



**PHYSICIAN**  
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## ACCESS SITES

- Typically, a percutaneous femoral approach is used. Sometimes, iliac interventions are done from an ipsilateral approach, sometimes from a contralateral approach, and sometimes from a bilateral approach.

## DIAGNOSTIC DEVICES USED

### SHEATH SIZES

Typically, we do not use a sheath used for diagnostic studies.

### FLUSH DIAGNOSTIC CATHETERS

4-F pigtail or flush catheter.

### SELECTIVE DIAGNOSTIC CATHETERS

4-F Sos Omni or 4-F Cobra. Depending on the intervention, I may choose a catheter with a .038-inch inner diameter to allow placement of a microcatheter through the guiding diagnostic catheter (eg, certain embolizations).

### DIAGNOSTIC GUIDEWIRES

I often use .035-inch systems for iliacs. A starter wire with a 15-mm J is my standard diagnostic wire. I also use

a hydrophilic angled wire to cross some lesions. If the lesion is very tight and very calcified, it may be difficult to get the catheter across the lesion. A super-stiff Amplatz or a stiff hydrophilic wire may give enough added support to allow crossing.

### DIAGNOSTIC NOTES

Cross the lesion using fluoroscopic guidance. If the lesion is crossed blindly, there is a chance that the wire will be subintimal, which may be the end of the procedure. Take enough images so that the lesion is visible to the best advantage for crossing and for assessing success of the intervention.

## INTERVENTIONAL DEVICES USED

### INTERVENTIONAL GUIDEWIRES

I use a marker wire for measurements (also good for support and exchanges with 180 cm length), a hydrophilic angled wire to cross some lesions, and occasionally other torqueable wires for crossing. A .035-inch, 180-cm-long wire can be used for most self-expanding stent systems. For internal iliac PTA/stents, I use a .014-inch to .018-inch wire. To cross total occlusions, a hydrophilic angled wire is my first choice, typically with a Headhunter or Cobra-curved catheter. If that does not work, a Rosen wire with the curved end just out the catheter's tip may be used to

cross the lesion. If that does not work, sometimes a contralateral approach may be used. The catheter is used to engage the origin of the common iliac artery, and typically a hydrophilic angled wire is used to negotiate through the area of occlusion. Sometimes, a long-tapered tip on the hydrophilic wire may be helpful, and using a torque-device is very helpful when crossing either stenoses or occlusions. Once the wire is through the occlusion, it can be either passed out through the ipsilateral sheath or caught with a snare and pulled out through the ipsilateral sheath. A catheter is then passed over the wire in a retrograde direc-

# ILIAC INTERVENTIONS

tion from the ipsilateral sheath into the aorta, the contralateral wire is removed, and a working wire is placed from the ipsilateral groin into the aorta.

## INTERVENTIONAL SHEATHS

6-F sheath. I use a Balkan sheath if the lesion is being treated from a contralateral approach.

## PTA BALLOONS

5-F balloons.

## STENTS

I prefer to use self-expanding stents that are on 6-F delivery systems, or to use balloon-expandable stents that can be placed through a 6-F sheath.

## OTHER DEVICES

- Covered stents may be used to treat isolated iliac aneurysms. These require various sized sheaths, depending upon the size of the stent graft delivery system.
- Closure devices may be useful.

## INTERVENTIONAL NOTES

Actual measurement of the vessel is better than “eyeballing” or guessing the size of the vessel. Particularly for a lesion at the origin of common iliac artery, I prefer to try to deploy the stent entirely in the iliac and not extending into the aorta, but fully covering the lesion if at all possible. Stents extending into the aorta may be prone to development of thrombus or intimal hyperplasia on the stent. I also prefer to avoid crossing the internal iliac origin with the balloon or stent, if at all possible. There is a small risk of occluding the internal iliac if plaque extends across its origin. If the lesion extends across the origin of the hypogastric artery, I prefer to use a self-expanding stent but undersize the balloon by 1 mm to try to decrease the chance of dissection complicating the procedure and occluding the hypogastric artery.

## IMAGING NOTES

If the lesion is heavily calcified, it may not open as well with ballooning or stenting. Also, calcium in a lesion may result in rupture of the balloon by sharp edges on the plaque. This is especially important to be aware of if you are using a balloon-expandable stent. If the balloon is ruptured before the stent is fully opened, the stent may be very difficult to implant and very difficult to remove, and may tend to float freely in the vessel. In these lesions,

self-expanding stents may have some advantage. Particularly in calcified vessels, it is helpful to deliver the stent or balloon through a sheath to the lesion, then withdraw the sheath to perform the intervention. This may decrease the risk of damaging the device within the lesion prior to use.

## CONTRAST RECOMMENDATIONS

Iodinated contrast is best, but not always possible. CO<sub>2</sub> can also be used for patients with renal insufficiency. Gadolinium may be used in some instances, but often does not provide good images in nonselective positions unless larger amounts are used.

## PHARMACEUTICALS

I almost never use heparin for iliac stents. However, I will use heparin if I think that flow will be significantly slowed by the sheath or catheter (either at the lesion or at the puncture site) or if I think that the procedure will take more than 2 to 3 minutes. I always use heparin for an internal iliac PTA/stent because the vessel tends to be smaller, more prone to spasm, and takes longer to treat. For iliac PTAs (vs stenting), the balloon is often inflated longer, so flow is slowed longer, and heparin is often necessary for these procedures. When an interventionist is early in the learning curve for iliac PTA/stent, the procedure is likely to take longer, so heparin is usually advantageous to prevent intraprocedural thrombosis. Intra-arterial nitroglycerine may be needed if spasm is encountered.

## TESTS USED

I rarely use ACT tests for straightforward iliac PTAs and stents. ■