Q & A, 6/13

Editor: Frederick L. Kiechle, MD, PhD

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Submit a Question

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[pulledquote]Q. Say an individual is stuck with an HIV-contaminated needle or occult infected with HIV by bodily fluid transmission and is started on preventive antiretroviral treatment to prevent permanent infection. (Treatment protocol is one-month intensive treatment.) Is there any known laboratory procedure by which a specimen could be isolated to determine by culture if the patient was indeed infected (assuming the patient is seronegative six months plus after treatment was initiated)?[/pulledquote]

A. First, it is very unlikely that the patient is infected, if seronegative after six months. It sounds like five-plus months have passed since treatment was ended, and if virus was still present after treatment, seroconversion/appearance of a viral load would have been expected during that time period.

With regard to whether there is a culture-based laboratory test that could detect infection if it was present in this scenario, the answer is probably not. The test that would need to be performed is co-culture of patient blood cells with cell lines. This test is rare—not widely offered outside of research laboratories. Moreover, such a test may lack the sensitivity needed to detect an infection under these restrictive conditions: extremely low viral load (if any at all) and after the use of anti-HIV pharmacological agents.

Another laboratory method that one could use to assess for infection in this case would be an HIV DNA assay. That involves collecting blood cells and looking for HIV DNA (provirus) by PCR. While such a test can detect as low as one copy of viral DNA, it is still possible that this would not be sensitive enough in this context. That is because it is entirely possible that the antiretroviral drugs have limited the spread or seeding of the virus and therefore there may be extremely few proviruses present to be detected by this assay.

It is important to restate, however, that in this scenario, infection is highly unlikely and commonly used antibody and RNA-based tests should offer significant assurance of the patient's status.

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[pulledquote]Q. Several surgeons at our hospital use an outside pathology group to make decisions that result in surgery. It's the opinion of my pathology group, from a risk-management perspective, that we should review the findings before a surgical procedure is performed at our hospital to make sure the external findings are in agreement with those of our pathologists and support the decision

for surgery. What are your thoughts, and what do most institutions do?[/pulledquote]

A. This is a practice that is popular, if not common, at many academic medical centers, and it is recommended by the Association of Directors of Anatomic and Surgical Pathology (ADASP).1 Your group's opinion is certainly reasonable, including from a risk-management perspective, but what you are proposing will require buy-in from clinical services, who will be the ones to instruct their patients to request that their slides be sent for in-house review.

Review of outside cases brought in for major treatment (surgery, chemotherapy, radiation) does result in a significant amount of discrepancies in the diagnosis, in the experience of one of the authors (REN) and based on published studies. The most recent such study2 to quantify the discrepancies and that could provide evidence in support of such reviews took place at Mayo Clinic in Rochester, Minn., where the Division of Anatomic Pathology reviews externally acquired surgical pathology materials of referred patients before treatment takes place at Mayo Clinic, and where the authors say the practice had come under scrutiny as interest in controlling costs had grown. The frequency of major disagreements with external diagnosis was found to be only 0.6 percent (457 cases of 71,811 total cases), but the changes in diagnosis were significant and, the authors reported, in many cases had a major impact on the patient's care. The authors call the low overall rate of major disagreements "reassuring for pathologists in all clinical settings," but they point out that the percentage represents nearly two (1.85) patients per week who would potentially be treated inappropriately. They concluded that the practice has "protective benefit for patients."

Paul Valenstein, MD, in an accompanying editorial,3 says the results of the Mayo study are comparable to those of previous reviews, but lower than other reported rates of disagreement.4,5 He also advises caution in generalizing from any retrospective single-institution study.

A survey of 300 randomly selected hospitals was done many years ago to determine the degree of compliance with the ADASP recommendations.6 There were 55 responses from hospitals self-described as community-general. Seven respondents were hospitals self-described as nonacademic-tertiary care, and 61 described themselves as academic-tertiary care. Three institutions described themselves as a mixture of two categories. Only half of the 126 responding institutions required in-house review of outside material, with 46 of 61 academic-tertiary centers requiring it.

Thirty-seven of 55 community-general hospitals did not require it before surgery could be performed. The vast majority of those that responded either encouraged or required the practice.

On a more prosaic but necessary level, it should be noted that most of this work is likely to be done gratis because most insurance companies will not pay for the review service, and few patients will want to pay out-of-pocket for a diagnosis that has already been provided unless there is some question. Certainly these practical issues should be explored with clinicians, hospital administrators, and perhaps patient advocates at the hospital before such a project is launched.

As Dr. Valenstein writes in his editorial, "What is yet not clear is whether this activity is a good institutional or societal investment in a resource-constrained environment, and whether extradepartmental reviews should be conducted routinely or selectively."

1. Association of Directors of Anatomic and Surgical Pathology. Consultations in surgical pathology. *Am J Surg Pathol.* 1993;17(7):743–745.
2. Swapp RE, Aubry MC, Salomão DR, Cheville JC. Outside case review of surgical pathology for referred patients. The impact on patient care. *Arch Pathol Lab Med.* 2013;137(2):233–240.

3. Valenstein P. Review of extradepartmental pathology diagnoses. Good medicine? Good investment? *Arch Pathol Lab Med.* 2013;137(2):156–157.
4. Kronz JD, Westra WH, Epstein JI. Mandatory second opinion surgical pathology at a large referral hospital. *Cancer.* 1999;86(11):2426–2435.
5. Abt AB, Abt LG, Olt GJ. The effect of interinstitution anatomic pathology consultation on patient care. *Arch Pathol Lab Med.* 1995;119(6):514–517.
6. Gupta D, Layfield LJ. Prevalence of inter-institutional anatomic pathology slide review: a survey of current practice. *Am J Surg Pathol.* 2000;24(2):280–284.

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