

## S-ICD Procedure Coding

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A subcutaneous implantable defibrillator (S-ICD) consists of a subcutaneous or submuscular pulse generator and a single subcutaneous lead.

S-ICD insertion (33270) is payable under the Medicare Physician Fee Schedule and the Outpatient Prospective Payment System. Under OPSS it is assigned to a comprehensive APC.

### Insertion of S-ICD System

Insertion of an S-ICD system is reported with code **33270** (*Insertion or replacement of permanent subcutaneous implantable defibrillator system, with subcutaneous electrode, including defibrillation threshold evaluation, induction of arrhythmia, evaluation of sensing for arrhythmia termination, and programming or reprogramming of sensing or therapeutic parameters, when performed*).

This code includes the following services, which should not be reported separately:

- Insertion of the subcutaneous lead
- Pocket creation
- Insertion of the pulse generator
- Defibrillation threshold testing (do not report separately with 93640-93641)
- Programming

A note in the CPT<sup>®</sup> manual indicates that 33270 should not be reported together with subcutaneous lead insertion (33271), programming (93260), interrogation (93261), or electrophysiological evaluation (93644).

**EXAMPLE:** A subcutaneous implantable defibrillator system is inserted, including pulse generator and subcutaneous lead, followed by defibrillation threshold testing.

**CODES:** 33270

### Generator Replacement

When the pulse generator is replaced and the new generator is attached to the existing subcutaneous lead, the procedure is reported with code **33262** (*Removal of implantable defibrillator pulse generator with replacement of implantable defibrillator pulse generator; single lead system*). Note that this code is also used for replacement of a single-chamber pulse generator for a transvenous ICD. It includes removal of the old generator, insertion of the new generator, and connection to the existing lead.

A note in the CPT<sup>®</sup> manual indicates that 33262 should not be reported together with subcutaneous lead insertion (33271) or S-ICD programming/interrogation (93260, 93261).

## Example #14 Answer

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INDICATION: Syncope, suspected supraventricular tachycardia

PROCEDURE: Comprehensive EP study, isoproterenol infusion, carotid sinus massage

Three 6F right femoral venous sheaths were placed in the right groin using a modified Seldinger technique. Standard quadripolar diagnostic electrophysiology catheters were positioned into the high right atrium and right ventricular apex. A dynamic tip XT octapolar catheter was positioned into the His position. Programmed atrial and ventricular stimulation were performed in the presence and absence of isoproterenol, and carotid sinus massage was performed. No inducible arrhythmia was discovered. Catheters were removed, sheaths were withdrawn, and manual pressure was held until hemostasis was achieved.

FINDINGS: The baseline resting sinus cycle length is 1076 milliseconds, the QRS duration is 87 milliseconds, PR interval is 160 milliseconds, and QT interval is 410 milliseconds. . . .

During isoproterenol infusion at 3 mcg/min., the AV block cycle length was 270 milliseconds. The AV node effective refractory period is 200 milliseconds. There is no evidence of VA conduction in the presence of isoproterenol with a VA block cycle length of 290 milliseconds. The VA conduction is decremental, suggesting conduction of the AV node. Atrial pacing with up to double extra stimulus was performed and no inducible AV node re-entrant tachycardia was seen nor evidence of dual AV nodal physiology. We performed decremental atrial pacing down to 200 milliseconds and could not induce atrial arrhythmia. We did repeated ventricular pacing with up to five extra stimulus at multiple different drive cycle lengths as well as long-short pacing sequences and decremental ventricular pacing down to 260 milliseconds, but could not induce ventricular arrhythmia. The carotid sinus massage was negative for evidence of asystole.

CONCLUSION: Symptoms suggestive of supraventricular tachycardia in the presence of an entirely negative electrophysiology study. We will recommend event recorder monitoring for further correlation between symptoms and rhythm.

The patient underwent comprehensive EP study with attempted induction of arrhythmia (93620) and IV drug infusion followed by programmed stimulation and pacing (93623). There is no additional code for the carotid massage, which was performed to check for carotid sinus hypersensitivity.

# Pharmacologic Agent Administration

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A **challenge test**, also referred to as a provocation test, is the evaluation of a patient's response to a drug or other substance. The test can help to confirm the patient's diagnosis or to guide his treatment. Cardiologists often perform challenge tests during cardiac catheterization, particularly when the patient is suspected to have pulmonary hypertension, which is an elevation of blood pressure in the right heart and pulmonary arteries. This condition occurs when chronic lung disease or other disorders cause the small blood vessels in the lungs to become narrowed, making it harder for the right heart to pump blood into the lungs. A vasodilator challenge test can help the cardiologist determine the best way to treat a patient with pulmonary hypertension.

