A cytologic biopsy (aka, fine needle biopsy or fine needle aspiration biopsy or “cytology”) of cutaneous and subcutaneous lesions (lumps and bumps) can result in a specific diagnosis or perhaps can better characterize a lesion. For nearly all lesions, the cytologic biopsy will not be as definitive as an incisional or excisional biopsy with a histopathological examination; but will be less expensive and yield results quicker.

For some lesions (e.g., lipoma), it takes minimal expertise and diagnostic methods to arrive at a correct diagnosis; but other lesions require extensive knowledge gained through experience and excellent equipment. For those who wish to develop their cytologic biopsy skills, the following should be considered essential.

- Develop techniques to obtain cytologic preparations that have monolayers of cells
- Have a quality cytologic stain that can provide reproducible results; quick stains can be acceptable
- Have a quality microscope that has excellent 40x- or 50x-oil and 100-x oil objectives (these objectives might cost $3000 to $5000 each)
- Have excellent textbooks and atlases for the species of interest
- Have knowledge of the types of lesions that can be found and the many variations of each disorder

During the microscopic examination of aspirates, scrapes, imprints, or other cytologic preparations, general goals are to arrive at one of these conclusions or opinions:

- Definitive diagnosis: can be achieved with a few neoplasms and some inflammatory lesions
- Consistent with _______: cells populations are seen in this condition but the findings are not unique to one diagnosis; additional diagnostic efforts are needed to confirm
- Suspicious of _______: findings are suggestive stated diagnoses but definitive evidence is not seen; additional diagnostic efforts are needed
- Not consistent with _______: A preliminary diagnosis had been made; the findings in this sample are not likely to be found in that disorder; or, the findings do not support the preliminary diagnosis

The following flowchart provides a basic guideline for the evaluation of a cytologic preparation. The concepts of the flow chart will be used during the virtual microscopy of several lesions involving the skin and subcutaneous tissues of dogs and cats.
1-1 L&B CVC: Smear of fluid from subcutaneous lesion Case: 176517
Dog, mixed breed, 3-yr-old, female (spayed)
A smear of serosanguineous to purulent fluid was submitted; the fluid was collected from a subcutaneous swelling that had a draining tract.

1-2 L&B CVC: fine-needle aspirate of cutaneous mass Case: 02-1975
Dog, Labrador retriever, 4-yr-old
A 2x4x3 cm mass was located in the lateral skin of the left hind thigh or hip. The owner first noticed the mass a few weeks ago and it has been getting larger. The mass protruded slightly and felt like it extended into the subcutaneous tissue. A fine-needle aspirate of the mass was collected and a smear was prepared for examination.

1-3 L&B CVC: fine-needle aspirate of cutaneous mass Case: 02885
Dog, Golden retriever, male, 12-year-old
The dog was presented because of a mass located on the dorsal aspect of the tail head. Physical examination revealed 2-cm, soft mass in the dermis and was covered with haired skin. A fine-needle aspirate of the rear leg mass was collected and a smear was prepared for examination.

1-4 L&B CVC: fine-needle aspirate of cutaneous mass Case: 030056
Dog, basset hound, male (neutered), 7-year-old
The dog was presented because of perianal masses. Physical examination revealed a small perianal mass and possibly enlarged regional lymph node. A fine-needle aspirate of the mass was collected and a smear was prepared for examination.

1-5 L&B CVC: fine-needle aspirate of cutaneous mass Case: 02-2357
Dog, breed, age, and gender not provided
A smear of an aspirate obtained from a mass in the skin of a foot was submitted for evaluation.

1-6 L&B CVC: fine-needle aspirate of cutaneous mass Case: 024854
Dog, schipperke, male (neutered), 15-yr-old
The dog had been coughing for 2-3 weeks. During a physical exam, a mass was found in the subcutaneous tissues of the left lateral thoracic; it appeared to be firmly attached to underlying tissues. A fine-needle aspirate of the mass was collected and a smear was prepared for examination.

1-7 L&B CVC: Imprint of moist cutaneous lesion Case: 256285
Dog, mixed breed, male (neutered), 4-yr-old
The dog was presented because of a swelling of the left flank that broke open yesterday and yellowish red material oozed out. The preparation is an imprint of the ulcerated area after superficial debris and hair were removed.

1-8 L&B CVC: Imprints of cutaneous mass Case: ASVCP 1988-11
Cat, domestic short hair
The cat was presented because of skin lesions. Physical examination revealed several, pea-size, cutaneous masses. One mass was excised and imprints of the mass were submitted for evaluation.

Additional slides will be reviewed if time permits.