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VETERINARY DIAGNOSTIC LABORATORY

Featured in this issue: Director's Message, Featured Staff, Aerobic Culture Alternatives

Issue No. 13

July 2009

Director's Message

June 30 marked the end of the fiscal year for the VDL. While the economy affected the number of submissions we received from November through March, submissions have increased over the past three months, with June showing the highest number since August of 2008. We hope this continues and reflects increased activity in your clinics and client willingness to pursue the necessary diagnostic testing. In any event, the VDL is alive and well, and looking forward to a productive year in serving the veterinarians of Illinois.

Walter E. Hoffmann, DVM, PhD, Interim Director

Featured Staff

Jane Chladny, supervisor of the VDL histology laboratory, joined the staff in 1984 after serving in a similar role in industry for approximately 10 years. Jane received her training at Eastern Illinois University and the Memorial Medical Center in Springfield. She has been very active in both the Illinois Society and the National Society of Histotechnologists, has published several technical papers relating to her work, and has given numerous presentations at meetings of colleagues. She has received the Histotechnologist of the Year Award twice, the Distinguished Service Award from the Illinois Society of Histotechnologists, and the Academic Professional Excellence Award from the University of Illinois College of Veterinary Medicine. In addition to her supervisory role, Jane has been instrumental in setting up a large battery of special and immunohistochemical stains to allow VDL pathologists to better arrive at definitive diagnoses.

When Aerobic Culture Falls Short: Dr. Carol Maddox

While skin infections are most often caused by easily cultured aerobic bacteria such as Staphylococci, Streptococci, Pseudomonas and Proteus, occasionally an abscess or draining track develops that can be the result of a number of far more difficult to isolate and identify organisms. Now the list of differentials grows, and may include fungal agents, Actinomycetes, Mycobacterium sp. and anaerobes. All of these agents are slow-growing and initially may have few distinguishing morphological characteristics evident on cytology or impression Gram stains. Many are filamentous, and you need to start your patient on a course of antimicrobials quickly.

One approach that has gained favor is the use of ribosomal RNA sequencing to identify the agent. While there can be significant costs involved (\$25 to amplify the DNA by PCR, then \$75 to sequence the product and compare results to GenBank), the results can often be obtained in 2 to 3 days from a fine-needle aspirate or aseptically collected swab. One complication may be the presence of multiple agents. Occasionally 16S or 18S rRNA sequencing is used to aid us in identifying pathogenic agents that are difficult to speciate by other means.

As summer is upon us, the likelihood of Nocardia sp., Blastomycetes, and other agents causing deep skin infections is higher and cytology would be a good adjunct to bacterial culture. Making additional unstained slides or collecting an extra swab to hold for possible sequence analysis is cheap insurance when dealing with atypical infections. Stained slides, however, are seldom suitable for successful DNA extraction and sequencing. We have also had some success in amplifying DNA of pathogens from formalin-fixed, paraffin-embedded tissues, although decalcification and some other additional processing steps may damage the DNA. We can tailor our diagnostic approach to best suit your top differentials and the costs to your client. For additional information, contact Dr. Carol Maddox or Dr. Pat Hoiem-Dalen through the VDL Business Office, 217-333-1620.

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