Tips for TIPS: Transvenous Intrahepatic Portosystemic Shunt

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Transvenous intrahepatic portosystemic shunt (TIPS) is a relatively new procedure used to treat complications of severe liver disease such as bleeding esophageal varices. This extensive procedure is typically performed by interventional radiologists and involves the placement of a stent in the splenic vein once a shunt tract has been established.

Much of the literature about the TIPS procedure makes reference to it as "transjugular intrahepatic portosystemic shunt (TIPS)." When a specific code (37182) for the procedure was included in the Current Procedural Terminology (CPT) in 2003, its description read: "Insertion of transvenous intrahepatic portosystemic shunt(s); (TIPS)." This is the current nomenclature for the procedure and allows for the code to be assigned in case the access is other than the jugular vein.

What Is TIPS?

TIPS is a nonsurgical method of establishing a portosystemic shunt tract and placing a metallic stent to manage complications of portal hypertension that result in variceal bleeding and ascites. The procedure is performed percutaneously, and a decompressive channel is created between an intrahepatic branch of the portal vein (inflow tract) and a hepatic vein (outflow tract) to establish normal venous blood flow between the two vessels.

Portal hypertension is defined as abnormally high blood pressure in the branches of the portal vein.[1] To understand how portal hypertension develops, it is necessary to review the anatomy of the liver. The portal vein receives the blood from the intestines, spleen, pancreas, and gallbladder. After the vein enters the liver, it divides into right and left branches, and finally into smaller channels throughout the liver. When the blood leaves the liver, it drains back into circulation through the hepatic vein.

The most common cause of portal hypertension is cirrhosis of the liver, which causes increased resistance to blood flow. Cirrhosis occurs when toxins such as medications or alcohol damage the cells of the liver. As the cells die, scar tissue forms and blood does not flow properly through the liver. As a result of the increased pressure, blood flows around the liver in smaller collateral veins that form, connecting the portal veins to the general circulation and bypassing the liver. These collateral veins enlarge and are called varices; they are very fragile and prone to bleeding, especially in the esophagus and upper stomach.

Bleeding varices may be treated with drugs such as vasopressin, injections of a sclerosing substance during endoscopic sclerotherapy, or by rubber-band ligature. If these procedures are not effective or the bleeding recurs, a TIPS procedure may be performed for decompression. The TIPS procedure provides a new path for blood to circulate from the intestines, through the liver, and then back to the heart, reducing the pressure in the varices and preventing bleeding or rupture.

Indications for TIPS

Some of the most common indications for the TIPS procedure include:

- Uncontrollable variceal hemorrhage
- Current or prior variceal hemorrhage that is not amenable to initial or continued endoscopic therapy
- Prophylaxis against recurrent bleeding in high-risk patients
- Portal hypertensive gastropathy or intestinopathy
- Refractory ascites
- Hepatic hydrothorax
- Budd-Chiari syndrome
- Infection and inflammatory reaction to a vascular or other prosthetic device, implant, or graft[2]

TIPS Technique

The TIPS procedure is performed when possible to avoid a more invasive open procedure. TIPS involves several steps; it is a very complex interventional procedure and may be done with conscious sedation or general anesthesia. A common method for performing TIPS is discussed in the following explanation.

Catheterization of the jugular vein is performed to establish access. This access is many times in the right internal jugular neck vein because it lies directly in line with the superior and inferior vena cava. Then, a sheath that accommodates various catheters, guidewires, or needles replaces the needle. This vascular sheath is a flexible tubular device that allows activity to occur without damage to the access vein.

The sheath is advanced into the inferior vena cava and catheterization of the hepatic vein is performed, usually with ultrasonographic guidance. Hepatic venography is performed to guide the passage of a long, curved needle from the chosen hepatic vein through the liver parenchyma and into an intrahepatic branch of the portal vein. The correct placement of the needle may be confirmed by contrast medium injection.

A pressure measurement catheter is inserted, and direct measurement of the systemic and portal vein pressures is obtained through venous access. Portal venography is performed. An angioplasty balloon catheter is advanced, and then balloon dilation of the tract is performed between the hepatic and portal veins; a metallic stent is deployed within the tract to maintain it against the recoil of the surrounding liver parenchyma. Angiographic and hemodynamic assessment is performed to evaluate resultant pressure reduction.

