

Finally, because we disagree with Gunter's arguments as detailed above, we disagree with his statement that our "... results only support a conclusion that the distribution of academic achievement scores in otherwise neurologically normal children with a single exposure to anesthesia in the first year of life for minor, peripheral surgery is completely consistent with that seen in the population at large." However, for numerous reasons detailed in the Discussion section of our article, we do not believe that our results established that exposure to anesthesia during infancy *was causally related* to the disproportionate number of children who had very low test scores. We made clear in the article that causation could not be determined from our study and that the findings should be considered tentative until further verification.

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Radial Artery Catheterization

To the Editor:

I read with interest the report by Truong *et al.*¹ in which they describe the occurrence of a radial artery pseudoaneurysm after radial artery catheterization for monitoring. The authors state that the catheterization was accomplished on the first attempt. Because there was no apparent trauma and the wound culture grew out *Staphylococcus aureus*, this complication was apparently due to infection.

In their report, the authors do not describe the details of the placement, in particular the sterile prep and drape, and dressing used. That would have been important information to include. It is currently recommended that a sterile dressing with chlorhexidine be used. In our institution, we routinely use the Tegaderm CHG (3M Healthcare, St. Paul, MN). In addition to adhering tightly to the skin, it has a chlorhexidine-impregnated gel which contacts the insertion site. To the best of my knowledge, we have not had any infections related to arterial catheterizations with the use of such a dressing. Infection and subsequent radial artery pseudoaneurysm are rare and would suggest a possible

departure from the standard sterile technique. Fortunately, the case described is a rare complication of radial artery catheterization.

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Reference

1. Truong AT, Thakar DR: Radial artery pseudoaneurysm: A rare complication with serious risk to life and limb. *ANESTHESIOLOGY* 2013; 118:188

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In Reply:

We read with interest Dr. Neustein's comments. Our article¹ was published as "Images in Anesthesiology" and not as a Case Report. Because of the word limitation of this educational forum, many relevant details of the case were not included.

Under sterile conditions, skin preparation was done using Povidone-Iodine Prep Pad (PDI, Orangeburg, NY) and 70% isopropyl alcohol prep. Our institution also provides Prevan-tics Swab (PDI) containing 3.15% chlorhexidine gluconate and 70% isopropyl alcohol for skin preparation. Radial artery cannulation was performed with a 20-gauge 1¾-inch catheter (B. Braun Medical, Bethlehem, PA), and a Tegaderm Film dressing (3M Health Care, St. Paul, MN) was applied. After pneumonectomy for lung cancer, the patient was transferred to the intensive care unit for monitoring multiple comorbidities such as hypertension, coronary artery disease, and chronic obstructive pulmonary disease.

The Center for Disease Control 2011 Guidelines for prevention of catheter-related infections recommend preparing skin with a more than 0.5% chlorhexidine preparation with alcohol before peripheral arterial catheter insertion and during dressing changes. If there is a contraindication to chlorhexidine, tincture of iodine, an iodophor, or 70% alcohol can be used as alternatives. With regard to dressing, the Center for Disease Control recommends using a chlorhexidine-impregnated sponge dressing for temporary short-term catheters in cases of persistent central line-associated bloodstream infections. No recommendations are made for other types of chlorhexidine dressings due to insufficient evidence or lack of consensus regarding efficacy.

Catheter-related infections result from the convergence of many factors. These include patient-related factors, catheter-related factors, and institutional factors. To assign causation of the pseudoaneurysm to a departure from sterility alone overlooks the fact that this patient was immunocompromised with underlying comorbidities. Furthermore, infections related to arterial catheters are influenced not only by insertion techniques, but also by pressure transducer assemblies and number of entries into the monitoring system.