

Australia's Veterinary Diagnostic Laboratory Specialists

Skin biopsy submissions.

Skin biopsies are a useful and routine tool used to assist clinicians in differentiating between particular skin diseases; *except in cases where primary infection is suspected* - wherever possible, common secondary bacterial infections should be diagnosed by cytology and cleared prior to biopsy, as the accompanying inflammatory changes can complicate the clinical picture and in some cases mask underlying disease .

More often than not, skin biopsies result in a morphological diagnosis with a list of differentials rather than a definitive answer. The morphological diagnosis should be used to rule-out clinical differentials, assist in a more tailored therapy, provide useful information to redirect clinical work up and may establish a diagnosis in conjunction with pertinent clinical history and gross lesions.

Consultation with a dermatologist or pathologist prior to sampling may assist in determining the best biopsy collection site and provide advice on differential diagnoses.

10 important considerations when submitting a skin biopsy sample

- **DO NOT** scrub the skin surface.
 - The exception to this rule is when a deep biopsy for culture is required.
- **Immunosuppressive and immunomodulatory medications** can mask lesions and should be **withdrawn** prior to sampling; unless there is a life-threatening condition which inhibits withdrawal.
 - NSAID's and corticosteroids should cease at least **2 weeks prior** to sampling [4 weeks is preferred for corticosteroids] and;
 - Long acting corticosteroids [depo injections] sampling after **4-6 weeks** of the initial treatment is recommended.
- **HISTORY, HISTORY, HISTORY!** Patient signalment and a complete but concise history is crucial when interpreting the biopsy specimens. Many diseases can look similar histologically and require history and lesion distribution for differentiation.
 - At a minimum the history should include: age at the onset of clinical signs, duration of clinical signs, presence or absence and intensity of pruritus, characteristics of the lesions (e.g. papular,

macular, pustular, crusting, or ulcerative), distribution and symmetry of the lesions, recent drug history, any key ancillary test results, and a list of differential diagnoses.

- NB: Including samples with grossly normal skin, and skin with varying degrees of change are important when investigating alopecia.
- 6 mm punch biopsies are best [cats and dogs], 4 mm punch biopsies should only be used for nasal planum and footpad submissions.
 - To avoid crushing the sample, use the cutting action of the punch tool rather than pressure.
- Sampling 3-4 sites is optimal as submission of multiple samples will increase diagnostic sensitivity and specificity. The biopsies should include areas with pustule formation, vesicles and crusts. Elliptical biopsies are preferred for ulcers and bullae, and should include the adjacent unaffected skin.
 - NB: Multiple skin punch biopsies of multifocal or diffuse dermatologic conditions are regarded as a single specimen for charging purposes.
- Excisional biopsies are best for smaller subcutaneous lesions. Larger subcutaneous lesions more often benefit from an incisional biopsy.
- Be sure to place samples immediately in formalin after their removal. Tissues remaining on the bench can dry out or can be heated by surgical lamps resulting in artefact which can preclude histologic interpretation.
- Inclusion of good quality images is always useful for a pathologist when comparing histological lesions with clinical disease.
- If you need to use local anaesthetic for the biopsy procedure, it is best to administer the solution within the subcutis. Local anaesthetics can cause oedema resulting in artifact that obscures true lesions.
- If you are concerned about an infectious process, make sure you take an additional sample for culture. This tissue can be placed into a sterile container with sterile saline on a sterile cotton swab.
- If you have any queries or concerns, please do not hesitate to contact us. We are always happy to help.

For more information, please contact your SVS Pathology Network veterinary pathology laboratory.

SVS Pathology Network

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