Letters to the Editor

Oxybuprocaine Induces a False Positive

Dear Editor:
Recently, Hoshino et al reported that a false-positive reaction in the immunochromatographic SAS Adeno Test was induced by oxybuprocaine.[1]

We have previously evaluated the clinical usefulness of the SAS Adeno Test and reported that its specificity was 97.1% (34/35).[2] In this study, we used oxybuprocaine for local anesthesia in all cases to obtain conjunctival swabs.[2] In the sole case that showed a false-positive result, the colored line was extremely weak and appeared 30 minutes after instillation of a diluted sample. Thus, although the case was clinically diagnosed allergic conjunctivitis, the possibility of mild adenoviral conjunctivitis more than 10 days after the onset cannot be excluded, considering the limit of sensitivity of the polymerase chain reaction (PCR)–restriction fragment polymorphism method for adenovirus.[3] In our previous study, no normal controls and no patients with a confirmed laboratory diagnosis of conjunctivitis due to herpes simplex type 1, varicella–zoster virus, or *Chlamydia trachomatis* had a positive result in the SAS Adeno Test.[2] Therefore, we consider that the specificity of the SAS Adeno Test is effectively 100% when used in a clinical situation.[2]

To reproduce and confirm the results reported by Hoshino et al, we carried out experiments in the same conditions as described in their article.[1] We used 15 unused bottles of the 3 study groups (oxybuprocaine, 2% lidocaine, and physiological saline) as materials. The total sample number was 45. We obtained no positive result in any study group, including oxybuprocaine, using the immunochromatographic SAS Adeno Test. Although we rechecked for the appearance of an extremely weak line in the SAS Adeno Test, as described in the previous article,[1] 10 hours after dropping the materials, no positive result was observed. In view of these results, although there is a possibility that oxybuprocaine may induce a false-positive reaction in the immunochromatographic SAS Adeno Test, we have several concerns regarding their results. We suspect that there is a possibility that the false-positive reaction in the SAS Adeno Test with oxybuprocaine was induced by some specific situation or condition as follows.

First, does the sample number mentioned in their article, 15 in each group, indicate the number of bottles used or the number of drops from one bottle? If the authors used 15 bottles in each study group, were they unopened new bottles or used ones? From the description in the "Materials and Methods" section, it is difficult to determine whether they used different bottles or obtained 15 drops from one bottle, and whether the bottles were unopened or not. There is a possibility of contamination by adenovirus if they used one eyedrop bottle or they included used multidose eyedrop bottles for patients, especially those with adenoviral conjunctivitis. We have reported that 73% of the eyedrop bottles used by patients with adenoviral conjunctivitis were positive for adenovirus detected by PCR with the maximum detection interval of 9 weeks.[4] Thus, adenovirus can survive in solution for a long period, and multidose bottles may be an important vector for adenoviral transmission.

Second, is there a possibility that they used outdated SAS Adeno Test kits or oxybuprocaine bottles? There is also a possibility that improper storage of the SAS Adeno Test kits at high temperature or high humidity may lead to an unpredictable reaction if used with oxybuprocaine, as reported in this article.

Finally, to evaluate the specificity of the SAS Adeno Test, detection of adenovirus in the solution from which a positive reaction was obtained is essential. Unless authors show that adenovirus was not present in the oxybuprocaine bottle by PCR or another virological method, the possibility of contamination cannot be excluded, even though the possibility seems very small.

If the data indicating the possibility of a false-positive response induced by oxybuprocaine in the SAS Adeno Test are correct, their recommendation to use lidocaine instead of oxybuprocaine for local anesthesia in the SAS Adeno Test is reasonable. If so, the false-positive reaction was induced by some unwanted reaction between the kit and oxybuprocaine. If more cases indicating false-positive reactions in the SAS Adeno Test are reported, further evaluation is necessary to determine the reason for this false-positive reaction.

Eiichi Uchio, MD
Kazuaki Kadonosono, MD
Koki Aoki, MD
Shigeaki Ohno, MD
Yokohama, Japan

References

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Medication Use before Cataract Surgery

Dear Editor:
We enjoyed reading the article on the risks and benefits of anticoagulant and antiplatelet medication use before cataract surgery.[1] The authors have concluded that continued use of these drugs does not increase the risk of an ocular hemorrhagic event.

Monitoring the international normalized ratio (INR) and maintaining it in the therapeutic range of 2 to 4 is an accepted standard method to assess the effectiveness of anticoagulation therapy.[2,3] In our hospital, we have adopted the practice of checking the INR values before cataract