

## ABO discrepancy case #1

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

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

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

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

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

*The positive antibody screen suggests that the patient has an unexpected antibody. If the first hypothesis were correct, an unexpected antibody in the patient's plasma could explain the anomalous reaction of the patient's plasma with the group B typing cell. Investigation of the positive antibody screen identified anti-P1. Typing the group B cell for P1 antigen would demonstrate whether the anti-P1 is indeed the cause of the ABO discrepancy.*

4. Why was the technique used in the last antibody identification panel chosen? Can you state this as a general principle of antibody identification?

*The final panel includes an "immediate spin" phase of testing which is carried out at room temperature. It was selected because the serum reacted well at immediate spin in the reverse typing which yielded the anomalous reaction, and using this method the pattern of reactivity unequivocally identified anti-P1. The general principle this illustrates is that an equivocal pattern of reactivity may be clarified if a method of greater sensitivity can be chosen. Different methods may be more or less sensitive in detecting agglutination with different antisera.*

5. What is the explanation for the variation in reactivity observed in the panels?

*P1 expression on different individual's P1 positive RBCs varies.*

6. How would we select compatible blood for this patient?

*Since the antibody reacts in the pre-warmed test we would regard it as potentially hemolytic and provide cells that typed negative for P1, and which were compatible in a crossmatch using the indirect antiglobulin test.*