

Comment on Tamura et al's Allergic Reaction to Botulinum Toxin: Positive Intradermal Test

Letter to the Editor:

In their case report,¹ Tamura and colleagues describe an adverse reaction to the botulinum neurotoxin A preparation Prosigne (Lanzhou Institute of Biological Products/Cristalia, Lanzhou, China). The title of the article, however, is misleading because the authors did not provide evidence of an allergic reaction to the neurotoxin. Instead, according to their skin test results with Prosigne (containing gelatin and dextran) and Botox (Allergan, Irvine, CA), immunologic intolerance to gelatin or dextran or both but not to the neurotoxin itself or albumin carrier protein is seen (negative skin test results with Botox). Anaphylactoid reactions to dextran and gelatin are well known, the latter being associated with mast cell degranulation phenomena (pseudo-allergic reactions).

However, one may doubt that the skin test results suggest unequivocally a type I hypersensitivity reaction pattern for several reasons. First, there was a 24-hour delay in the onset of skin reaction after intradermal testing. It would have been interesting if the onset of skin reaction started after a few hours, which is typical for a late-phase type I reaction pattern. Second, histology might suggest a type IV hypersensitivity reaction with lymphocytic rather than polymorphonuclear perivascular inflammatory infiltrates. Thus, a delayed-type hypersensitivity reaction might be discussed.

In a study by Carruthers and colleagues, frequency of antibody formation after repeated botulinum

toxin injections was found to be 1% to 1.4%.² In the context of this article, however, necessity of extensive discussion of antibody formation to botulinum neurotoxin is somewhat misleading because the patient reported did not produce antibodies, or the authors did not mention laboratory results. Although antibody formation is more common when higher doses are repeatedly used (e.g., for neurologic indications), this problem has not emerged in a higher percentage in aesthetic medicine.³ Instead, focusing on hypersensitivity reactions against carrier molecules as additional risk factors of various preparations might have been valuable, in addition to the possibility of neurotoxin antibody formation leading to clinical nonresponse.

References

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