

Interventional Radiology Coding Case Studies
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Week of February 26, 2018

Mesenteric Angiogram & Embolization

MESENTERIC ANGIOGRAM WITH SUPERSELECTIVE ANGIOGRAM OF INFERIOR MESENTERIC ARTERY BRANCHES VIA ULTRASOUND-GUIDED LEFT COMMON FEMORAL ARTERY ACCESS AND COIL EMBOLIZATION OF MARGINAL BRANCHES FROM THE LEFT COLIC ARTERY

CLINICAL HISTORY: The patient is a 78-year-old female with multiple prior episodes of lower gastrointestinal bleeding, presenting with approximately 1-week hospitalization of several melanic stools. She has had a need for transfusion on this admission with a trend downward in her hemoglobin after the transfusion. She has never been hemodynamically unstable, and a colonoscopy with the GI service showed no evidence of active bleeding at that time. A nuclear medicine study completed on yesterday's date demonstrated suggestion of a small amount of bleeding at the splenic flexure. She is referred for mesenteric angiogram, potentially with a provocative study and potentially with intervention.

INFORMED CONSENT: The patient's diagnosis, treatment plan/procedure, risks and benefits, treatment alternatives, complications, and prognosis with and without treatment were explained to the patient and/or patient's family in plain language. Informed consent was obtained and we were asked to proceed with the procedure. A verbalized timeout was performed before the procedure with the required team present.

Sedation: The IV moderate /conscious sedation was supervised by the operating physician(s) using fentanyl and Versed for 80 minutes. The patient was independently monitored by the IVR nurse.

Fluoroscopy time: A total of 20.7 minutes of fluoroscopic x-ray time were utilized to perform this procedure.

Contrast Used: 110 mL LOCM 300-399 MG/ML

PROCEDURE: All elements of a maximal sterile barrier technique were utilized during this procedure including cap, mask, sterile gown, sterile gloves, large sterile sheet, hand hygiene and 2% chlorhexidine for cutaneous antisepsis. The patient was brought to the fluoroscopy suite and placed in the supine position on the fluoroscopy table with the patient's head towards the operator's left in standard position.

Ultrasound survey of the left inguinal region was completed with images stored and sent to PACS. The skin and subcutaneous tissues were generously infiltrated with 2% Lidocaine for local anesthesia. A 21-gauge microneedle was then advanced under ultrasound guidance into the left common femoral artery. With pulsatile blood flow return, a microwire was passed into the common femoral artery and observed under fluoroscopy to enter the abdominal aorta. A small incision was made on the needle and the needle was removed from the wire. A 4-French microsheath was passed over the microwire. The inner Stylet and the microwire were removed, and a Bentson wire was passed through the microsheath observed under fluoroscopy to enter the abdominal aorta. The 4-French sheath was then exchanged for a 5-French vascular sheath with the inner dilator removed and the sidearm attached to a saline heparinized flush. A 5-French Cobra-2 catheter with sideholes was then advanced over the Bentson wire to the level of T11.

Using the combination of the Cobra catheter and the Bentson wire, the superior mesenteric artery was selected. An angiogram of the superior mesenteric artery was then completed. The contrast rate with the Power injection was 5 mL/sec for a total of 25 mL (5-second injection).

We then elected to catheterize the inferior mesenteric artery. The Bentson wire was left in place and the Cobra catheter was exchanged for a 4-French Sos Omni catheter. The Sos Omni catheter was advanced to the T12 level. The image intensifier was brought to a right anterior oblique position at 45°, and then the Sos Omni catheter was used to select the inferior mesenteric artery with the use of the Bentson wire. Once we confirmed position with the contrast injection by hand, the image intensifier was brought to the AP position for an angiogram of the inferior mesenteric artery.

