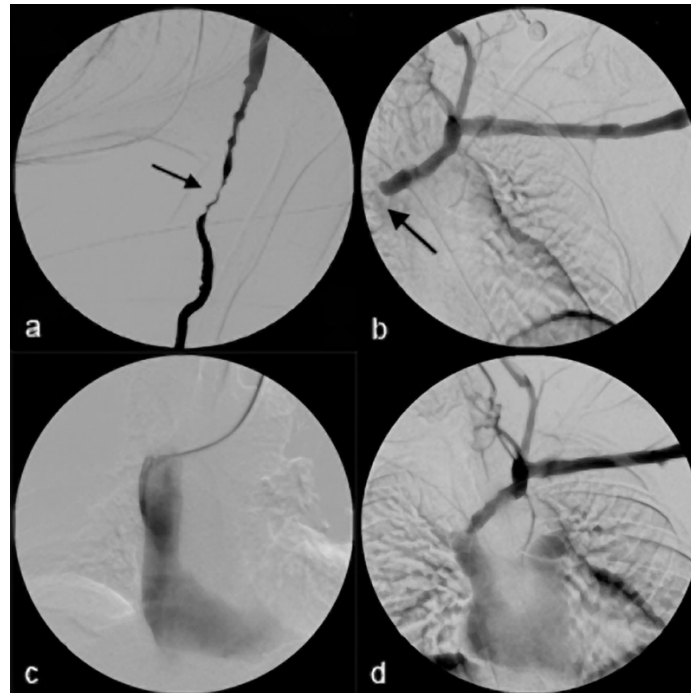
Lesion: Stenosis in basilic vein (Figure a), Apparent obstruction of junction between left brachiocephalic vein and superior vena cava (Figure b)

Procedure: Angioplasty of basilic vein with an 8 X 4 angioplasty balloon. Manipulation of guidewire to selectively catheterize the superior vena cava (Figure c), Angiogram of superior vena cava (Figure c), Angioplasty of brachiocephalic lesion (Figure d)

Analysis: This case had 2 stenotic lesions. One affects the basilic vein, the other the brachiocephalic vein.

Codes: Selective catheterization of the superior vena cava – 36010, Angiogram of graft – 75790, Angiogram of superior vena cava – 75827-59, 1st venous angioplasty – G0393, 75978, 2nd venous angioplasty – 35476-59, 759787-59

Discussion: In this case there appeared to be a complete obstruction of the brachiocephalic vein making it impossible to visualize the SVC. With a history of central venous catheters it was medically important to know how extensive the stenosis was. Selective catheterization of the SVC was done. Since the angiogram of the SVC was accomplished by selective catheterization, it should be coded as a separate procedure with a 59 modifier. The indication for the selective catheterization was the need to document its anatomy prior to considering an angioplasty not just simply performing the angioplasty. Otherwise it would have been bundled with the basic access angiogram code. The first angioplasty should be considered to be within the graft which by definition extends to the central veins. Therefore the use of the G code is warranted. Since the second angioplasty was in a central vein, coding it as a separate procedure with a 59 modifier is warranted. The G code was not used here since the lesion was outside of the access proper.

Graft Case 5 –Thrombectomy
(With Multiple Angioplasties and Arterial Embolus)

Referral: Thrombosed graft

History:
- 52 year old male
- Forearm loop graft
- 4 years old
- Frequent clotting

