DEPARTMENT EDITOR ■ ROBERT H. BOWER, MD
University of Cincinnati College of Medicine
Cincinnati VA Medical Center
Cincinnati, OH

PEARLS

SECURING LONG-TERM CATHETERS

THE PROBLEM | Inserting a cuffed central venous catheter for a long-term total parenteral nutrition or another purpose is a common procedure. A routine practice is to use a single suture immediately adjacent the exit site to secure the catheter to the skin following insertion. However, inadvertent dislodgement of the line remains a bothersome problem, particularly during the early postoperative period before a fibrous union forms between the subcutaneous tissue and the catheter cuff.

THE SOLUTION | Coiling the proximal portion of the external catheter tubing into a 4-cm-radius loop around the exit site and anchoring the loop with 2 additional sutures *(Figure)* can greatly diminish the tugging force exerted on the subcutaneous portion of the catheter.

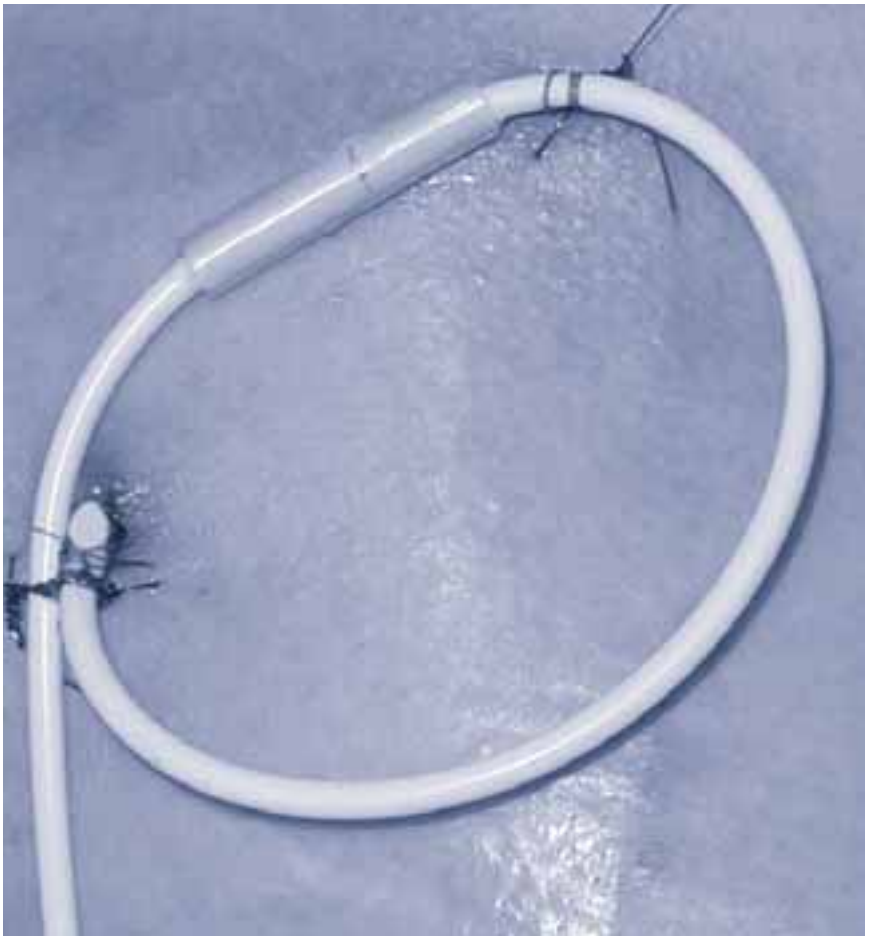
Take the second suture at the skin exit site (immediately adjacent to the first stitch) onto a distal portion of the looped catheter. Place the third suture opposite the first 2 stitches (at approximately the 2 o'clock position) to hold the loop down, adding extra length as a safety margin in case extra "slack" is needed in the tubing.

Make sure that the knots are tight enough to prevent catheter motion, but do not tighten them excessively; the catheter may occlude. Apply a clear adhesive dressing on top of the entire catheter loop at the end of the procedure.

This method can also be particularly helpful to prevent any motion on a catheter immediately following its repair.

— Anastasios K. Konstantakos, MD
Beth Israel Deaconess Medical Center
Harvard Medical School
Boston, MA

FIGURE **A Loop and 3 Sutures**



Coil the external catheter and anchor the loop with 2 additional sutures to prevent the catheter from dislodging.

SITE FOR PARATHYROID AUTOTRANSPLANTATION

THE PROBLEM | About 15% of patients with primary hyperparathyroidism have multi-gland disease. At our institution, the standard surgical approach consists of excising three and one-half glands,

leaving a tissue remnant at its original site. The success rate for first-time operations for benign primary hyperparathyroidism is greater than 95%. However, every year 8000–9000 patients in the United States end up with persistent or recurrent hyperparathyroidism.[1] Despite an "adequate operation", up to 27% of patients with secondary multi-gland disease have developed recurrent hyperparathyroidism at a median follow-up of 15 months.[2]

THE SOLUTION | In patients with multi-gland mediated recurrent hyperparathyroidism and those with calciphylaxis, we recommend excision of all residual parathyroid tissue. We suggest immediate autotransplantation of a total of 50–100 mg of non-malignant parathyroid tissue divided into 9–10 pockets within the brachioradialis muscle of the nondominant forearm. Making the skin incision longitudinally avoids future suspicion of a "self-inflicted" wound. For future reference, tag each site with a 6–0 monofilament nonabsorbable suture.

The autotransplantation of parathyroids in the forearm has advantages over other locations. When obtaining serial parathyroid hormone (PTH) levels, inflating a pressure cuff over that area can exclude this tissue from the circulation and help localize the residual hyperfunctional tissue. If PTH levels drop, you can presume the hyperfunctional tissue is in this location and you can safely remove it under local anesthesia, avoiding a second cervical exploration.

— Fernando Cordera, MD;
Geoffrey B Thompson, MD
Mayo Clinic and Foundation
Rochester, MN

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2. McHenry CR. What's new in general surgery: endocrine surgery. *J Am Coll Surg*. 2002;195:364-371.

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