Interventional Radiology Coding Case Studies

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TIPS Revision & Coil Embolization

Procedure: Portal venography with hemodynamic measurements, TIPS revision, selective catheterization and coil embolization of gastric varices, post embolization venography.

Indications: 61-year-old patient with cirrhosis and portal hypertension secondary to chronic hepatitis C with a current MELD score of 12.0. Previous hospitalization for very severe gastrointestinal bleeding from gastric varices. Status post TIPS procedure and embolization of gastric varices on 7/7/2018. Duplex Doppler ultrasound unable to detect flow within the TIPS shunt. Rule out occlusion.

Description: Outside ultrasound showed no flow through TIPS. Patient was then referred for a TIPS study and revision if necessary. Informed consent was obtained from the patient prior to the procedure. During this process, the procedure and potential alternatives was explained along with the Intended outcome and benefits. The risks of the procedure, including the possibility of an unsuccessful procedure, as well as the risk of not doing the procedure were discussed. The patient was given the opportunity to ask any questions regarding the procedure and appeared competent to make medical decisions. A signed consent form which documents this discussion was placed in the medical record. The anesthesiology service was consulted to provide hemodynamic support and general endotracheal anesthesia during the procedure. General endotracheal anesthesia was induced by the anesthesiology department. The patient was placed on the special procedures table. The right neck was sterilely prepped and draped. All elements of maximal sterile barrier precautions are utilized. After administration of local anesthesia using l % Lidocaine, a puncture was performed of the right jugular vein using micropuncture kit under ultrasound guidance. A 10 French angled sheath was Inserted using Seldinger technique, advanced through the right heart, and manipulated into the TIPS shunt. Initial venography demonstrated complete occlusion of the shunt. A Glidewire was advanced beyond the level of occlusion and advanced into the portal venous system. A venogram was then performed with a hand-injection contrast through a 5 French multipurpose catheter showing extensive collateral vessels including large gastric varices filling via the left coronary vein to retroperitoneal collaterals and a spontaneous shunt to the left renal vein. Hepatic pressures were then obtained. Initial portal vein pressure was 26 mmHG. Initial right atrial pressure

was 20 mmHg, showing a gradient of 6. A 10 mm diameter x 4 cm length Conquest angioplasty balloon was used to dilate the TIPS shunt. Repeat venography showed restoration of flow through the TIPS shunt with some residual narrowing in the uncovered portion of the stent. Attention was then turned to the extensive gastric varices. A total of eight 8 mm diameter by 14 cm length Nester coils were deployed in the gastric varices. Repeat venogram still shows some filling of the varices and moderate stenosis of the TIPS. Under fluoroscopic guidance, a 10 mm diameter x 8 cm length (2 cm uncovered/6 cm covered) Viatorr stent was deployed within the existing TIPS extending l cm more proximally Into the portal vein and 1 cm more distally into the right atrium. The Viatorr stent was then dilated with a 10 mm diameter x 4 cm length Conquest balloon.

Portomesenteric venography was then performed through the diagnostic catheter positioned in the proximal splenic vein and then through a pigtail catheter positioned in the main portal vein. The Viatorr stent was widely patent with antegrade flow through the TIPS shunt into the right atrium. There was no significant filling of any gastric varices or the spontaneous portosystemic shunt. Repeat pressures were obtained between the right atrium and main portal vein without a gradient. The sheath was removed and hemostasis was obtained at the right jugular venous access site using manual pressure. A sterile dressing was applied.

The patient the tolerated the procedure well and was hemodynamically stable throughout. There was no evidence of complications. The patient was sent to the floor in stable condition.

Conclusion: Initial venogram demonstrated complete occlusion of TIPS. Following balloon angioplasty, there remained a 6 mmHg gradient between the portal vein and the right atrium. Revision of the original TIPS shunt with angioplasty and re-stenting using a 10 mm diameter *x* 8 cm length (2 cm uncovered/6 cm covered) Viatorr stent. Coil embolization of gastric varices as described above. Final venogram demonstrates no significant filling of a gastric varices or the spontaneous portosystemic shunt. There was hepatopedal flow with a widely patent TIPS shunt.

