Aspirate from an enlarged right popliteal lymph node in a 7 year old MC mixed breed dog

November 2013
Slide 1: Diff-Quik stain

Predominant cell population is small lymphocytes
But...

There is also an atypical round cell population
These cells have:

- Stippled chromatin
- 1-2 nucleoli
- Moderate to low N:C ratios
- Binucleation
- Eccentric nuclei

NOT large lymphocytes!
Interpretation: Metastatic discrete cell tumor

Differentials???
Numerous intracytoplasmic purple granules are now evident, consistent with mast cells.

**Diagnosis:** Metastatic mast cell tumor
Discussion

Romanowsky stains

- Most utilized cytological stain in vet med
- Combination of acidic dyes (eosin family) & basic dyes (thiazin family) to bind cell structures

Aqueous Romanowsky stains

- Water-based dyes
- Examples: Dip stains (Diff-Quik, Hema 3)

Methanolic Romanowsky stains

- Methanol-based dyes
- Examples: Wright’s or Wright-Giemsa
• Mast cells are often easily ID’d on cytology by their characteristic deep purple granules
• However, there has been increasing anecdotal and published accounts of mast cell granules failing to stain well with dip stains such as Diff-Quik$^{1,2,3}$
• Reason remains unclear
  – Increased fixation time was thought to improve staining, but a recently published study failed to corroborate this.
References

