

Case no: B10-00509



Bala Manickam, Anatomic pathology resident
Elizabeth Howerth, DVM, PhD, DACVP
University of Georgia, Athens, GA

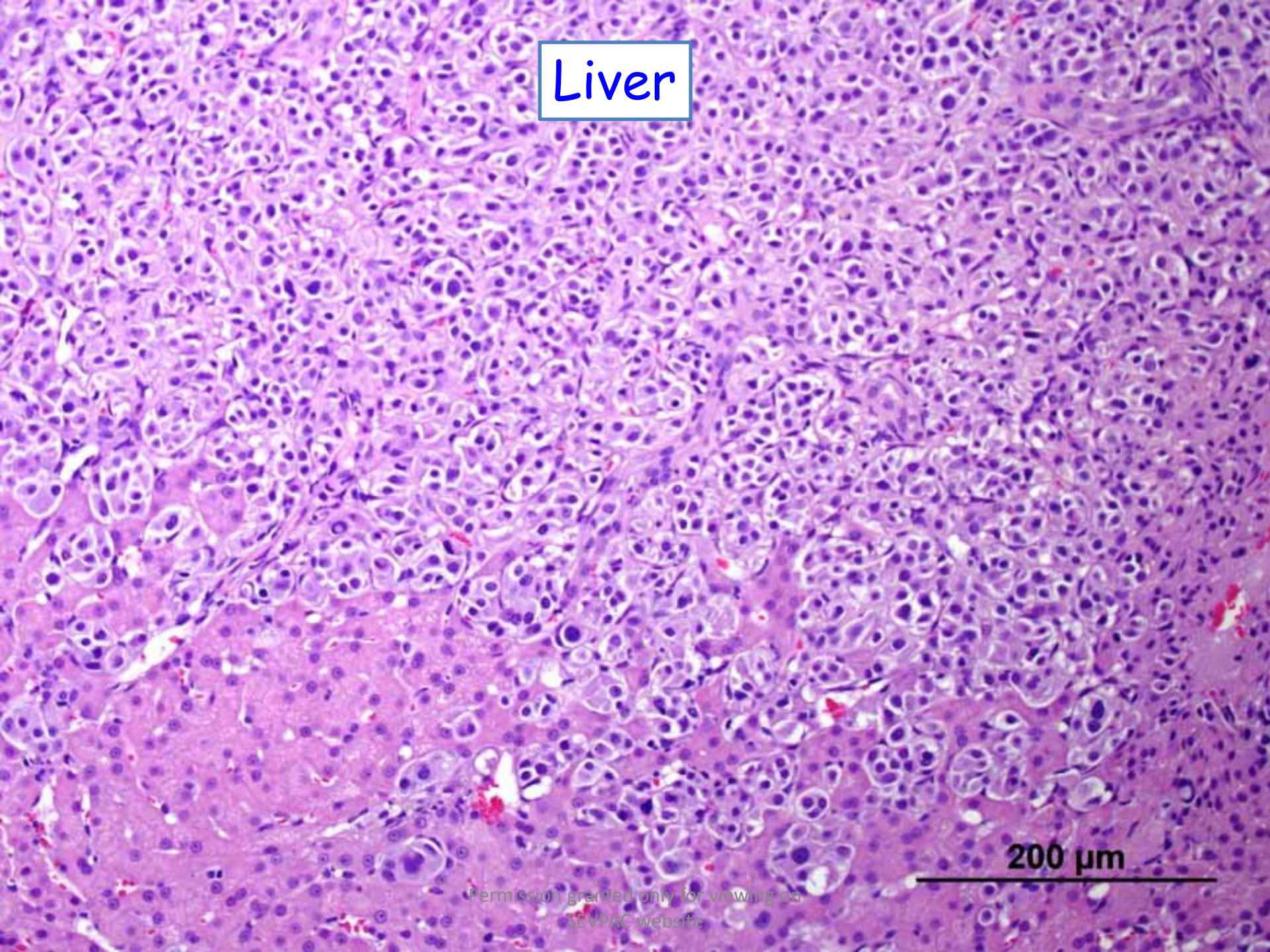
- **Signalment**

- "Timber" a 15 year old male neutered Chow Chow

- **History**

- Presented for recheck of previously incompletely excised thyroid carcinoma in 2007
- History of Cushing's disease
- Multiple masses of various sizes were found diffusely throughout the liver and spleen as diagnosed by ultrasound.