Physical Examination:
- Forearm loop graft
- No pulse
- No thrill
- Very scarred
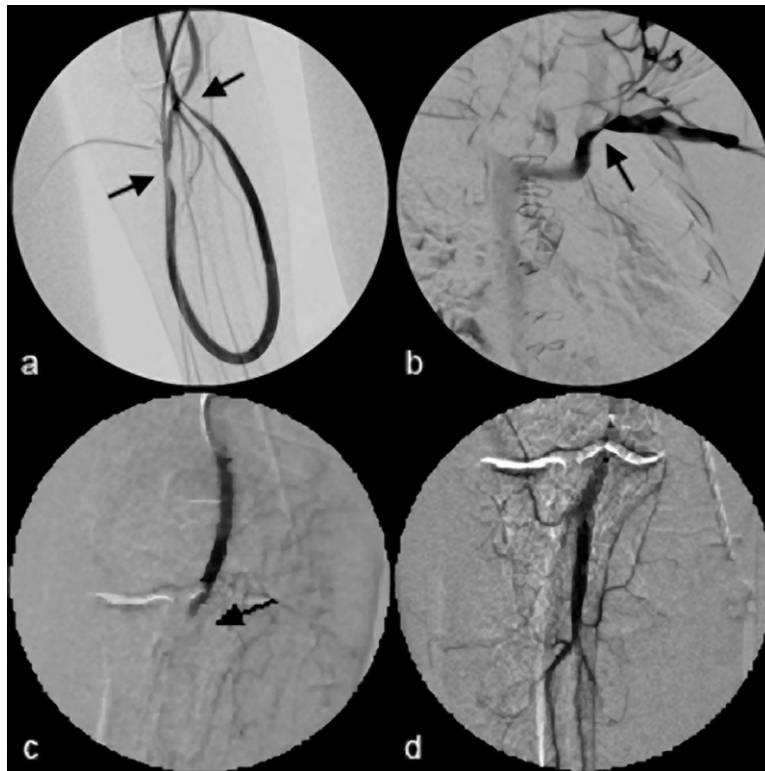
Lesion: Stenosis in graft on arterial side and at anastomosis (Figure a), Stenosis in subclavian vein (Figure b)

Procedure: Thrombectomy performed. The two angioplasties in the graft, required an approach from two different access sites (Figure a). Angioplasty of the subclavian lesion (Figure b). At end of procedure patient had symptoms of arterial occlusion. Embolus found in brachial artery (Figure c) which was removed (Figure d).

Analysis: The graft had two stenotic lesions. There was a separate lesion in subclavian. An embolus occurred as a complication which required treatment.

Codes: Cannulation – 36145, Selective catheterization of 1st order artery – 36215, Angiogram of graft – 75790, Arteriogram – 75710, Thrombectomy – 36870, 1st venous angioplasty – G0393, 75978, 2nd venous angioplasty – 35476-59, 75978-59, Embolectomy – 37186-59

Discussion: The graft was cannulated twice; one of these codes was dropped when the selective catheterization code was used as it was in connection with the embolectomy. The two stenoses within the graft warrant only a single code even though they were done via separate access sites. The G code should be used for this. The brachiocephalic lesion warrants a separate code since it is within the central vein area. It has a 59 modifier attached to indicate that it is a separate procedure. Treatment of the embolectomy warrants a code. The code 37186 needs to have a 59 modifier attached when used in this manner to indicate that it is a separate procedure.

Stent Case 1 –Angioplasty with Vein Rupture
(Stent Placement)

Referral: Poor flow

History:
- 47 year old male
- Forearm loop graft
- 4 years old
- Several prior angioplasties

