

Aspiration of Periprosthetic Seromas Using the Blunt SeromaCath

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Summary: Postoperative swelling following prosthetic implant breast augmentation and reconstruction is not uncommon. Prompt diagnosis and targeted treatment are critical. Current treatment recommendations achieve a diagnosis using specialized equipment with needle-guided imaging and/or surgical modalities. These techniques are expensive and delay diagnosis and treatment. The authors use an in-office, nonimaging technique to drain periprosthetic fluid after unilateral breast swelling after breast reconstruction or augmentation. Their technique is effective in diagnosing and treating seroma fluid with minimal risk of implant damage or perforation. (*Plast. Reconstr. Surg.* 137: 473, 2016.)

Postoperative swelling following prosthetic implant breast augmentation and reconstruction is not an uncommon occurrence. The most common acute causes of swelling include hematoma, seroma, and infection.¹⁻⁶ Considering that the accumulation of periprosthetic fluid can lead to further complications such as infection, implant extrusion, tissue necrosis, poor wound healing, inhibition of tissue ingrowth into scaffolds, and distortion of the size and shape of the final aesthetic outcome, prompt diagnosis and targeted treatment are critical. Ideally, fluid should be obtained from the periprosthetic space and cultured, before the start of antibiotic treatment. Current treatment recommendations for postoperative breast swelling achieve a diagnosis through the use of specialized equipment with needle-guided imaging and/or surgical modalities. These techniques not only bear a hefty financial burden for the patient but also cause a delay in diagnosis and appropriate treatment, which can lead to detrimental outcomes.⁷⁻¹² We present an in-office, non-imaging-based technique using the blunt SeromaCath (Greer Medical, Inc., Santa Barbara, Calif.) to drain periprosthetic fluid accumulation in nine patients with unilateral breast swelling after breast reconstruction or augmentation. Our proposed technique is effective in both

diagnosing and treating seroma fluid, with minimal risk of implant damage or perforation.

Local anesthetic using 1% lidocaine is injected into the subcutaneous tissue of the left breast. A catheter with a stylet needle/plug (Fig. 1 and Fig. 2, *above, left*) is inserted through the skin and subcutaneous tissue at an oblique angle. Once positioned, the stylet needle/plug is removed, leaving the catheter in the subcutaneous tissue. The blunt SeromaCath is advanced through the catheter (Fig. 2, *above, right*).

Capsular access is achieved by applying a cutting edge electrical current from a standard surgical cautery unit to the metal hub of the blunt SeromaCath (Fig. 2, *below*). The addition of electrical cautery allows the blunt SeromaCath to easily advance through the subcutaneous tissue, muscle, and thick capsule, with minimal risk of puncturing the implant because silicone is an insulator that does not conduct electricity. Once in the periprosthetic space, seroma fluid (Fig. 3, *above, left*) is aspirated into the attached syringe (Fig. 3, *above, right*) and sent for culture before the start of antibiotic treatment. The pocket around the implant is irrigated multiple times with a bacitracin/vancomycin antibiotic solution until the fluid aspirated is clear (Fig. 3, *below, left*). The catheter is then taped in place

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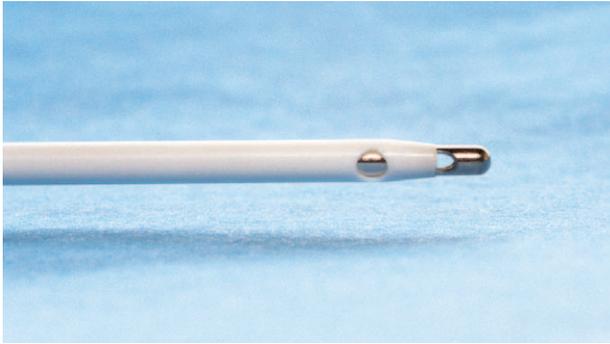


Fig. 1. Blunt seroma catheter.

for extra support, and connected to the male Luer-lock end of the drainage tube. The bulb suction reservoir is attached to the open end of tube at the inlet port (Fig. 3, *below, right*) and the drainage plug is inserted into the pour spout while the reservoir is compressed before its

release. A transdermal, antiseptic chlorhexidine patch (Biopatch; Ethicon, Inc., Somerville, N.J.) is then placed around the tubing at the insertion site (Fig. 3, *below, right*).

