AIHA CASE #9

1. What is the ABO discrepancy? What is its cause? What does saline displacement do?

The forward typing was group B, but the initial reverse typing showed apparent agglutination of both the A and B reagent cells. However, rouleaux was observed microscopically and it was dispersed by saline displacement. Saline displacement dilutes serum proteins which otherwise can cause RBCs to stack with one another and give the macroscopic appearance of agglutination.

2. What is cause of the positive antibody screen? Why did technologist perform a P1 typing? Why was the second serum panel run?

The positive antibody screen was due to an anti-HLA (anti-Bg) antibody as shown by the fact that it was neutralized by HPC (human platelet concentrate). The P! antigen typing was performed to rule out anti-P1 since the reactive cell in the panel was P1 positive. Similarly, the cells in the second panel were all K positive, including one which was a double dose K positive.

3. Why might the DAT be positive? (Hint: What can cause a positive DAT with a negative eluate?) Can you relate this to any other findings?

The differential diagnosis of a positive DAT with a negative eluate includes non-specific adsorption of immunoglobulin to the RBC surface and drug related RBC antibodies. The latter are typically detected only when the serum or eluate are reacted with drug coated RBCs or when drug is added to the in vitro system. More frequently, this combination of findings is due to polyclonal hypergammaglobulinemia. Although no serum protein electrophoresis was done in this case, the normal total protein with a low albumin is consistent with hypergammaglobulinemia, and this may be causing the rouleaux phenomenon as well. It is also consistent with the patient's history of chronic infection (decubitus ulcers with osteomyelitis).