In order to gain more purchase and distance within the branches of the inferior mesenteric artery, a Rapid Transit microcatheter with a 70° angled Glidewire was used. The combination of the Glidewire and the microcatheter was used to select the left colic artery and then the superior-directed marginal branch towards the splenic flexure. Angiogram of the marginal branch at the splenic flexure was completed. The microcatheter was brought to a distal position in the region of the watershed territory with multiple hand injections completed at various angles. Once extravasation of contrast was identified in the splenic flexure, there was a final attempt to catheterize the terminal branches to the colon at this level. Because of the small caliber of these vessels, the catheterization of the direct vessels was abandoned, and coiling of the marginal branch at this segment was elected. Coil embolization of the distal marginal branch was completed by placing 3 Tornado coils (3 x 2, 3 x 2, and 4 x 2).

Follow-up angiogram of the distal marginal branch demonstrates decreased flow to the region with no evidence of extravasation of contrast. The microcatheter and base catheter were then removed. The sheath was removed and manual pressure was used for hemostasis at the left common femoral artery. The patient tolerated the procedure well and remained hemodynamically stable throughout.

DISCUSSION: Ultrasound survey of the left inguinal region demonstrates complete patency of the left common femoral vein and left common femoral artery. Angiogram of the superior mesenteric artery demonstrates normal course, caliber, and contour. The jejunal arcades fill within normal limits. No evidence of tumor blush, extravasation of contrast, or arteriovenous malformation was identified on the superior mesenteric artery angiogram. The ileocolic artery fills within normal limits. Angiogram of the inferior mesenteric artery demonstrates patency of the inferior mesenteric artery, although the origin is stenotic with difficult purchase of the 4-French catheter. The left colic artery is widely patent as well as an ascending and descending marginal branch of the colic artery. There is significant competing flow from the superior rectal artery. There is also evidence of competing flow at the watershed territory of Griffiths point at the splenic flexure with competing flow from the superior mesenteric artery inflow. Multiple angiograms at the level of the splenic flexure with various obliquities and magnification demonstrated extravasation of contrast at the splenic flexure from small branches of the marginal inferior mesenteric artery branches. Subsequently, there is demonstration of coil embolization of this ascending fourth-order marginal branch at the splenic flexure. Final angiogram demonstrates decreased flow to this region with no further extravasation of contrast identified on the final images.

IMPRESSION: Mesenteric angiogram targeting the superior mesenteric artery and inferior mesenteric artery demonstrates extravasation of contrast at the splenic flexure via fourth-order marginal branches from the inferior mesenteric artery. Status post coil embolization of fourth-order marginal branches at the splenic flexure from the inferior mesenteric artery. Final images demonstrate decreased flow to the area with no further active extravasation of contrast.

Interventional Radiology Coding Case Studies CPT Codes

Week of February 26, 2018

Mesenteric Angiogram & Embolization

Procedure Codes:

- 36245 (59) Catheterization superior mesenteric artery
- 36247 Catheterization marginal branch colic artery
- 75726 (59) Superior mesenteric angiogram
- 75726 (59) Inferior mesenteric angiogram
- 75774 (59) Splenic flexure angiogram
- 37244 Embolization for bleeding
- 76937 Ultrasound guidance for vascular access
- 99152 Moderate sedation first 15 minutes
- 99153 x4 Moderate sedation each additional 15 minutes
- Q9967 x110 LOCM 300-399 MG/ML

Diagnosis Codes:

- K92.2 GI Hemorrhage

Comments:

- Catheter was placed into the aorta, followed by the superior mesenteric artery (SMA) for imaging (36245, 75726). Non-selective catheterization of the aorta is bundled as well as selective catheterization of the first order SMA.
- Catheter was placed in the inferior mesenteric artery for imaging (75726); a separate vascular family. The most distal catheter placement within this vascular family was a fourth order marginal branch of the colic artery (36247). All lesser orders (IMA and left colic) are bundled. Imaging of the splenic flexure was also performed (+75774). The splenic flexure was imaged following selective catheterization of the vessel. Code 75726 may only be assigned once per vascular family, therefore imaging of the splenic flexure in the same family as the IMA is assigned code +75774.
- Embolization performed for treatment of hemorrhage is reported with 37244 (embolization of marginal branch).
- Documentation requirements met for ultrasound guidance for vascular access (+76937).
- 80 minutes of moderate conscious sedation noted, billed in 15 minute increments. (99152, 99153). At least 8 minutes of a 15 minute block must be completed to assign an additional 15 minutes.
- *Supplies are billed by the facility performing the procedure and should not be assigned for professional fee coding.*