Physical Examination:
- Forearm loop graft
- Hyper-pulsatile
- Thrill just above elbow
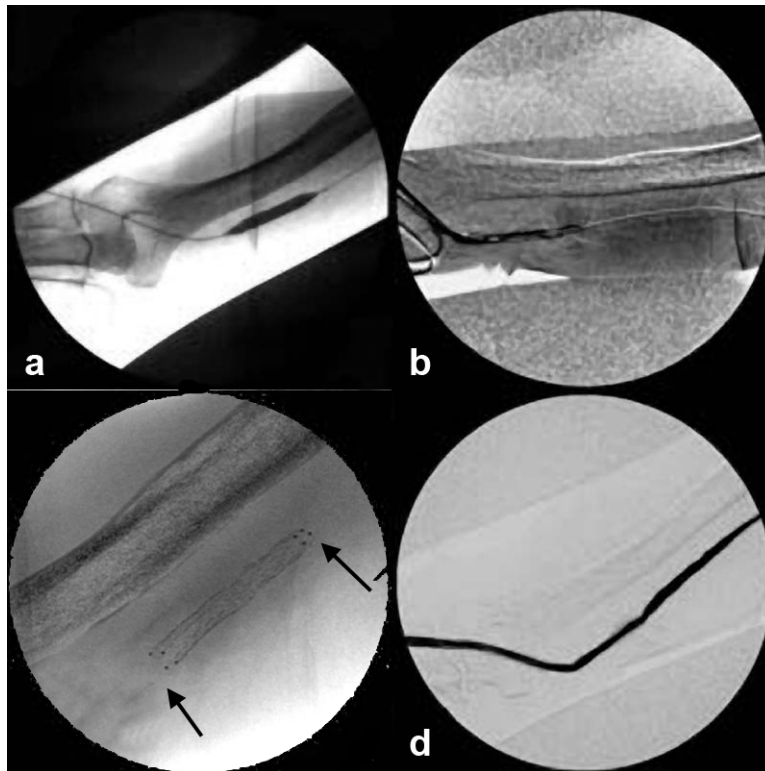
Lesion: Stenosis in basilic vein (Figure a)

Procedure: Angioplasty performed with an 8 X 4 balloon, stent placement to treat vein rupture.

Analysis: The angioplasty resulted in a complication – vein rupture (Fig b). This did not respond to the conservative technique of balloon tamponade and a stent was placed (Figure c). This gave a good result (Figure d).

Codes: Cannulation – 36145, Angiogram of graft – 75790, Venous angioplasty – G0393, 75978, Stent placement – 37205, 75960

Discussion: A straight forward angioplasty was performed, but resulted in a complication – vein rupture. This required the placement of a stent. Coding for this complication is warranted. The stent code – 37205 has a companion code for radiological supervision and interpretation – 75960. The G code was used here even though the lesion treated was not in the actual graft because by definition the access in a patient with a graft is considered to extend to the subclavian vein.

Stent Case 2: Two Stents in the Same Vessel

Referral: Thrombosed AVF

History:
- 65 year old female
- ESRD for 6yrs
- Brachiocephalic AVF
- Multiple prior angioplasties

Physical Examination:
- Left upper brachiocephalic AVF
- No flow - thrombosed
- No aneurysms
- Brachial artery palpable
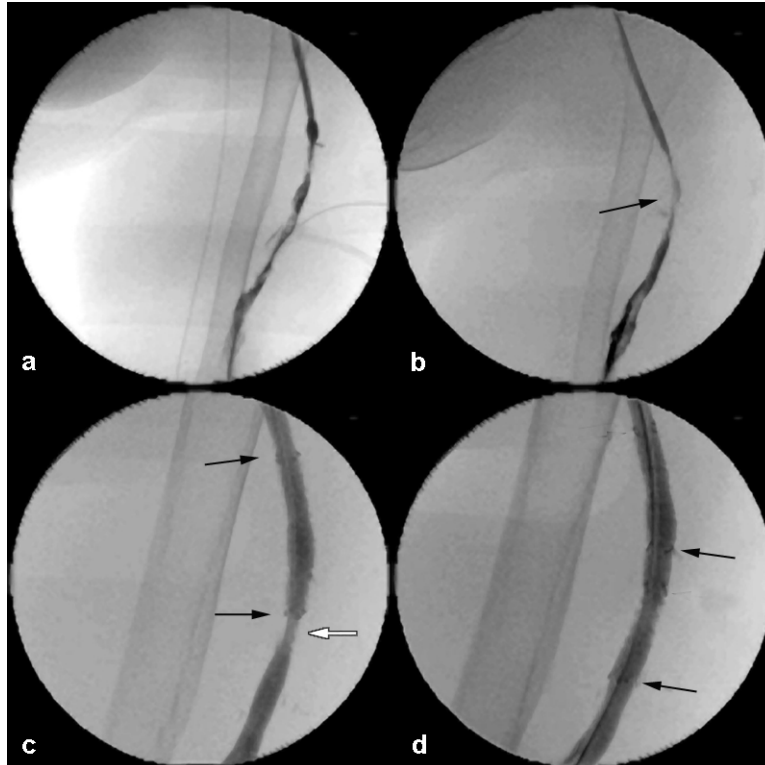
Procedure: Thrombectomy of the left upper arm brachiocephalic fistula was performed (Figure a). After angioplasty, a tight lesion in the upper fistula was noted to have elastic recoil (Figure b - arrow). A self expanding stent was placed (Figure c – arrows). The stent did not cover the entire lesion (Figure c – white arrow). Another self expanding stent was positioned and deployed (Figure d – arrows).