During an acute vasodilator challenge test, the physician performs a right heart catheterization to measure the patient's pulmonary artery pressures. The physician then administers strong but short-acting drugs that cause the arteries to expand. If the patient's pulmonary artery pressure drops significantly, then the patient will most likely respond to treatment with calcium channel blockers.

Agents commonly used for challenge tests during cardiac catheterization include:

- Nitric oxide (NO)
- Nitroprusside
- Dobutamine
- Milrinone
- Epoprostenol (EPO or Flolan<sup>®</sup>)
- Adenosine

Nitric oxide is an inhaled gas that is given by mask, while the other agents are given by intravenous infusion.

## Coding Guidelines

Challenge tests during cardiac catheterization are reported with add-on code **+93463** [*Pharmacologic agent administration (eg, inhaled nitric oxide, intravenous infusion of nitroprusside, dobutamine, milrinone, or other agent), including assessing hemodynamic measurements before, during, after, and repeat pharmacologic agent administration, when performed (List separately in addition to code for primary procedure)*].

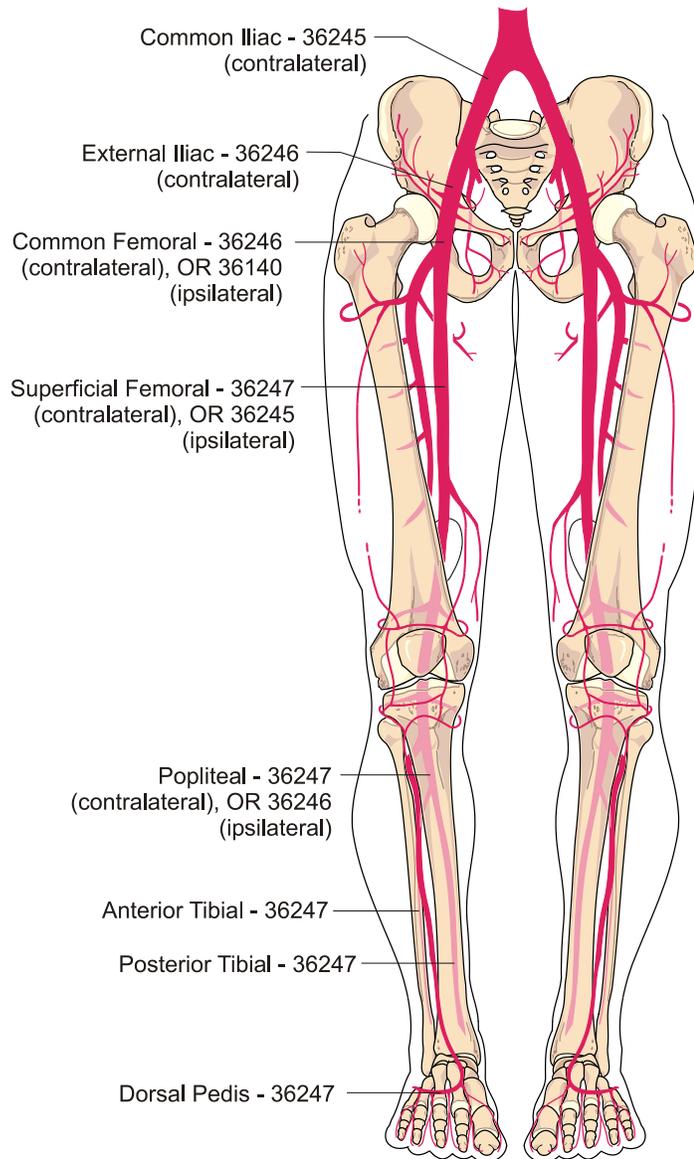
Code 93463 does not require modifier 26 for professional component billing. For hospital billing under OPPS, 93463 is a packaged service (status N).

Code 93463 can be reported together with the following procedures:

- Non-CHD heart catheterization, except for 93454-93455 (coronary artery/bypass graft catheterization without heart catheterization)
- CHD heart catheterization (93530-93533)
- Transcatheter closure of septal defect (93580-93581)
- Pulmonary valve implantation (33477)

## Arterial Anatomy

As the aorta descends into the lower body, there is a **bifurcation** where it splits in two, becoming the left and right common iliacs and thus two vascular families. Each common iliac is then further divided into the internal iliacs, which supply the pelvic area, and the external iliacs, which supply the legs.



At the inguinal ligament, the **external iliac** artery becomes the **common femoral** artery. Notice that the external iliac and the common femoral are both second order vessels since the common femoral is essentially a continuation of the external iliac.