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Beware Catheter Breakdown During Alcohol Sclerosis of Lymphoceles

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To the Editors

Interventional radiologists should beware that certain catheters may be predisposed to breakdown during alcohol infusion, like that required for alcohol sclerosis for lymphoceles. It is uncertain whether or not non-alcohol sclerosants are less caustic to catheter polymers. Sclerosis of post-surgical lymphoceles has been described for decades, with a variety of sclerosing agents including alcohol, povidine-iodine, tetracycline, bleomycin, fibrin, and talc. [1–5] Recently our colleagues at Memorial Sloan-Kettering Cancer Center described their experience with Povidine-Iodine as the sclerosing agent, which may be theoretically less caustic than alcohol. [5] Much of the literature does not report specific catheters used for sclerosis, however catheter selection can be critical when using alcohol as a sclerosant, which can result in degradation of certain catheters. A recent lymphocele sclerosis required catheter exchange over a wire after a hole developed following repeated alcohol infusions (Fig 1). One of the early reports of alcohol sclerosis used mainly Cook pigtail catheters (Cook, Inc, Bloomington, IN) [1] New Cook ultrathane and Flexima pigtail catheters (Boston Scientific, Natick, MA) were submerged for two days side-by-side in dehydrated 98% ethyl alcohol (American Regent Inc, Shirley, NY) and then grossly examined for alterations in stiffness or integrity of shape or holes. The Cook catheter was not perceptibly altered to sight or feel, but the Flexima catheter was markedly softer, lost its perfect pigtail shape, and developed acute angles or early kinks at the site of the side-holes (Fig 2). Catheter selection should be considered when planning lymphocele drainage, which might not respond to simple catheter drainage. The selection of sclerosant could also influence catheter selection, as non-alcohol sclerosants may be less caustic to catheter polymers.

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Fig. 1.
Percutaneous pigtail catheter at skin exit site one week post initial placement for post-surgical lymphocele with erosion/hole at area of stress (arrow).

Fig. 2.

In vitro test of 2 different pigtail catheters placed in absolute alcohol $\times$ 24 hours to assess for integrity of polymer and breakdown in palpable stiffness of catheter. Blue catheter has developed subtle acute angles at site of side holes with less radial and tangential stiffness than baseline, but white catheter has no perceptible change in palpable stiffness.