Analysis: The first stent did not cover the entire lesion so a second stent was placed for full correction of the lesion.

Codes: Cannulation – 36145, Angiogram of graft – 75790, Thrombectomy – 36870, Venous angioplasty – G0393, 75978, Stent placement – 37205, 75960

Discussion: This was a case of a fistula thrombectomy associated with a stenotic lesion that required stenting because of elastic recoil. The stent code was used only once because only a single vessel, the access, was stented.

Stent Case 3: Peripheral Vein with Stent

Referral: Patient was referred for low flow and high venous pressures

History:
- 57 year old male
- ESRD for 5 yrs
- Low flow
- High venous pressure

Physical Examination:
- Left brachial-basilic fistula
- Hyperpulsatile
- Thrill over upper fistula
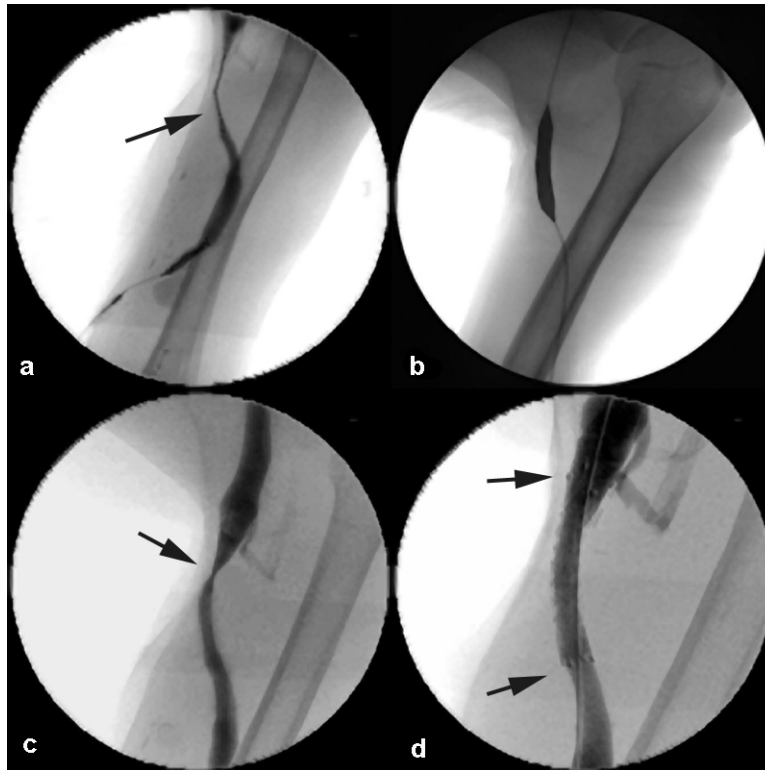
Procedure: 90% outflow stenosis in upper fistula at swing point (Figure a – arrow). Angioplasty done with an 8 mm balloon, full effacement obtained (Figure b). Recoil was noted with a 70% recurrence (Figure c - arrow). A self expanding 10 mm stent was positioned and deployed successfully across the lesion (Figure d - arrows)
Analysis: The stenotic lesion was treated with standard angioplasty, but there was a marked degree of elastic recoil. A stent was placed for the recoil
Codes: Cannulation - 36145, Angiogram of fistula – 75790, Venous angioplasty – G0393, 75978, Stent placement – 37205, 75960
Discussion: This was a simple straight forward case in which a stent was used to treat severe elastic recoil.

