Q&A column

Editor: Frederick L. Kiechle, MD, PhD

Submit your pathology-related question for reply by appropriate medical consultants. CAP TODAY will make every effort to answer all relevant questions. However, those questions that are not of general interest may not receive a reply. For your question to be considered, you must include your name and address; this information will be omitted if your question is published in CAP TODAY.

Q. A molecular laboratory received an order from an oncologist for next-generation sequencing testing. The patient's tissue sample was in the custody of a different laboratory, which has a policy requiring patient consent to release materials for reference lab testing.

The oncologist planned to obtain consent from the patient during a scheduled appointment, but the patient's condition unexpectedly worsened and the patient could no longer travel for the appointment. Neither the custodial laboratory nor the treating health system have mechanisms for electronic consent.

As a result of the lack of options for obtaining consent remotely and the custodial laboratory's stringent consent policy, potentially life-altering NGS testing was delayed for more than a month. Is this restrictive approach to releasing patient material for reference laboratory testing supported by CAP guidelines?

A.November 2023—Patient specimens, especially tissue blocks, are often extremely limited, and such irreplaceable materials are used extensively for diagnosis and ancillary testing necessary for patient management.

Several CAP checklist requirements, including ANP.12500, GEN.20377, and MOL.33250, address the appropriate storage, transfer, and handling of specimens and records so tissue and data are available for future use. Furthermore, checklist requirement GEN.40750 is intended to ensure that requisitions contain the information needed for testing and interpretation. Checklist GEN.40930 states that the laboratory perform the tests only at the written or electronic request of an authorized person, while GEN.40932 requires that there is appropriate documentation of testing requests. These checklist requirements provide guidance to those pathologists who are stewards of particular patient samples and called on to act in the patient's best interest.

Pathology laboratories are expected to have procedures for providing materials to other laboratories for testing, but there are no CAP checklist requirements specifying the parameters for such policies. In the scenario submitted by the reader, it is within the purview of the director of the custodial laboratory to require written patient consent before releasing materials to other laboratories for testing. The delay in releasing the tissue sample may have been partially attributable to the treating physician deciding to wait for a face-to-face appointment to obtain the patient's consent rather than trying to obtain consent via electronic communications, fax, or postal mail.

Given that ancillary testing, especially at reference laboratories, is increasingly critical to patient management, laboratory directors should consider occasionally revisiting policies and procedures to balance the competing demands of tissue stewardship and send-out testing requests.

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Q. Is it acceptable to perform weak D testing on a newborn who has an RhD-negative blood type and a positive direct antiglobulin test? We know a positive DAT might cause false-positive results on an Rh test, but can it cause false-negative results?

A.After an RhD-negative woman gives birth, newborn red blood cells found to be RhD-negative by direct agglutination are examined for the weak D phenotype using an indirect antiglobulin test for immunoglobulin G (IgG) anti-D. If the baby is weak D reactive, the mother is given Rh immune globulin. However, excess fetomaternal hemorrhage must be ruled out by quantifying the fetal red blood cells in the peripheral blood of the mother using the Kleihauer-Betke test or flow cytometry since the fetal rosette test is invalid for detecting weak D fetal red blood cells.[1]

A reactive DAT on neonatal red blood cells is problematic relative to RhD typing for two reasons. First, simple IgG indirect antiglobulin test typing cannot be performed for a weak D phenotype because IgG is already present on the red blood cells. Second, if the mother has strong anti-D against RhD-positive fetal red blood cells, the baby's RhD typing by direct agglutination might be falsely negative because of antigen blocking by anti-D.

Elution techniques are available to strip IgG from red blood cells while leaving the cells intact for typing. EDTA glycine acid reagents are most commonly used for this purpose.[2] After neonatal red blood cells are treated with such reagents and undergo a repeat DAT to make sure immunoglobulin is no longer present, they can be typed for RhD using routine direct and indirect antiglobulin testing.

1. Ramsey G, Park YA, Eder AF, et al. Obstetric and newborn weak D-phenotype RBC testing and Rh immune globulin management recommendations: lessons from a blinded specimen-testing survey of 81 transfusion services. *Arch Pathol Lab Med*. 2023;147(1):71–78.
2. Judd WJ, Johnson ST, Storry JR. *Judd's Methods in Immunohematology*. 4th ed. AABB Press; 2022.

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