Interventional Radiology Coding Case Studies
CPT Codes

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TIPS Revision & Coil Embolization

Procedure Codes:

- 37244 Coil embolization of gastric varices
- 36011(59) Catheterization of left coronary (gastric) vein
- 37183 TIPS Revision

Diagnosis Codes:

- T82.858A TIPS occlusion
- I86.4 Gastric varices
- K76.6 Portal hypertension
- B18.2 Chronic hepatitis C
- K74.60 Cirrhosis

Comments:

- TIPS revision is reported with code 37183. This is an all inclusive code that bundles the following components - venous access, hepatic and portal vein catheterization, portography with hemodynamic evaluation, intrahepatic tract formation/dilation, stent placement and all associated imaging guidance and documentation.
- Code 37244 is assigned for embolization of varices with bleeding. Embolization of varices may be reported separately in addition to TIPS procedures.
- Catheterization code 36011 is assigned for catheterization of the left coronary vein (gastric) to perform the embolization. Modifier -59 needs to be appended to code 36011 so it does not bundle with code 37183.

Applicable Coding Rules:

Transjugular Intrahepatic Portosystemic Shunt (TIPS)

Catheterization Coding

- All hepatic and portal catheter work necessary to create TIPS or revise TIPS is included in the surgical codes 37182 and 37183.

- Catheterizations to perform interventions in other vessels during TIPS may be reported separately (ie, splenic vein, gastric vein for embolization).

Diagnostic Angiography

- Diagnostic angiography of the portal system is not reported separately.

TIPS (37182, 37183)

- Code 37182 is assigned for a TIPS insertion.

- Code 37183 is assigned for a TIPS revision.

- Codes 37182 and 37183 include the following components:

    - Access and catheterization of hepatic and portal vein

    - Portography with hemodynamic evaluation

    - Intrahepatic tract formation/dilation

    - Stent placement

    - Imaging guidance

Radiological Supervision & Interpretation

- All imaging and imaging guidance necessary to create TIPS or revise TIPS is included in the surgical codes 37182 and 37183.

Applicable Coding Rules (continued):

Other Procedures

- Embolization of other veins may be performed at the same time as a TIPS insertion or revision. The embolization procedure is reported separately. Note that embolization of varices is 37241, however, code 37244 is a reported for embolization of bleeding varices. Any additional catheter work associated with performing the embolization procedure may be separately reported.

- All other interventions unrelated to the TIPS insertion or revision may be reported separately

Embolization Coding Rules

Catheterization Codes

- 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.*"

- Remember in the lower extremities, the external iliac and common femoral are considered one vessel for coding purposes and in the upper extremities the subclavian and axillary are also considered one vessel for coding purposes.

- 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.

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.

Applicable Coding Rules (continued):

- 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."*

Embolization Codes (37241-37244)

- Embolization codes 37241-37244 are assigned based on the presenting clinical indication.
- 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
- 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.
- When a stent is placed to provide latticework for deployment of embolization coils (for aneurysm), the embolization code is reported and not the stent code.
- **Multiple Vessels.** Embolization codes are not assigned per vessel, rather they are assigned once per operative field.
- **Operative field.** Only one embolization code should be reported for each operative field. An operative field refers to the area immediately surrounding and directly involved in a treatment/procedure. Embolization procedures performed at a single setting that include multiple surgical fields such as for a patient with multiple trauma and bleeding from the pelvis and the spleen, may be reported with multiple embolization codes.

Applicable Coding Rules (continued):

- ❖ The following are considered one operative field: multiple vessels feeding a bladder tumor, multiple vessels in the same extremity, multiple vessels for endoleak, multiple hemodialysis side branches, bilateral uterine arteries.

- ❖ The following are considered two or more operative fields: bilateral organs, bilateral arteriovenous malformations, bilateral testicular veins (varicocele), bilateral ovarian veins (pelvic congestion), intracranial aneurysms (two or more), multiple bleeds (spleen, pelvis).

    - CPT Assistant November 2013, states that when two distinct liver lesions are treated, the lesions are considered two separate operative fields (right lobe and left lobe), therefore 37243 may be assigned two times.

- ➢ Administration of Heparin, Nitroglycerin, etc. during the procedure is not coded separately.

RS&I Codes

- ➢ **Bundled Components.** 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.