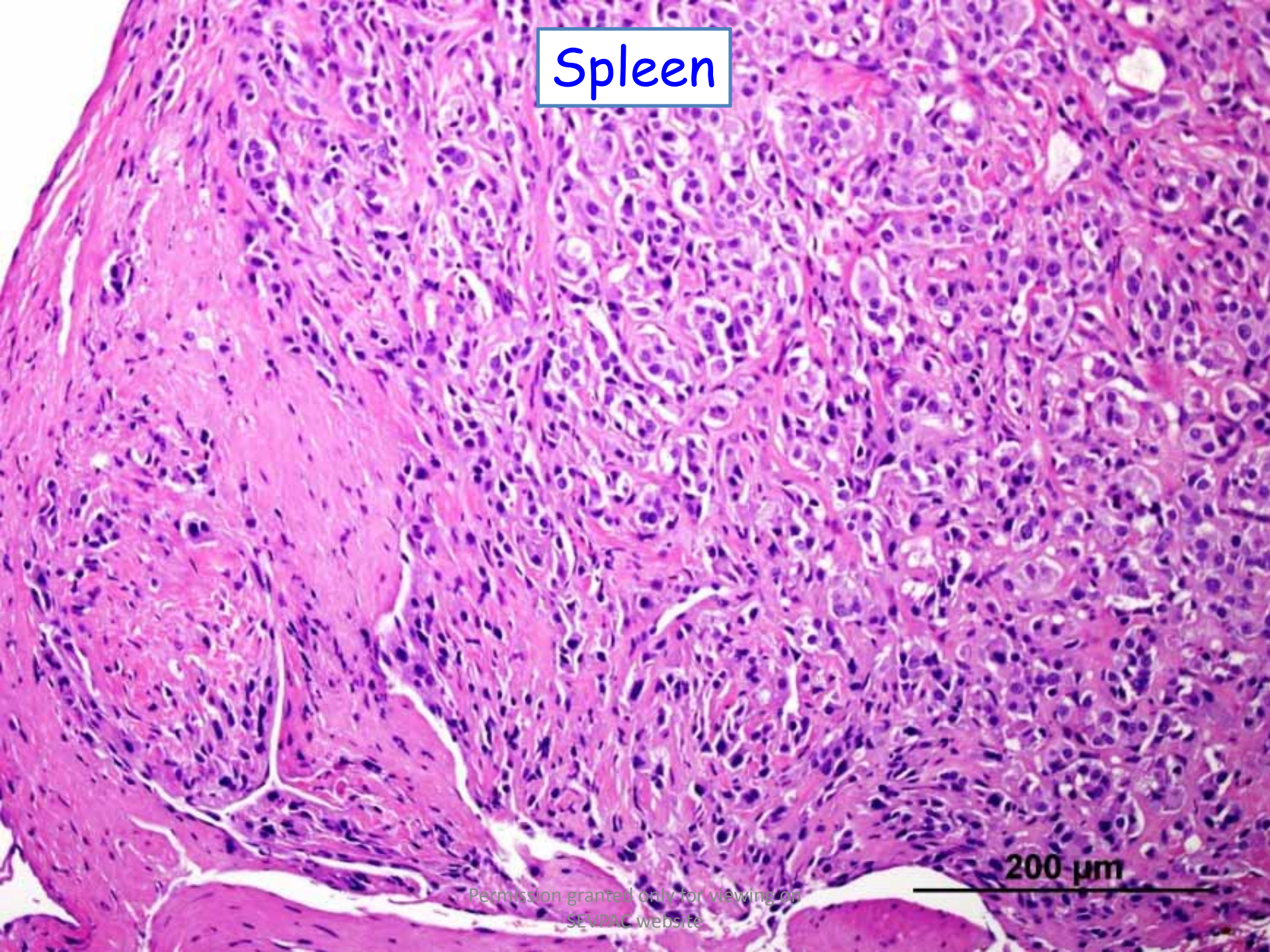
Liver



200 μm

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SEVPAC