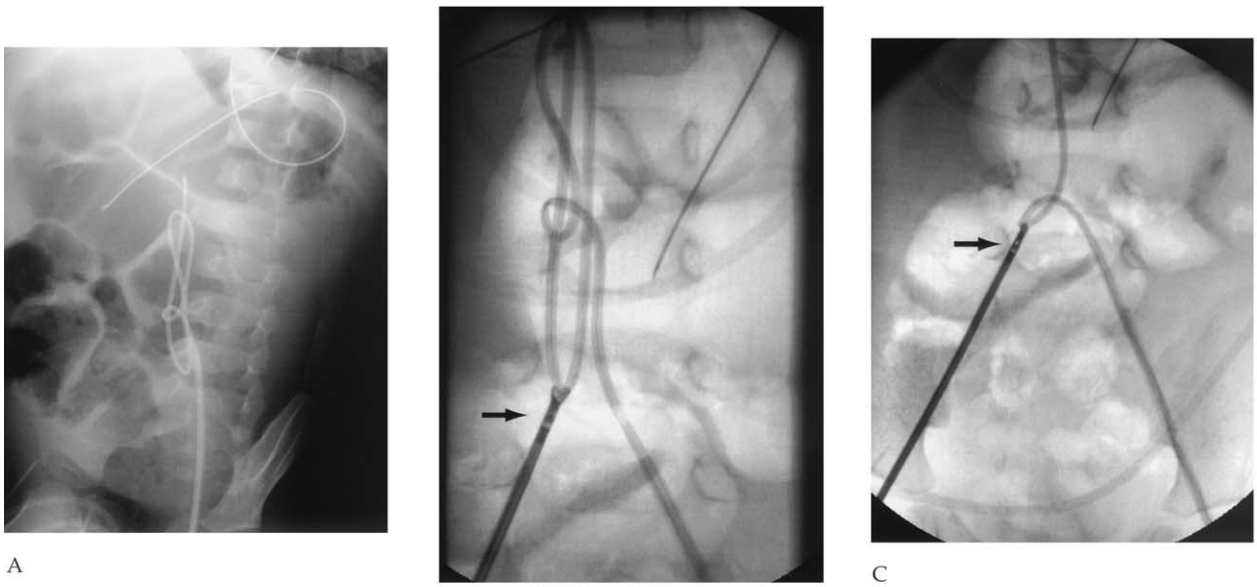
# Percutaneous Unknotting and Retrieval of Swan-Ganz Catheter

Eric M. Walser, MD, Clare Savage, MD, Orhan Ozkan, MD, and Joseph B. Zwischenberger, MD

Departments of Radiology and Surgery, The University of Texas Medical Branch, Galveston, Texas





A B C

An 18-month-old boy had a Swan-Ganz catheter inserted through the right femoral vein. A chest roentgenogram after placement showed that the catheter was advanced too far and was curled with multiple loops in the right atrium. Under fluoroscopy, the catheter was pulled back into the inferior vena cava (IVC) where the multiple loops formed a knot that prevented passage beyond the IVC bifurcation (Fig A). A forceps catheter (BIOPAL 7 formable biopsy forceps; Cordis Corporation, Miami, FL) (*arrows*) was inserted through the contralateral femoral vein to unknot (Fig B) and remove (Fig C) the Swan-Ganz catheter. The procedure was uncomplicated, and the patient demonstrated no sequelae on follow-up.

The array of tools available to the interventional radiologist including forceps, hook or straight catheter, loop snare, tip-deflecting wire, flexible-tip guidewire, and retrieval basket to facilitate in vivo reduction of catheter knots, often precluding the need for venotomy or surgical removal [1, 2]. We recommend slow withdrawal under fluoroscopy of any Swan-Ganz catheter that has multiple loops or appears knotted. If the catheter fails to unfurl or meets resistance, an interventional radiologist should be consulted while the loops are still accessible to instrumentation.

## References

1. Cho SR, Tisnado J, Beachley MC, Vines FS, Alford WL. Percutaneous unknotting of intravascular catheters and retrieval of catheter fragments. AJR 1983;141:397–402.
2. Bhatti WA, Sinha S, Rowlands P. Percutaneous untying of a knot in a retained Swan-Ganz catheter. Cardiovasc Intervent Radiol 2000;23:224–5.

Address reprint requests to Dr Zwischenberger, Division of Cardiothoracic Surgery, The University of Texas Medical Branch, 301 University Blvd, Galveston, TX 77555-0528; e-mail: jzwische@utmb.edu.