Patients are placed on prophylactic antibiotics and the aspirated fluid is sent for culture and acid-fast and Gram staining. Diagnostic assessment should also include cytologic evaluation of seroma fluid for anaplastic large-cell lymphoma through cellblock immunohistochemistry testing for CD30 and anaplastic lymphoma kinase-1.¹³ Antibiotics are discontinued following negative bacterial growth. If positive for infection, targeted antibiotic therapy is instituted based on the reported sensitivity. Use of the blunt SeromaCath is proposed as a practical system for efficient and accurate management of pathologic periprosthetic fluid accumulation after breast reconstruction or augmentation before antibiotic initiation.

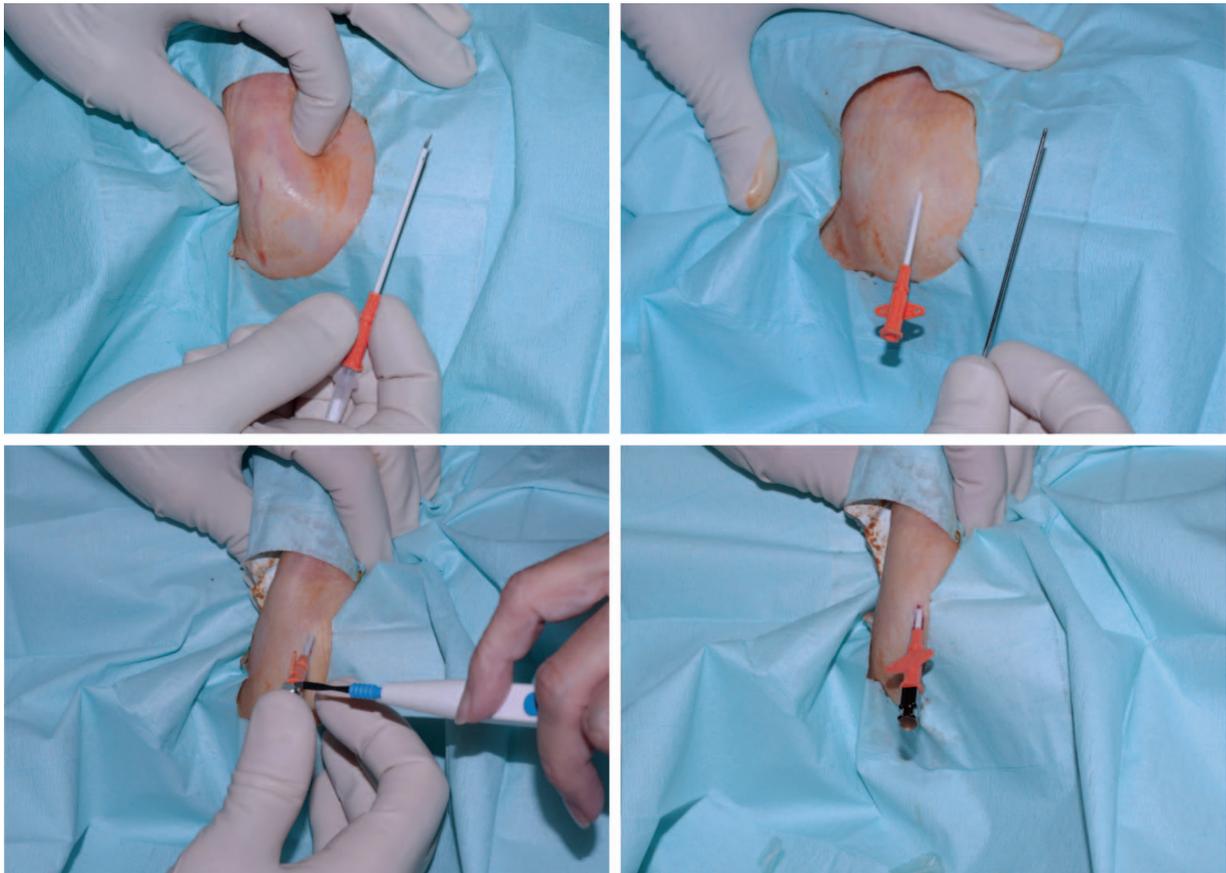


Fig. 2. (*Above, Left*) A small incision is made on the skin following infiltration of local anesthetic. The sharp catheter is ready to be inserted. (*Above, right*) The sharp needle is removed after partial advancement and the blunt needle is ready to be replaced. (*Below, left*) The blunt needle is inserted and the catheter advanced to the capsule. Cutting cautery is applied to the blunt needle while pressure is applied to the cannula. (*Below, right*) Once the capsule is entered, fluid will flow from the cannula.

