

Right heart catheterization from the femoral route

TED E. FELDMAN, MD, AND GERALD YONG, MBBS (HONS)

A common problem during evaluation of patients with valvular heart disease is passage of a pulmonary artery catheter via the femoral route. The flimsiness of the catheter makes negotiating the turn from the right atrium to the right ventricle relatively easy, but then reversing the direction of travel superiorly to enter the pulmonary artery can be difficult and time consuming. An alternative method to achieve pulmonary artery catheterization is to place the tip of the balloon flotation catheter in the midright atrium facing the lateral wall, and then advance and rotate counterclockwise to form a reverse loop (Figure 1A). Gentle advancement of the catheter will eventually get the balloon to float into the right ventricle (Figure 1B). At that point, a .025-inch extra stiff guidewire can be advanced through the catheter into the pulmonary artery (Figure 1C).

In some cases, the balloon will continue to engage the coronary sinus or get stuck in the tricuspid orifice. It is sometimes useful to add an additional syringe of inflation volume to the balloon (double inflation). This may make the balloon catheter traverse the tricuspid orifice more easily, or sometimes float out of the right ventricular outflow without getting caught on the way. The catheter can then be advanced as the wire is held in place or gently withdrawn, resulting in the placement of the catheter in the pulmonary artery (Figure 1D). The use of the .025-inch guidewire is routine in our practice for this purpose, and the counterclockwise method is the usual initial approach in patients with valvular heart disease. In the setting of mitral or

aortic valve disease, the right atrium is often dilated, and femoral passage of a balloon flotation catheter can be very frustrating. This method as a first-choice approach has simplified the process greatly. ■

Ted E. Feldman, MD, is from the Cardiology Division, Evanston Hospital, Evanston, Illinois. Dr. Feldman may be reached at (847) 570-2250; tfeldman@enh.org.

Gerald Yong, MBBS (Hons), is from the Cardiology Division, Evanston Hospital, Evanston, Illinois. Dr. Yong may be reached at (847) 570-2250; gyong@enh.org.

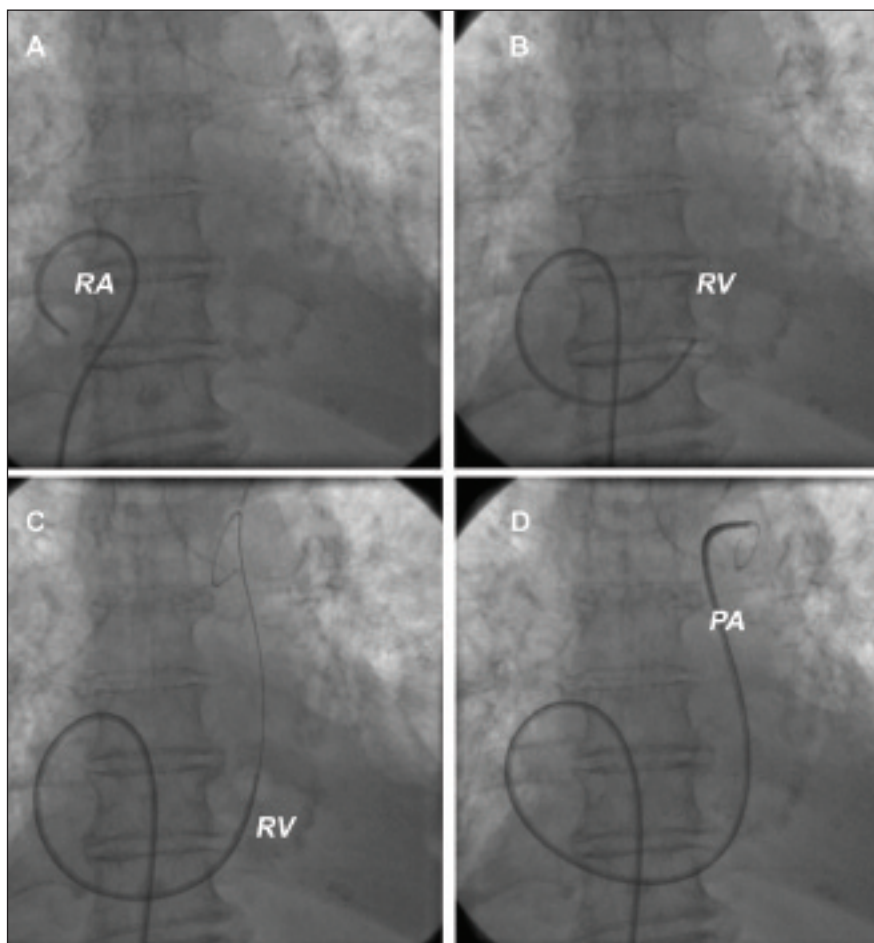


Figure 1. The tip of the balloon flotation catheter placed in the midright atrium facing the lateral wall and advanced and rotated counterclockwise to form a reverse loop (A). Advancement of the catheter will eventually get the balloon to float into the right ventricle (B). A .025-inch extra stiff guidewire can then be advanced through the catheter into the pulmonary artery (C). Final placement of the catheter in the pulmonary artery (D).