website

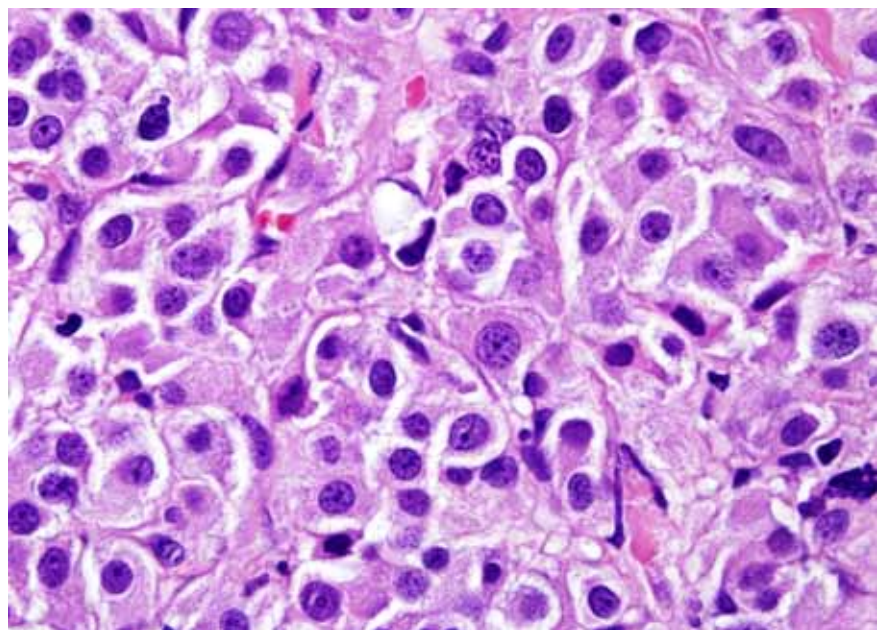
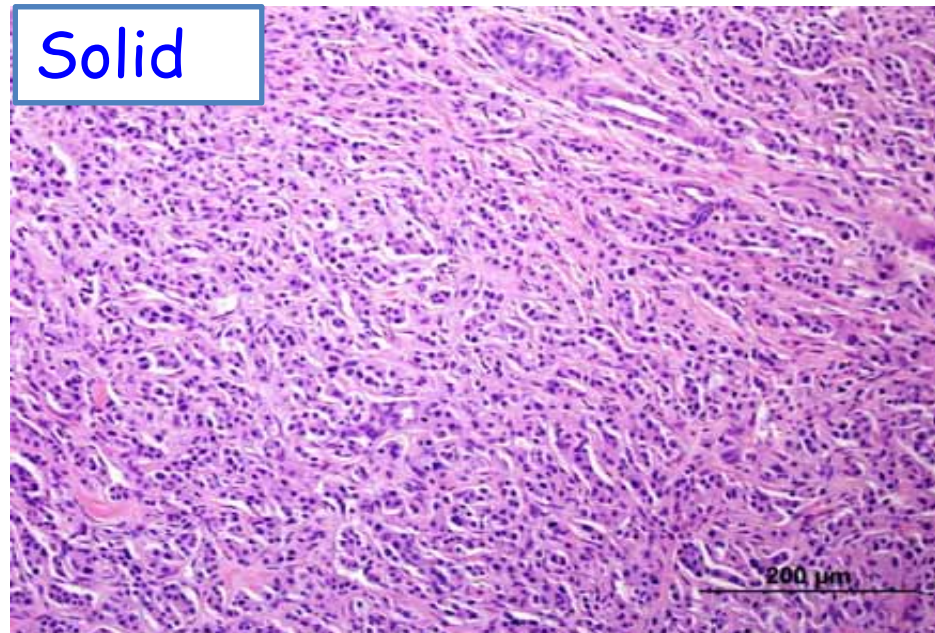
Spleen