Stent Case 4: Central Venous Stenosis Treated with a Stent

Referral: Patient referred for suspicion of central vein stenosis

History:
- 46 year female
- Right IJ catheter for 4 months
- Arm swelling
- Prolonged bleeding and hyper-pulsatility

Physical Examination:
- Brachial-cephalic AVF right upper arm
- Hyperpulsatile
- Dilated veins over right shoulder and chest
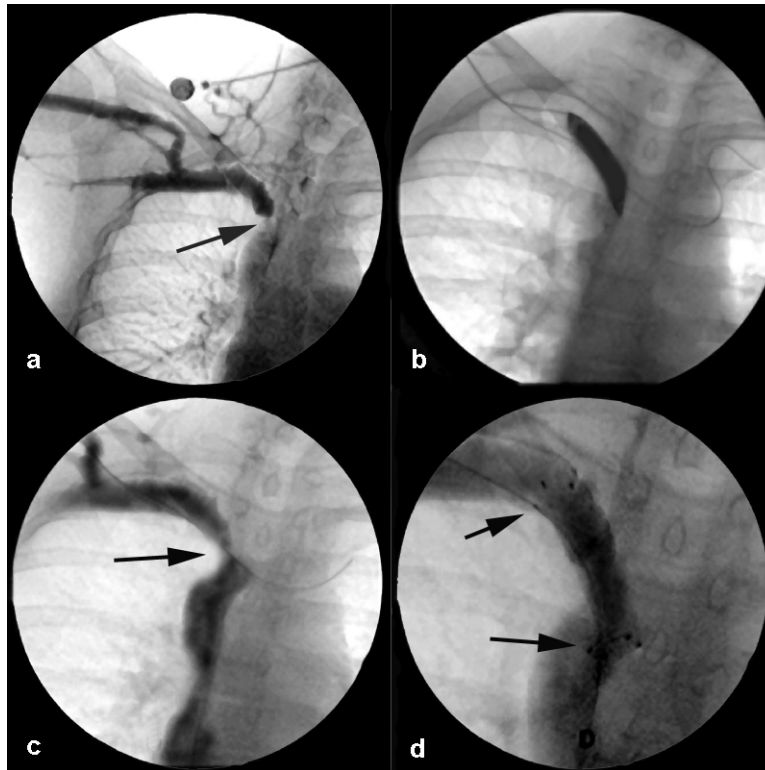
Procedure: >90% stenosis of the right brachiocephalic vein (Figure a - arrow). Angioplasty with a 12 mm balloon (Figure b), complete effacement was obtained. Follow-up angiogram showed recoil and residual stenosis of 50% (Figure c - arrow). A 12 mm self expanding stent was placed (Figure d - arrows). The left brachiocephalic vein was selectively catheterized and a second guidewire was passed into the left subclavian and left in place to mark the location of the beginning of the SVC.

Analysis: A routine angioplasty was performed for right brachiocephalic stenosis. Followup angiogram demonstrated recoil of 50%. A self expanding stent was deployed.

Codes: Cannulation – 36145, Angiogram of fistula – 75790, Venous angioplasty – 35476, 75978, Stent placement – 37205, 75960, Selective catheterization of 1st order vein – 36011.

Discussion: This was a case with severe stenosis of the brachiocephalic vein secondary to previous central venous catheters. Standard angioplasty was inadequate, necessitating a stent placement. The operator felt that marking the location of the beginning of the SVC was medically indicated. Because of the selective catheterization of the left brachiocephalic vein the code for selected catheterization of a 1st order was warranted.

Vascular Mapping Case 1 – Bimodal Mapping

Referral: Vascular mapping

Coding: The coding of this case is dependent upon the patient's history of prior accesses. If there has never been an arteriovenous access, then a G code would be used. If the Patient has had a previous arteriovenous access, then component codes would be used. If the mapping is done only by ultrasound, then ultrasound of both the artery and vein would be coded. If only angiographic mapping was done, then obviously there would be no ultrasound codes. Where both modalities are used, the basic principle that governs which codes to use is the fact that you can code for imaging by two modalities. A code for cannulation and injection of contrast – 36005, can be used when angiographic studies are done regardless of whether the G code is used or not.