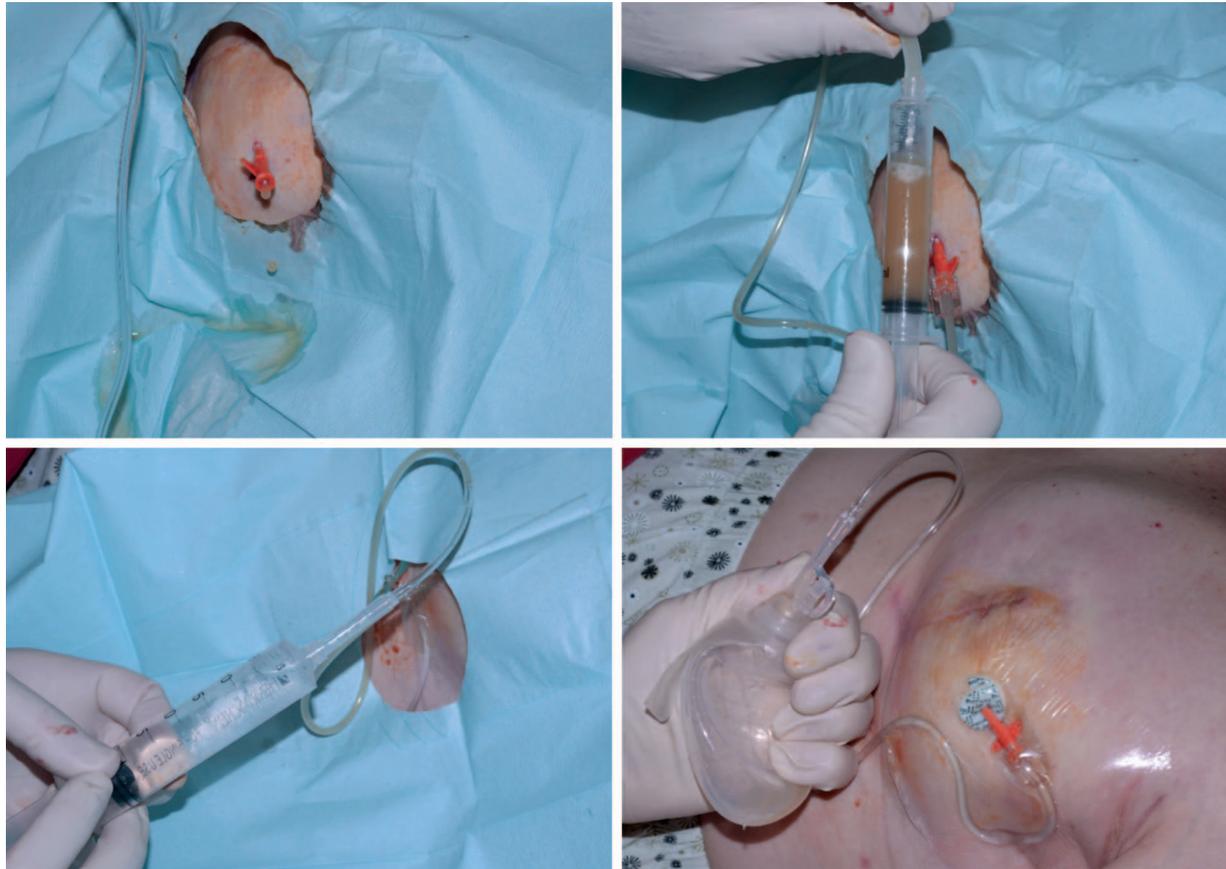


Fig. 3. (Above, left) The blunt needle is removed, leaving the catheter in position. (Above, right) The tubing is connected to the catheter and fluid is aspirated with a syringe. The fluid is submitted for culture. (Below, left) The pocket is irrigated with antibiotic solution. (Below, right) A suction bulb is attached to the tubing and the catheter is fixated with a Tegaderm (3M, St. Paul, Minn.) dressing.

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