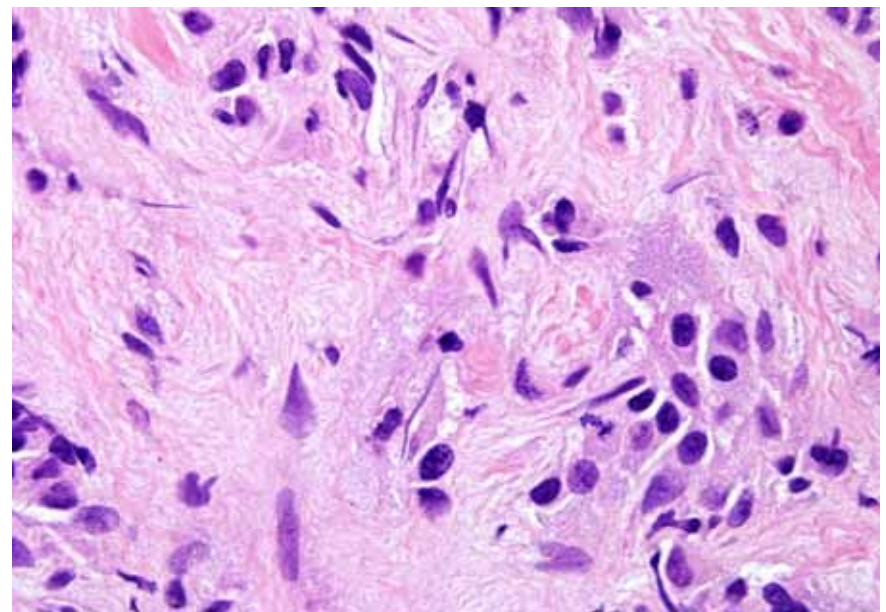
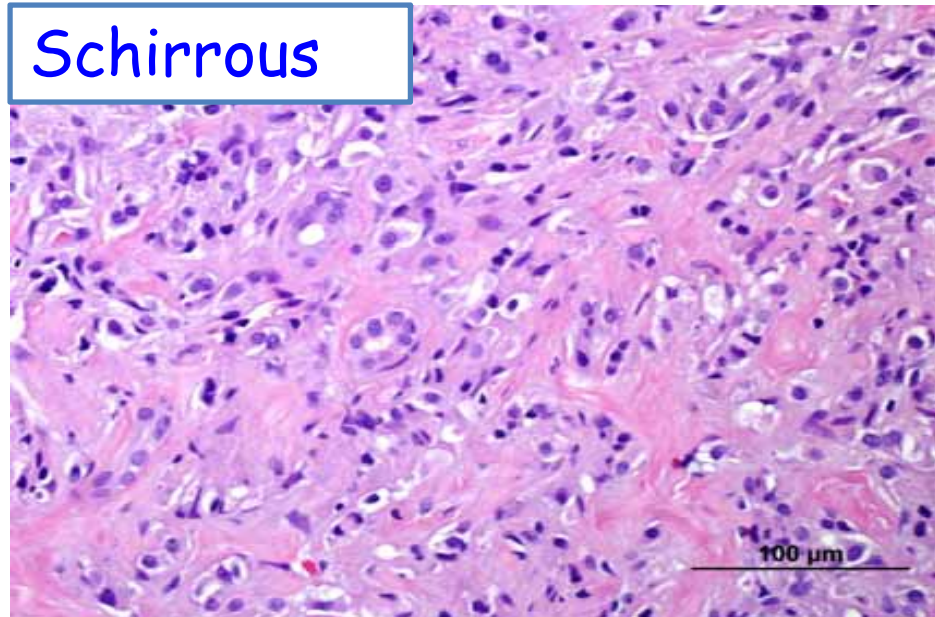
200 μ m

