Vetpath is a specialist veterinary laboratory dedicated to providing our clients with the finest laboratory diagnostic service. A team of veterinary pathologists and medical scientists with extensive experience in veterinary diagnostic pathology forms the core of the Vetpath team.

VNews

Vetpath Laboratory SERVICES

SEPTEMBER 2021

When and how to perform a liver biopsy

After diagnosing your patient with liver disease through clinical examination, clinical biochemistry and/or diagnostic imaging, you may find yourself asking; 'Should I be performing a liver biopsy for histopathology? Or is it more appropriate to perform a fine needle aspirate (FNA) for cytological examination?' The answer is not always a simple one.

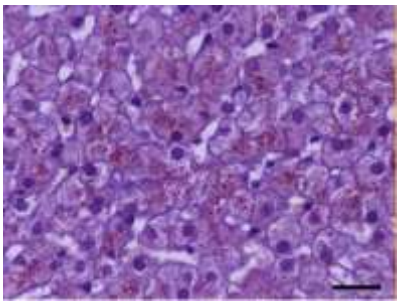
FNA can be performed on the liver, however there are diagnostic limitations to this test. Liver FNA is typically only useful in diagnosing generalised liver disease (e.g. hepatic lipidosis in cats, lymphoma, widespread metastatic disease). If localised disease is obvious (i.e. a hepatic mass), ultrasound guided FNA may also be diagnostically rewarding.

Ultimately, liver biopsy is often necessary for a definitive diagnosis (e.g. chronic hepatitis, nodular hyperplasia versus carcinoma). Liver histology can also provide useful prognostic information and will assist in determining the most appropriate treatment regime. Follow up liver biopsy can be used to monitor disease progression and assess whether a treatment regime is effective.

Liver biopsy specimens are an important diagnostic tool in suspected cases of acute or chronic hepatitis and for other suspected hepatopathies in a range of species. Sampling technique is key to maximising the chances of an accurate and prognostically relevant diagnosis.

The American College of Veterinary Internal Medicine (ACVIM) consensus statement on the diagnosis and treatment of chronic hepatitis in dogs recommends that at least 12-15 portal areas are included in the evaluated biopsy samples. This means that larger biopsy samples are preferred to core biopsies, although the latter may be sufficient.

It is also important to remember that disease can vary markedly between liver lobes due to variation in blood supply and bile drainage. Therefore, where possible multiple liver lobes should be sampled for histopathology and/or ancillary testing (i.e. hepatic copper levels).



Hepatic copper accumulation

Vetpath Laboratory Services welcomes feedback on all aspects of our service from couriers to lab results. Please feel free to contact us at 9259 3666 or email enquiries@vetpath.com.au

Your tissue samples should always be accompanied by a summary of the pertinent clinical history, diagnostic imaging results and any unusual haematological and biochemical findings. Pathologists use this information when corroborating the histologic findings to assist in making the most appropriate diagnosis.

Liver Sampling Techniques
The consensus panel recommends that at least 2 liver lobes are biopsied using the following methods:

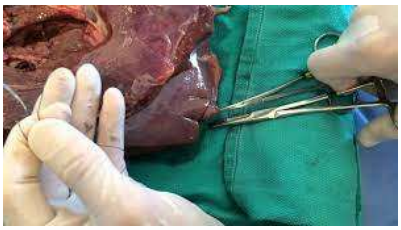
- Multiple 14 – 16 G needle biopsies (> 4 biopsies)
- Laparoscopic cup forcep biopsies (5 biopsies)

At the time of the biopsy procedure, the panel also recommends acquiring samples for culture and copper analysis.

The minimum wet weight required for copper analysis is 20-40 mg. The more samples submitted the more reliable the results will be. Avoiding areas of fibrosis is recommended to prevent erroneously low copper measurements. Either of the biopsy techniques below will ensure the appropriate weight is achieved for copper analysis:

- 1 full 14 G (2-cm long) needle biopsy.
- Half of a 5 mm laparoscopic biopsy sample.

Use of 18 G needle should be avoided. One full length 18 G needle only provides 3-5 mg of wet tissue. If you are taking tissue for culture AND copper analysis please remember to take twice the amount of tissue listed above.



Swabs for PCR testing

The choice of which swab to use for PCR testing is an important consideration.

Wood is known to inhibit PCR testing, potentially causing invalid results. Always use a swab with a plastic handle rather than a wooden handle for sampling patients for the PCR panels. In addition, faecal samples containing wood (either by contamination during collection or by ingestion) can also be unsuitable for faecal multiplex PCR testing.

Swabs for PCR testing should not be submitted in culture media. The tip of the swab can be cut off with scissors and placed into a sterile urine container. Swabs can be refrigerated until submission to the laboratory.

Results for PCR samples submitted to the Jandakot laboratory are usually available in 5 – 7 working days.

Order of draw for blood tubes

Do you know the correct order for collection of blood tubes?

Collecting blood in the order below helps prevent clotting in anti-coagulated tubes and contamination of plain tubes with additives.

1. Citrate
2. Plain clotted
3. ACD tube
4. Lithium heparin
5. EDTA
6. Fluoride

VETERINARY PATHOLOGISTS
Jenny Hill BVSc (Hons) Dip ACVP, **John Jardine** BVSc MMedVet (Path) Dip MRCVS,
Celia Smuts BVSc MVS MSc PhD ACVP, **Jason Stayt** BSc BVSc Dip ACVP, **Leanne Twomey** BSc BVMS (Hons) PhD Dip ACVP,
Audra Walsh BSc BVMS Dip ACVP,
ABN 24 006 909 173 SPECIALIST VETERINARY SERVICES trading as
VETPATH LABORATORY SERVICES NATA Accredited Laboratory Number 14776