

ABO discrepancy #2; Answers

Case study by Jim Perkins, M.D. (© 2009)

1. What is the forward ABO type? If that is correct, what anomaly must one explain?

The forward type is AB. If that is correct, one must explain why the patient's plasma agglutinates the group A reverse typing cell.

2. What is the reverse ABO type? If that is correct, what anomaly must one explain?

The reverse type is B (A cells agglutinated by patient plasma). If that is correct, one must explain why the anti-A typing serum agglutinates the patient's RBCs.

3. Which of these two possibilities did the technologist investigate? What information in the history and type-and-screen results prompted him or her to do so? What is the cause of this ABO discrepancy?

There are no ready explanations why reagent anti-A would agglutinate A negative (group B) RBCs, so the first possibility was investigated. The antibody screen was negative, so any unexpected antibody in the patient's plasma is not directed against the usual non-ABO antigens on the group O screening cells. Therefore, the technologist looked for anti-A1 in the patient's plasma, and was able to demonstrate it by the usual criteria (3 antigen positive cells reacting, 3 antigen negative cells not reacting, patient RBCs lack the putative antigen).

4. Compare the approach taken to this problem to the one in the first problem.

In both cases an un-expected antibody was sought using a technique sensitive to the hypothesized antibody.

5. Why was the 6% albumin control run in the ABO/Rh typing?

For group O, A, or B individuals there should be at least one forward typing cell (patient cell) that can act as the negative control for the Rh typing test. However, for group AB individuals an additional negative control must be performed.