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SEVPAC website

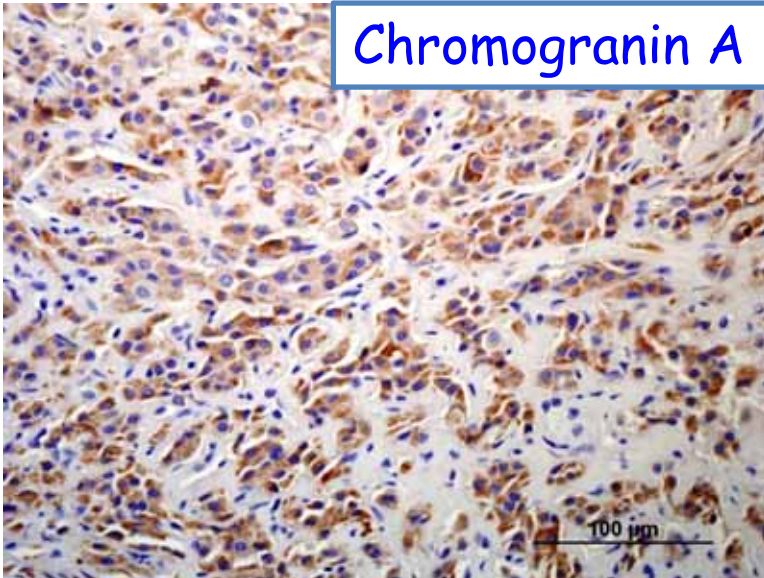
Solid



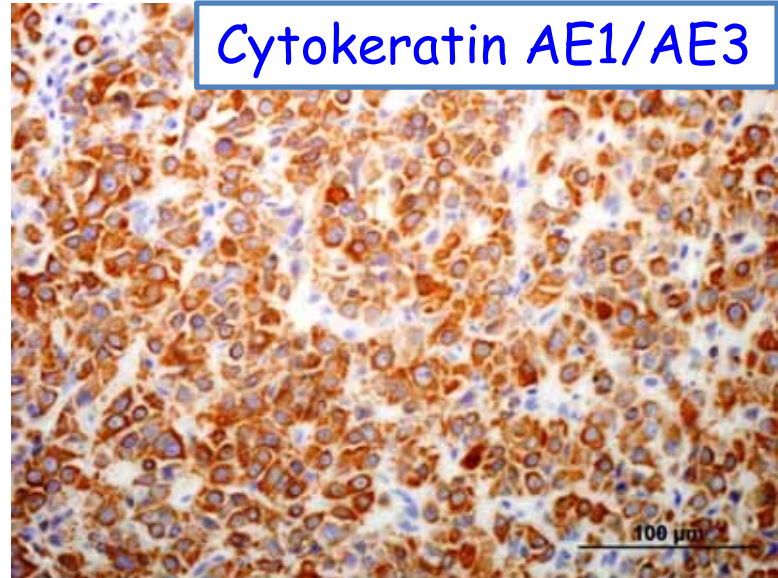
Schirrous



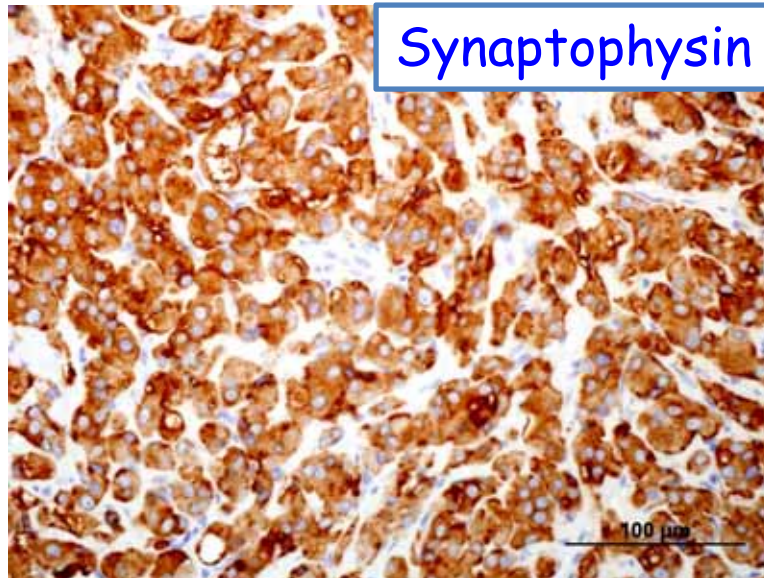
Chromogranin A

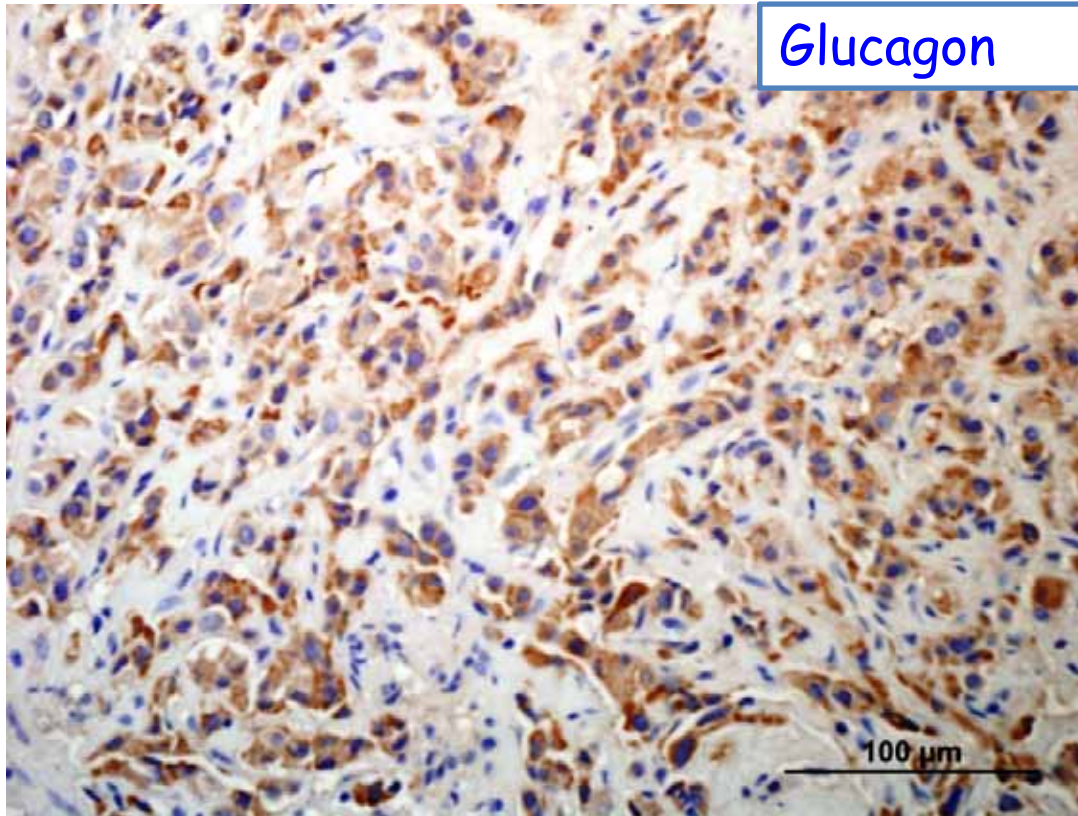


Cytokeratin AE1/AE3



Synaptophysin

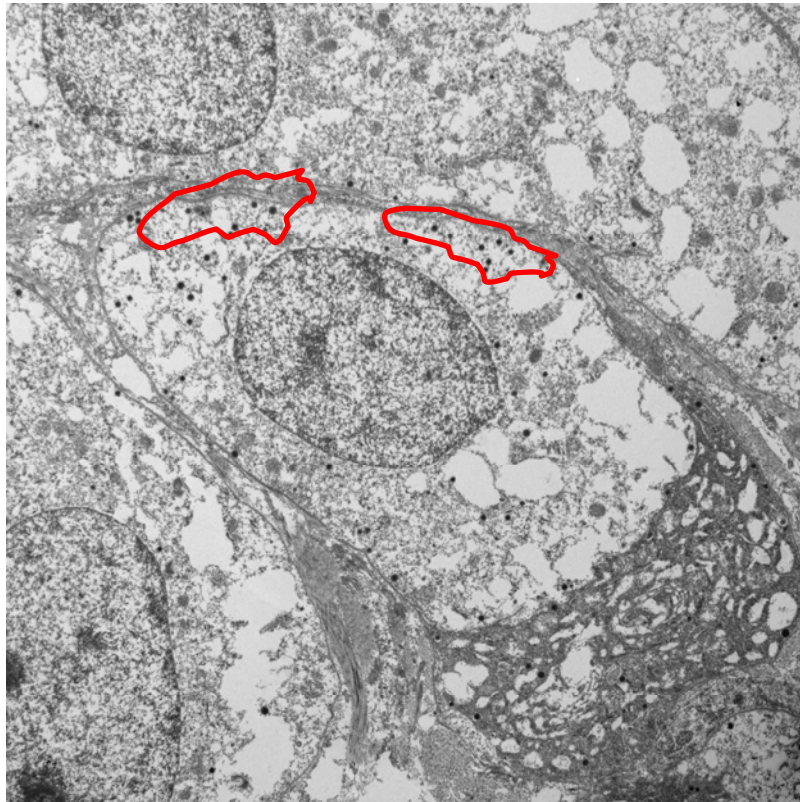




Cytokeratin pan, vimentin,
insulin and thyroglobulin } **NEGATIVE**

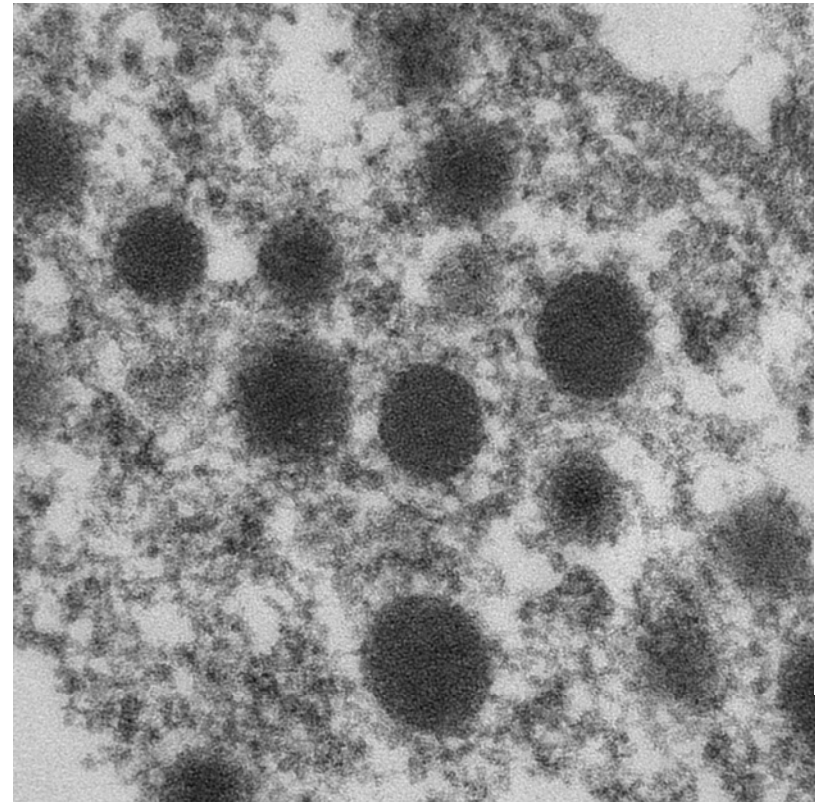
Transmission Electron Microscopy

- Large number of small, round, secretory granules
- Granules are electron dense



2109 Glucagonoma.001