Bimodal study – <u>No prior A-V access</u> - Cannulation and injection – 36005, Vascular mapping - G0365

<u>Prior A-V access</u> - Cannulation and injection – 36005, Venogram of single arm – 75820, Angiogram   of SVC – 75827, Ultrasound of artery - 93931

PD Case 1 – Insertion Using Interventional Techniques

Referral: Need to start peritoneal dialysis

History:
- 60 year old male
- Declining renal function over 2 years
- Needs to start dialysis, prefers PD
- No access

Physical Examination:
- No surgical scars
- No hernias
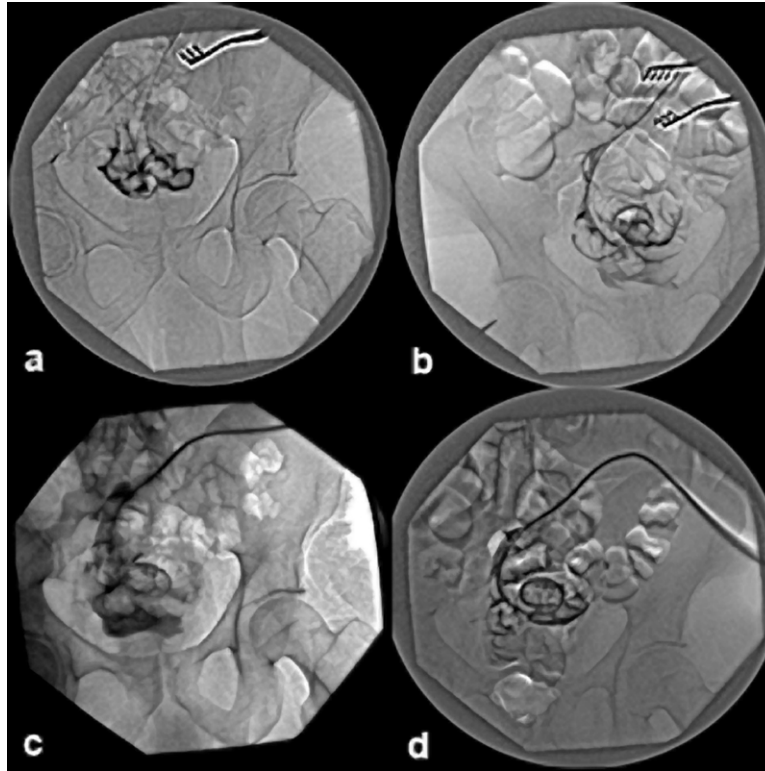
Procedure: Ultrasound was utilized to determine the thickness of the paniculous, the absence of underlying bowel and the position of the inferior mammary artery. After incising and dissecting to the peritoneum, the abdomen was entered with a micropuncture needle and a 5 Fr catheter was threaded into the peritoneum. Contrast injection confirmed the position of the catheter (Fig a). Using a stiff wire, dilators and tunneling tools a PD catheter was inserted and its position confirms by contrast injection (Figs b and c). Contrast injection confirmed the absence of kinks in the catheter tunnel (Fig d).

Analysis: this was an uncomplicated insertion of a PD catheter using standard Seldinger interventional/radiologic technique.

Codes: U/S guidance (intra-operative) – 76998, insertion of PD catheter including contrast injection – 49421, injection air/contrast into the peritoneal cavity – 74190

Discussion: this case represented a straight forward uncomplicated example of a PD catheter inserted into the abdomen using the Seldinger interventional/radiologic technique.

