

## Australia's Veterinary Diagnostic Laboratory Specialists

### How to get the most out of your biopsy submission.

Getting a helpful result from your biopsy submission is as important to us as it is to you. That's why we've created a guide with tips on how to get the most out of your biopsy submissions.

#### 1. The submission process

- Please always complete the submission request form with at least: animal name, surname, vet clinic details, date of collection, age, sex, species, breed and lesion location with a brief and pertinent clinical history. Diagnostic imaging is also very useful in particular cases [e.g. oral masses, bone biopsies] and is always welcomed to be sent through to the laboratory via an email attachment.
- Please don't submit a case with no history or submit the entire patient history. We require a succinct and relevant history for appropriate interpretation of the microscopic changes we are seeing. Include lesion size where relevant.
- Always label the sample pot with the animal name, surname and sample site.
- If submitting lesions from multiple locations that you need to be able to distinguish from each other, please do not submit them in the same pot. You can label jars "1", "2" etc with an accompanying key on your request form ("1 = left elbow" etc).
- If you need us to check a specific margin, please indicate this on the submission form and mark the margin with ink (or a suture, though ink is far preferable – and different ink patterns can be used to indicate different margins in the same mass).

- Ratio of tissue to formalin should be 1:10 (i.e. 1 part tissue to 10 parts formalin solution), and for optimal fixation samples should be no more than 1cm thick. The formalin prevents the tissue from decomposing and if it is unable to penetrate quickly enough we cannot examine the tissue (i.e. the tissue is destroyed).
- If/when you slice into tissue samples for fixation please do not incise margins. If you incise margins we can't evaluate them properly as incising them distorts the margin.(If you are going to slice through the sample prior to submission, then try doing it through the dermis and ensure you do not extend the incision into the deep margins.)
- When submitting splenic masses please submit the whole spleen or a generous cross section(s) of the entire spleen including the mass. If the sample is too large for your largest submission container you can submit it in two or more pots. We often need to examine multiple sections from the splenic mass and surrounding "normal" tissue to find neoplasms. Samples from haemorrhagic masses are best taken adjacent to the splenic parenchyma rather than from the periphery, as samples from the periphery are frequently composed only of hemorrhage, fibrin and cellular debris. If you submit an incomplete section of spleen we may miss the lesion.

## 2. Submission receipt and processing

- Biopsy results can take up to 2-5 working days from the time of submission. This is due to the time taken for fixation and processing.
- Additional time is required for cases with bone, which need decalcification, or nails that need softening, prior to processing.
- First, samples must fix in formalin for at least 24 hours. This is how long it takes for the formalin to penetrate 1 cm thick tissue. Without this fixation histologic evaluation will be compromised as tissues deteriorate.
- The submitted biopsy samples are processed either by a trained histology scientist or by a veterinary pathology in more complex cases.
- After this, the samples are placed in a processor that can take up to 12 hours (usually performed overnight).
- Once this is finished the tissues are "embedded" in wax so that they are rigid enough for a histology technician or scientist to cut 3-5  $\mu\text{m}$  sections (approximately 1 cell thick, for microscopic visualization).
- The sections are placed on microscope slides and are then stained and cover slipped.
- The sections are now ready for examination by a veterinary anatomic pathologist.

### 3. Examination and reporting of the biopsy results

- The histology slides typically don't arrive on the pathologist's desk until 2-3 days following submission.
- The pathologist will examine the histology slides and send through a report with a description, diagnosis and comment.
- If the pathologist deems no additional sections or stains are required they will send the report as a final report.
- If the pathologist deems that additional sections or special stains are required they will order these at no additional charge.
- If the pathologist recommends immunohistochemistry or any other tests that require an additional charge they will not order these tests without the consent of the submitting clinician.
- If anything in the report does not fit clinically with your patient or you have any questions, please do not hesitate to contact the pathologist. Communication is key to good patient care.

**For more information, please contact your veterinary pathology laboratory;**

**SVS** Pathology Network

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