granules low mag
Print Mag: 9740x @ 7.0 in
3:48:31 p 04/22/10

2 microns
HV=120.0kV
Direct Mag: 2500x
CVM EM Lab



2109 Glucagonoma.005
granules 50K
Print Mag: 195000x @ 7.0 in
4:07:07 p 04/22/10

100 nm
HV=120.0kV
Direct Mag: 50000x
CVM EM Lab

Morphologic diagnosis:

Liver and spleen: Glucagonoma

Discussion

- Glucagonoma - rare endocrine tumor of the α -cells of the pancreatic islets
- 8 reports of glucagonoma in dogs
- Clinical findings: skin lesions, weight loss, PU/PD and anemia
- Laboratory findings:
 - increased ALT & ALP
 - hypoalbuminemia
 - hyperglycemia

- Abdominal ultrasound: 4/8 cases had liver abnormalities
- In this case, there was no skin abnormalities
- clinically silent glucagonomas in humans
- a report of primary malignant hepatic glucagonoma.

Multiple endocrine neoplasia syndrome

- Syndrome characterized by multiple endocrine tumors in different organs
- Genetic - Autosomal dominant in humans
- Types- MEN1 (MEN1) and MEN2 (RET)
- Based on the presence of Cushing's disease, thyroid carcinoma and glucagonoma, it is possible this dog has multiple endocrine neoplasm syndrome.

Acknowledgements

- Histology laboratory, Athens GA
- Mary Ard

Thank you!



Questions?