PD Case 2: Catheter Insertion by Peritoneoscopy

Referral: Needs to begin dialysis. Patient chooses to have peritoneal dialysis

History:
- 49 year old male
- Has had education in dialysis options
- Has not yet begun dialysis
- No prior abdominal operations

Physical Examination:
- Neck and thorax normal
- Abdomen flat with no surgical scars or hernias
- Palpation shows no abdominal masses and no hepatic or splenic enlargement.

Procedure: Under local anesthesia the abdomen was insufflated with air; a peritoneoscope was introduced; and peritoneoscopic exploration of the abdomen performed. No abnormalities were seen. The tract was then dilated and a swan neck peritoneal dialysis catheter placed without difficulty.

Analysis: This was an uncomplicated peritoneal dialysis catheter placement.

Codes: Laparoscopic placement of peritoneal dialysis catheter – 49324; injection air/contrast into the peritoneal cavity – 49400 - 59 with supervision and interpretation – 74190

Discussion: This was a straight forward case of PD catheter placement and was coded as such. The procedure for injection of air or contrast is billable with either the laparoscopic or radiologic method of PD catheter insertion but is used with the -59 modifier indicating a 2nd procedure. It is coded with the appropriate S & I code.

PD Case 3: Catheter Insertion by Laparoscopy with Ultrasound

Referral: Patient chooses to have peritoneal dialysis. Is presently receiving hemodialysis via a tunneled HD catheter

History:
- 60 year old female
- Past history of an appendectomy, abdominal hysterectomy and two cesarean sections

Physical Examination:
- Catheter in right IJ
- Thorax is normal
- Well healed lower midline surgical scarring
- Abdomen nontender with no masses

Procedure: After prepping and draping B-mode ultrasound scanning was performed and free movement of the viscera was seen in the region of the planned trocar insertion. The abdomen was insufflated with a CO_2 and explored laparoscopically. Adhesions were seen in the right lower quadrant. The catheter was placed in the left side of the pelvis and functioned well.

Analysis: This was an uncomplicated laparoscopic peritoneal dialysis catheter placement aided by intraoperative ultrasound.

Codes: Intraoperative Ultrasound – 76998. Laparoscopic peritoneal dialysis catheter placement – 49324; injection air/contrast into the peritoneal cavity – 49400 -59 with supervision and interpretation – 74190

Discussion: Indications for intraoperative ultrasound include identification of the epigastric vessel to avoid injury and avoiding areas of peritoneal adhesions this should be documented. Otherwise, this is a straight forward PD insertion. . The procedure for injection of air or contrast is billable with either the laparoscopic or radiologic method of PD catheter insertion but is used with the -59 modifier indicating a 2nd procedure. It is coded with the appropriate S & I code.

PD Case 4: Injection and Manipulation of Peritoneal Dialysis Catheter

Referral: Dysfunctional peritoneal dialysis catheter

History:
- 50 year old male
- Had peritoneal dialysis catheter placed 6 months ago by peritoneoscopy
- No other prior abdominal operations
- Had recent attack of treated peritonitis and has begun having sluggish drainage of the CAPD catheter.

Physical Examination:
- Neck and thorax were normal
- Well healed scar from peritoneoscopic PD catheter placement
- Peritoneal dialysis catheter exited in the left lower quadrant.
- Abdomen had mild diffuse tenderness with *no m*asses.

Procedure: Radio contrast was injected into the peritoneal dialysis catheter under fluoroscopy and seen to spill only out of the proximal side hole of the catheter. A hydrophilic guidewire was placed through the catheter to clear intraluminal obstruction. The guidewire was advanced and manipulated to disrupt peri-catheter adhesions. Follow up radio contrast injection demonstrated free spill into the peritoneal cavity.

Analysis: This was an injection and manipulation of the PD catheter under fluoroscopy.

Codes: Injection of peritoneal dialysis catheter – 49400, supervision and interpretation code 74190.

Discussion: If the catheter is manipulated under fluoroscopy but not injected with radio contrast then the general fluoroscopy code 76000 should be used. If the guidewire is also used to manipulate the position of the catheter, this would be coded as an unspecified peritoneal procedure - 49999.

INDEX

Illustrative cases

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