

Things to consider when you have a mammary mass in a dog

CYTOLOGY:

Is cytology of mammary tumours rewarding?

Generally, no. On a few occasions, cytology indicates a clearly malignant mammary tumour or a tumour of completely different cell type, and you have an answer. However, most of the time cytology isn't definitive and it is likely that a biopsy will be needed to confirm a diagnosis. Further, studies have shown cytology has a sensitivity of 25% to 95% and specificity of 49% to 96% when compared to histology for diagnosing mammary tumours. These figures are not reassuring!

Why is this?

Mammary tumours can have irregular distributions of normal, benign and/or malignant foci of mesenchymal and epithelial cells within the tumour. Depending upon where the needle samples, the true diagnosis can potentially be quite different from the cytologic diagnosis. Similarly confusing for the cytologist are well-differentiated carcinomas which show uniform cell size and shape with subtle changes and cytologically look unremarkable or epithelial cells from benign or low-grade lesions which can take on abnormal cytological features resembling malignant lesions. Further, benign lesions may undergo malignant transformation if left *in situ*. Finally, histology has the advantage of detecting tissue invasion and cellular responses to neoplasia that aid in the diagnosis.

If you are not a risk taker, consider going straight to histology.

HISTOLOGY:

So, having decided to forgo cytology (good choice!) and head straight to surgery, what next? For the same reasons listed for cytology, wedge biopsies can also miss areas in the tumour and complete surgical excision is recommended.

1. Prepare your client for the fact that you need to take **wide** surgical margins (you have the luxury at this site unlike removing tumours from many other sites).
2. If you are going to take narrow margins, mark the tissue with ink (see our "Histopathology Tip: Inking Surgical Margins" @ <http://svslabs.nz/cms/wp-content/uploads/2018/11/Histopathology-Tip-Inking-margins-003.pdf>)
By marking cranial vs. caudal and right from left (or medial vs lateral) aspects of the tissue, you will have a better idea of where to widen your margins, if needed.
3. Try to collect a draining lymph node or two. Did you know that wide margins sometimes include a draining lymph node that can be evaluated? If you are not comfortable surgically excising the regional lymph nodes, attempt aspiration of the subcapsular space to look for metastasis.