Quality Assurance in Veterinary Diagnostics

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A sample from a growth around the lower right canine tooth of a 2-year-old, spayed female Welsh corgi was submitted to the Veterinary Diagnostic Laboratory for cytologic evaluation.

The clinician reported that the growth had appeared 2 days before sampling but provided no further information, aside from the patient’s name.

The cytology of the sample was poorly cellular but was interpreted by the clinical pathologist to be most consistent with chronic suppurative inflammation. Because of the location of the growth and the young age of the dog, the pathologist also suggested that an underlying neoplasm (e.g., ameloblastoma) may be present, although no cells in the sample were consistent with a neoplasm.

Upon receiving the laboratory report, the clinician called the laboratory to report that the history on the submission paperwork had been misstated. Rather than the cytology sample being obtained from a growth at the base of the canine tooth, the clinician reported that the sample was instead taken from an enlarged area—a possible mass—on the hip and was associated with a recent vaccination site.

ASK YOURSELF...

What is the most important factor in providing the highest level of assurance of a quality laboratory diagnostic interpretation?

A. The person collecting the sample is properly trained.
B. Submission forms are filled out correctly.
C. Laboratory personnel are properly trained for processing the sample and the results.
D. The diagnostician (a clinical pathologist in this case) has all the necessary information to interpret the sample submitted.
E. All of the above
Correct Answer: E
All of the above

All of these factors, and many others, work together to ensure that clinicians and their clients receive the highest-quality results possible.

In addition to providing an interpretation or other results on samples, a veterinary diagnostic laboratory must ensure that the highest level of quality (quality assurance) is achieved. To that end, quality assurance is a major focus and concern for the veterinary diagnostic laboratory. For most university and state laboratories, quality is maintained and evaluated according to standards outlined by the American Association of Veterinary Laboratory Diagnosticians and is based on ISO and/or OIE international standards. These standards require that all operations of the laboratory be described in SOPs; all personnel are trained in the SOPs; deviations from these procedures are documented and, if necessary, corrective action instituted; quality control/assurance is instituted in all units including receiving and administration; and all personnel receive continuing education training.

Remedying Erroneous Submissions
As seen in red in Figure 1, when the error was reported, the laboratory personnel correctly added a statement to the original submission form. The date of the correction and the initials of the person making the correction were not included, however. These omissions constitute failure to follow the veterinary diagnostic laboratory SOP for making such corrections and require that a root-cause analysis be performed. If corrective action is necessary, it must be documented on a corrective action form to assure that the particular error is not repeated.

The administrative personnel at the laboratory correctly added a note to the patient record in the database indicating the date of the reported error. The clinical pathologist also correctly added a dated addendum to the original final report, which indicated the change in the sampling location, and revised the report to reflect that the sample from the hip was consistent with inflammation noted at vaccination sites. As stated in the laboratory SOP, no information previously entered was removed from the original patient record. The final report provided to the clinic reflected the new information and the changes made.

In general, the standards used in diagnostic laboratories can be followed in clinical practice to identify why the error in entering the patient data on the submission form was made and to determine what corrective actions, if any, should be taken. Together, the clinic and the laboratory can ensure quality services for clients and pets and provide documentation of that quality.

TAKE-HOME MESSAGES

• Quality assurance in the veterinary diagnostic laboratory begins with submission of samples from the clinic and continues until the clinic receives the final laboratory report.
• Complete and accurate patient data and history are essential for accurate diagnostic interpretation of samples submitted to the veterinary diagnostic laboratory.
• Errors allowed to persist can damage quality assurance in both the laboratory and in the clinical practice. On the other hand, prompt correction of errors followed by appropriate documentation and training increases the level of actual and perceived quality.
• Always review one or two slides of samples in-house before submitting them to the diagnostic laboratory to ensure an adequate level of cells is present. Otherwise the diagnosis may be speculative rather than definitive.

ISO = International Organization for Standardization (Genève, Switzerland); OIE = World Organisation for Animal Health (Paris, France); SOP = standard operating procedure