**Indications for Procedure:** Cardiogenic shock, heart failure

**Procedure Performed:**
- Insertion of Impella CP percutaneously inserted left ventricular assist device
- LHC (LVEDP) 25–28 mm Hg
- Left femoral angiogram
- PTA of left common and external iliac artery

**Description of Procedure:** The patient was brought emergently to the cardiac catheterization suite from the Emergency Department.

8 Fr Sheath was placed in LFA and a left femoral angiogram was done.

The iliac artery was ballooned with a 4 by 20 and then 6 by 20 Mustang balloon.

Subsequently after serial dilations, a 14 Fr sheath was placed in the LFA.

A 0.035 super-stiff Amplatz wire was advanced into the proximal portion of descending aorta.

Serial dilatations of the left arteriotomy site were performed with 10 and 12 Fr dilators. A 14 Fr sheath was then advanced into the left common femoral artery. An angled pigtail catheter 5 Fr was advanced through 5 Fr sheath and then used to cross the aortic valve with a 0.035 J-wire. The J-wire was then exchanged for a 0.018 steel core wire. The pigtail catheter was removed and the steel core wire was left at the apex of the left ventricle. The Impella CP catheter had been prepped on a separate sterile bedside table. The catheter was brought onto the operative field.

The catheter was advanced over the guidewire into the left ventricle. The guidewire was removed. Catheter was confirmed to be in proper position by fluoroscopy.

Percutaneous left ventricular support was then initiated. The catheter was noted for 3 L per minute. The femoral sheath was sutured into place and a sterile occlusive dressing applied. There were no complications.

The patient remained critically ill during that procedure, but had no further deterioration in her clinical status. She was transported in stable condition to the cardiac recovery unit for ongoing management of the percutaneous left ventricular assist device.

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[1] A preoperative procedure list is provided for the planned procedures. The Impella CP is the name of a device that pumps blood in the heart. LHC is for left heart cath. PTA is for percutaneous transluminal angioplasty.

[2] LHC—left heart cath. The left ventricular end diastolic pressure is recorded.

[3] A summary of the iliac artery procedures is provided. LFA stands for left femoral artery.

[4] The documentation for the ventricular assist device is provided.

[5] The catheter was advanced into the left heart ventricle. The LVEDP pressure is reported above.


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What are the CPT® and ICD-10-CM codes reported?

**CPT® Codes:** 37220-LT, 93452-26, 33990-51

**ICD-10-CM Code:** I50.9
**Rationales:**

**CPT®:** If your first choice to look for this code in the CPT® Index is Insertion, you will find subterms for Ventricular Assist Device, which points you toward looking up Ventricular Assist Device. Looking for VAD as the main term in the CPT® Index, there are indented terms for Insertion, then Implantable code range 33990–33991. Turning to these codes, the best choice is 33990 for insertion of the Impella with arterial access through the iliac artery. Code 33991 is not be appropriate because there was only on access and there was no transeptal puncture.

Although different terms are used in our case, the end result of the procedure is the revascularization of a vessel. In the CPT® Index, Look for Revascularization/Artery, then we find the portions of the anatomy underneath. Looking to the listing of Iliac, the code range is 37220–37223. Because the only procedure performed was angioplasty, code 37220 is the code to report. Looking at this code range in the CPT® codebook, there is over a page of guidelines.

Note: Before coding endovascular revascularization procedures, always read these guidelines carefully to assure that you have a good understanding of your code choice. There are multiple bundling rules in these guidelines.

In the CPT® Index, look for Cardiac Catheterization. There is a subterm listing for Left Heart. Indented under that is “with Ventriculography” the code listed is 93452. Upon looking for 93452, we find that it meets the requirements of the documentation for this case. The documentation requirements for a left heart cath are that the catheter must have been introduced in the left side of the heart. In this scenario, the catheter was inserted into the left ventricle. Also, for a left heart cath, there must be hemodynamic measurements. In this scenario, the LVEDP, left ventricular end diastolic pressure was recorded. Modifier 26 is used in coding for professional fee.

In this procedure, the physician uses an iliac artery and achieves increased endovascular vascularization, as well as the insertion of the Impella device to pump blood through the heart in the setting of cardiogenic shock. Using a retrograde approach and under angiographic guidance, the iliac artery is crossed using a catheter and guidewire. The balloon catheter is inflated in order to dilate the vessel to a larger diameter in order to complete the device insertion. A left heart catheterization was performed as well.

CPT® codes are reported from highest to lowest RVU.

**ICD-10-CM:** In the ICD-10-CM Alphabetic Index, look for the condition, which is Shock. Under Shock, review the indented terms for the specific kind of shock. Cardiogenic shock is listed, with code R57.0. Confirmation in the Tabular List shows us nothing to contradict the use of this code. Cardiogenic shock is a condition in which a suddenly weakened heart isn't able to pump enough blood to meet the body’s needs. The condition is a medical emergency and is fatal if not treated right away. Cardiogenic shock is a life-threatening medical condition resulting from an inadequate circulation of blood due to ventricles not functioning effectively.

Chapter 18, codes starting with the letter R, includes symptoms, signs, abnormal results of clinical or other investigative procedures, and ill-defined conditions regarding which no diagnosis classifiable elsewhere is recorded. Signs and symptoms that point to a specific diagnosis have been assigned to a category in other chapters of the classification.

In the ICD-10-CM Alphabetic Index, look for Failure/heart. This indexes to I50.9. In the Tabular List, confirm the diagnosis and follow additional guidelines. Because the documentation does not specify the type of heart failure, this code matches the documentation.

Heart failure occurs when the heart muscle is weak and cannot pump enough blood to meet the body's need for oxygen.

The chapter specific guidelines have an excludes2 for (R00–R94).

Cardiogenic shock R57.0 is a symptom of the more specific diagnosis of heart failure. Do not report signs and symptoms when a more specific diagnosis is documented.