

Blood return on aspiration before immunotherapy injection

To the Editor:

Waibel¹ reported that over a 4-year period during which 36,000 allergy injections were administered and during which time the policy was to aspirate the syringe to check for blood before the administration of the injection, the nurses in his allergy service did not see a single instance in which blood was aspirated. Based on this observation, his clinic has stopped the policy of aspirating before administering injections.

We wish to report that during a 30-year period of allergy practice, the lead author personally experienced one instance of a clear-cut and dramatic return of blood into the syringe during aspiration before the administration of an allergy injection. This occurred despite a policy of always lifting the skin fold to maximize the likelihood of subcutaneous placement of the injection. The great majority of injections in our 3-allergist practice are administered by our nurses, and on one additional occasion, an office nurse also reported the aspiration of blood before an allergy injection.

Having also witnessed near-fatal reactions to immunotherapy, we believe that the effort/benefit ratio strongly favors continuing a policy of aspirating and pausing for a moment before injecting the patient with substances to which he or she is known to be allergic. The 4-year period of observation by Waibel¹ might simply have been insufficient to observe such rare occurrences.

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Aspiration before subcutaneous immunotherapy injection: Unnecessary or advisable?

To the Editor:

I read with interest the recent article by Waibel,¹ which evaluated the need for syringe aspiration to check for blood before subcutaneous immunotherapy injection. Based on a personal casuistic of more than 36,000 injections performed in 4 years without observing blood during syringe aspiration, the author concluded that "injection without aspiration is a safe practice" and reported that,

accordingly, his clinic has "ceased the policy of aspiration before injection."

Although respecting this position, I am not completely in agreement with it. The data presented by Waibel¹ certainly confirm the common knowledge that strict conformity to official recommendations,² eventually in combination with additional safety measures like the use of smaller needles,¹ can reduce to extremely low levels the risk of accidental intravascular injection, but the possibility of this undesired event cannot be absolutely ruled out. During my 7 years (first as a medical student and then as a resident) in the allergy unit of a university hospital, I remember 2 cases when intravascular injection was avoided because of syringe aspiration: in one case the operator was a young resident, and in the other the operator was an experienced allergologist. Beyond their anecdotal value, these episodes show that accidental intravascular injection during subcutaneous administration of immunotherapy is a very rare but not impossible event. The lack of literature data supporting the usefulness of syringe aspiration before injection is probably due to a publication bias: it is unlikely that an operator reports an adverse event happened when a safety recommendation, although based on expert opinion only,³ was not followed, and on the other hand, a report of a possible adverse event avoided by means of a common safety practice would have virtually no chance for publication.

The interindividual variability of the anatomic features, together with the impossibility to visualize the deep vascular network, can be the cause of accidental intravascular injection, even for an experienced operator strictly following recommended injection protocols. The risk is increased for younger, less experienced, and/or learning health care personnel.

Syringe aspiration before injection is currently the only technique that can show whether a blood vessel has been accidentally punctured. Moreover, it is easy to learn, to perform, and to interpret; it is rapid and optimally tolerated by patients; and it has no side effects and no cost. Taking into consideration these positive features and the possible severe adverse effects (up to rapid and fatal anaphylaxis) of the intravascular injection of immunotherapy, my humble opinion is that syringe aspiration should be always performed before subcutaneous injection, as recommended by the American Academy of Allergy, Asthma and Immunology.³ The above technique can be useful not only in the extremely rare cases of blood vessel puncture that occur despite strict conformity to safety protocols but also in the more frequent event of procedural errors. For this latter reason, it is particularly recommendable for less-experienced operators.

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