ICTERUS PRAECOX
ANSWERS

What test should be performed next?

Usually the cause of a positive cord blood DAT is readily evident either in the form of a maternal antibody detected in the antibody screening test or because the mother has an ABO antibody that reacts with the infant's ABO antigens (e.g. mother is group O, newborn is group A). In this case both mother and infant appear to be group O, and the mother's antibody screening test is negative. So we need to look deeper for an explanation for the cord blood DAT result and the newborn's jaundice.

The blood group antibody screening test can only detect antibodies directed against the antigens which are present on their surface. And it is not possible to find two or three RBC samples that express all of the antigens the react with potentially hemolytic antibodies. In particular, the antibody screen (or "Antibody Detection Test") is insensitive to many blood group antibodies directed against low frequency antigens. If, however, the infant's positive DAT indeed represents HDN due to a maternal antibody directed against an antigen the infant inherited from the father, a crossmatch between the mother's serum or plasma and the father's RBCs should be positive.

What is icterus praecox? What does it have to do with this case?

The term "Icterus Praecox" is literally translated as "early jaundice". Jaundice due to HDN is classically characterized as occurring on the first day of life, in contrast to physiologic jaundice of the newborn which typically is manifest on the third day of life. The term icterus praecox also reflects the historical fact that before the pathogenesis of Hemolytic Disease of the Newborn (HDN) was understood its various clinical manifestations were named as separate diseases (e.g. Anemia Neonatorum, Erythroblastosis Fetalis, Hydrops Fetalis). In this case HDN was first suspected due to the infant's positive DAT on routine cord blood testing, but jaundice was evident on the first day of life.

Anti-C^x was first described in 1954 in a case of HDN. Anti-C^x is generally assumed to be "RBC immune" but "naturally occurring" examples are reported. The antigen C^x is analogous to C^w in that the gene determining the presence of C^x usually directs formation of C as well, but it may direct formation of c instead. C^x is present in less than 1 in 1000 individuals.