ABID CASE #6

1. What is the probable identity of this antibody? Is it alloantibody or autoantibody?

   Allo-anti-Jk^a

2. Is any further workup needed to prove it?

   No. There are 3 Jk^a positive cells reactive, 3 non-reactive cells, the patient is Jk^a negative, and the appropriate antibodies are ruled out (anti-D, -C, -E, -c, -e,-K, -k, -Fy^a, -Fy^b, -Jk^b, -Le^a, -Le^b, -S, -s, -M, -N, -P1)

3. What is the probable source of the immunizing stimulus in this case? Why is the DAT positive?

   The transfusions 6 to 7 weeks ago are the probably stimulus for a primary immunization in this case. The mixed field positive reactions on the DAT presumably reflects the fact that a few Jk^a positive RBCs are still circulating.

4. Comment on the varying strength of reactivity of the serum in the initial panel and in the various test systems used.

   Gel and LISS tests were not as sensitive for detection of this anti-Jk^a as was PEG. Another method that might be more sensitive to anti-Jk^a would be an IAT with polyspecific anti-human globulin rather than anti-IgG.

5. Does this antibody cause hemolytic transfusion reactions? Hemolytic disease of the newborn?

   Anti-Jk^a, even if weak in vitro, causes severe immediate and delayed hemolytic transfusion reactions. HDN due to anti-Jk^a is generally relatively mild.

6. How would we select compatible blood for this patient? What percentage of donors are expected to be compatible with this recipient?

   Type group O, Rh positive RBCs for Jk^a, and then crossmatch the Jk^a negative units using an indirect antiglobulin test. Twenty three per cent of Caucasian donors are expected to be compatible.

7. What is the biochemical nature of the antigen? (Review the relevant blood group system, including disease associations and racial differences in antigen prevalence.)

   Kidd antigens are carried on a multipass membrane glyco-protein that acts as the urea transporter; Jk(a-b-) individuals cannot concentrate their urine normally. The antigens are NOT protease sensitive. A-A indiv. have a decreased frequency of Jk^b relative to Caucasians, and SCD pts. frequently make anti-Jk^b. Anti-Jk^a and –Jk^b fix complement, and these antibodies may be "complement dependant" in that they are detected in indirect antiglobulin tests using poly-specific anti-human globulin, but not anti-IgG.