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Applicable Coding Rules:

Catheterization

- The visceral vessels are below the diaphragm, therefore codes 36245-36248 are utilized to describe catheterizations of these vessels.
- Code for the highest order vessel selected, the most distal catheter placement, and always code selective catheterization over non-selective catheterization as non-selective catheterization codes are bundled with selective catheterization codes.

Diagnostic Angiography

- An initial diagnostic angiogram may be reported when performed. If a prior diagnostic angiogram has been performed, diagnostic angiography should only be reported separately in accordance with guidelines established for reporting with transcatheter procedures. Diagnostic angiography/venography performed during the same session as a therapeutic intervention may be reported separately when:
 - ❖ No prior catheter-based diagnostic angiography/venography study has been performed or if a prior study was performed but it is not available.
 - ❖ The prior diagnostic study is inadequate.
 - ❖ There has been a change in the patient's condition since the diagnostic study.
 - ❖ There is a clinical change during the procedure that requires further evaluation beyond the target area of the intervention.
 - ❖ Diagnostic angiography/venography performed at a separate setting from an interventional therapeutic procedure is separately reported.
- The NCCI Manual Chapter 5 states: *“Angiography may be a separately reportable procedure with modifier 59 only if it satisfies guidelines for diagnostic angiography included in the “Vascular Embolization and Occlusion” section of the CPT Manual, national Medicare guidelines, and local Medicare Administrative Contractor guidelines.”*
- Code 75726 describes selective imaging of the visceral vessels. Selective imaging requires the catheter to be in the vessel for the contrast injection.

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Applicable Coding Rules (continued):

- ❖ Code 75726 is assigned one time per vascular family for the initial vessel selectively catheterized and imaged.
- Add on code +75774 is used for imaging of additional branches from an additional selective catheterization after the base imaging code has been assigned for a particular family.

Embolization

- When performing embolization procedures the catheter must be manipulated through the arterial or venous system to perform the procedure. Catheterization codes should be assigned in accordance with the rules for reporting selective catheterization.
 - ❖ The NCCI Manual Chapter 5 states: “*For vascular embolization procedures (CPT codes 37241- 37244) physicians may separately report selective catheterization CPT codes. However, physicians should not separately report nonselective catheterization CPT codes for these procedures.*”
- It is important to note that the site of the embolization alone is not the sole factor in determining catheterization selectivity. There may be instances when it is necessary to place the catheter beyond the vessel that is the site of the embolization. Remember, catheter selectivity is based on the most distal catheter placement.
- 37244 for vascular embolization for **arterial or venous hemorrhage or lymphatic extravasation** is assigned for the following clinical indications:
 - ❖ Gastrointestinal (GI) bleed
 - ❖ Trauma induced hemorrhage of viscera and pelvis
 - ❖ Post partum hemorrhage
 - ❖ Bronchial embolization for hemoptysis
 - ❖ Chylorus effusion of thoracic duct

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Applicable Coding Rules (continued):

- When a patient presents with two clinical indications, such as a GI bleed due to a ruptured aneurysm, the code selection is based on the most immediate indication. Code 37244 is coded over 37242 when there is a GI bleed due to a ruptured aneurysm.

RS&I Codes

- All RS&I work is bundled into the surgical code for embolization. This work includes the following services: contrast injections, angiography/venography, roadmapping, and fluoroscopic guidance for the intervention, vessel measurement, and completion angiography/venography.
- Code 75898 is not utilized with codes 37241-37244 for completion angiograms to check the results of the embolization.

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