Dilation of the stent follows until satisfactory pressure levels have been achieved. The stent and sheath are withdrawn prior to completion of the procedure.[3] For illustrations of the procedure and a complete procedure scenario, refer to *CPT Assistant*, October 1996. The December 2003 issue of *CPT Assistant* includes vignettes for the insertion of a TIPS and for a revision that fully describe the procedures.

Coding and Reporting TIPS

When coding TIPS, one must understand how the procedure is performed and be aware of the key words for indexing it in both CPT and ICD-9-CM. The entry “TIPS” is not listed in the ICD-9-CM Volume 3 or CPT code book indices, so knowledge of alternative words is required.

CPT Coding

Prior to 2003 the coding of TIPS in CPT was quite involved. Each component of the procedure was coded, and correct coding involved multiple CPT codes. CPT 2003 includes a new, single code that encompasses all aspects of the procedure. Code 37182 is assigned for the insertion of the transvenous intrahepatic portosystemic shunt(s) or the TIPS procedure. Code 37183 is available for revisions.

Within the description of the codes, CPT clarifies that the code includes all components of the procedure and they are not separately reported. An instructional note states that the imaging (codes 75885 or 75887) is not assigned in conjunction with codes 37182 or 37183. Imaging codes are included in the procedure code because the work is always done at the same time by the same physician. To index the codes for the TIPS procedures, select “insertion” or “revision,” then “shunt, intrahepatic portosystemic.”

Codes 37182 and 37183 have 0-day global periods under the Medicare physician fee schedule. This means that the work specific to this procedure performed on the day of intervention is included in the value of these codes. Any pre- or postprocedural evaluation and management work should be reported separately. If variceal embolization is performed with TIPS or TIPS revision, it is separately reportable. Catheterization of the varix (via TIPS) is reported with code 36012, and transcatheter embolization is reported with codes 37204 and 75894.[4]

In rare cases, a second TIPS procedure may be done for patients in whom hypertension and varices persist and, in this instance, should be reported separately. Other diagnostic imaging and procedures provided at the same interventional session, but not considered an integral part of the TIPS procedure, should be reported separately.

ICD-9-CM Reporting

When assigning ICD-9-CM diagnosis codes, the reason for the procedure must be accurately reported to establish medical necessity and justification for the procedure. It would be prudent to investigate whether your state has a local coverage determination (or LCD) available for the TIPS procedure. Use www.cms.hhs.gov/mcd to identify any national or local coverage policies.

Some of the ICD-9-CM diagnosis codes that indicate medical necessity of the TIPS procedure include:

- 452, Portal vein thrombosis
- 453.0, Budd-Chiari syndrome
- 456.0, Esophageal varices with bleeding
- 456.20, Esophageal varices in diseases classified elsewhere with bleeding
- 456.8, Varices of other sites
- 571.2, Alcoholic cirrhosis of liver
- 571.5, Cirrhosis of liver without alcohol
- 572.3, Portal hypertension
- 789.5, Ascites
- 996.60–996.62, Infection and inflammatory reaction due to devices
- 997.4, Digestive system complications, hepatic failure/heptorenal syndrome

The correct procedure code assignment for the inpatient facility to report TIPS in ICD-9-CM Volume 3 is 39.1, Intra-abdominal venous shunt. This code is indexed: Bypass, vascular, intra-abdominal, venous. It can also be indexed: Shunt, transjugular intrahepatic portosystemic (TIPS). v

Notes

1. Merck Research Laboratories. *The Merck Manual—Second Home Edition*. Available at www.merck.com/mrkshared/mmanual_home2/home.jsp.
2. American College of Radiology. "Practice Guideline for the Creation of a Transjugular Intrahepatic Portosystemic Shunt (TIPS)." ACR practice guideline available at www.acr.org/departments/stand_accred/standards/pdf/tips.pdf.
3. Ibid.
4. *Interventional Radiology Coding Users' Guide*, Ninth ed. Reston, VA: American College of Radiology, 2003.

References

"2003 CPT Code Update." *ACR Bulletin*, December 2003.

"Coding TIPS: Transjugular Intrahepatic Portosystemic Shunt." *CPT Assistant* 6, no. 10 (1996).

CPT Changes: An Insider's View. Chicago: American Medical Association, 2003.

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