

Oral Melanoma in a Domestic Shorthair Cat

Devon Young
Senior Seminar
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Initial Exam – June 2011

- Signalment
 - 11 year old MC DSH
- Chief Complaint
 - Gingival mass (left buccal maxillary canine)
 - Upper lip displacement
 - Loose incisors
 - Ptyalism (blood tinged)
 - Dysphagia

History

- Hyperemia of buccal gingiva of left maxillary canine (January 2011)
- Hypertrophic cardiomyopathy and hyperthyroidism (March 2011)
- Mass along buccal gingiva of left maxillary canine (April 2011)
- Punch biopsy, draining lymph node aspirate incisor extraction, 3 view thoracic radiographs (May 2011)
- Referral to Cornell Oncology

Physical Exam

- Moist dermatitis of left dorsal carpus
- III/VI heart murmur
- Right thyroid slip
- Enlarged left mandibular lymph node
- Left ocular discharge
- Blood tinged drool
- Gingival mass with displacement of lip and nare



Problem List

- Oral Mass
 - Ptyalism
 - Lip and nare displacement
 - Ocular discharge
- Lymphadenopathy
- Hyperthyroidism
- Hypertrophic cardiomyopathy

Differential Diagnosis

- Cyst
 - Radicular
 - Dentigerous
- Hematoma
- Abscess
- Neoplasm
 - Soft tissue
 - Odontogenic
 - Bone
- Granulomatous Inflammation
 - Eosinophilic granuloma complex

Diagnosis - Neoplasia

- Histopathology – Malignant amelanotic melanoma
- Thoracic radiographs – suspect pulmonary metastatic nodule
- Referred to Cornell to pursue palliative treatment options

Feline Oral Tumors

- Accounts for 3% of all neoplasms in cats
- Most common
 - Squamous cell carcinoma (70-80%)
 - Fibrosarcoma (13-17%)

Feline Oral Melanoma

- Rare - 3% of all oral tumors in cats
- Malignant, rapid and aggressive growth
- Early metastasis to local lymph nodes, bone, lungs, and CNS
- Metastatic disease usually present at time of diagnosis – if not, exhibits within six months
- Few studies performed in cats
- Median survival of <5 months

Staging of Oral Melanoma

- Minimum database
- Cytology of draining lymph node aspirates
- 3 view chest radiographs
- Abdominal ultrasound

Biological Behavior

- Extrapolated from dogs
- Anatomic site
 - Highly predictive of local invasiveness and metastatic potential
 - Haired skin typically more benign if no mucosal involvement
- Size and stage (WHO)
 - Stage I = < 2 cm diameter
 - Stage II = 2 cm to < 4 cm. diameter
 - Stage III = 4 cm. or greater tumor and/or LN metastasis
 - Stage IV = distant metastasis
- Histologic parameters
 - Criteria of malignancy: nuclear atypia, mitotic index, invasion, necrosis

Further Diagnostics and Staging

- Complete blood count, blood chemistry
 - No significant abnormalities
- Repeat 3 view thoracic radiographs
 - Progression of disease
 - Re-evaluation of suspect metastasis
- Review of histopathology
- CT/RT planning

THORACIC RADIOGRAPHS

[6/7/201

RADIOGRAPH-REQ

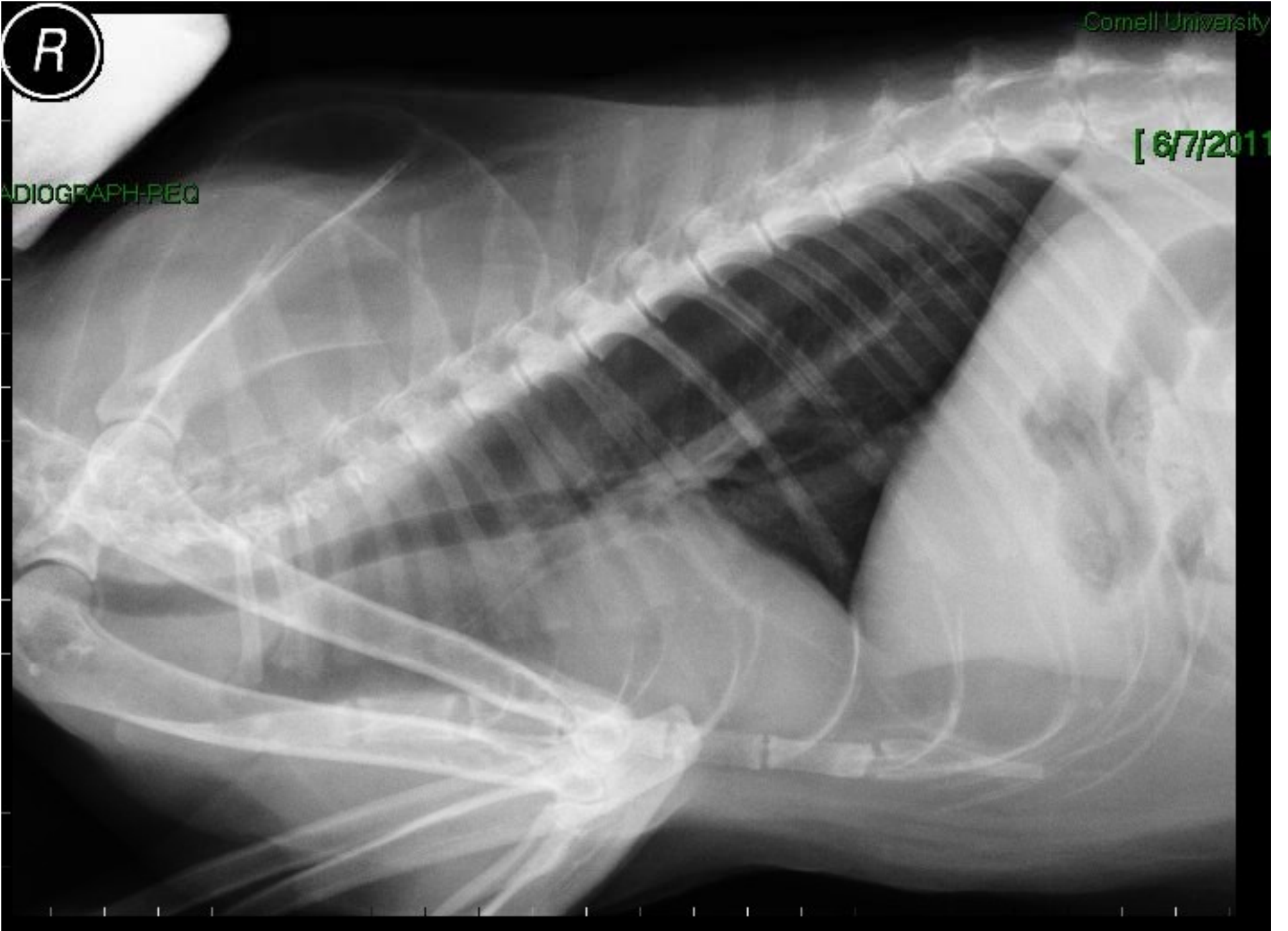


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RADIOGRAPH-PEQ



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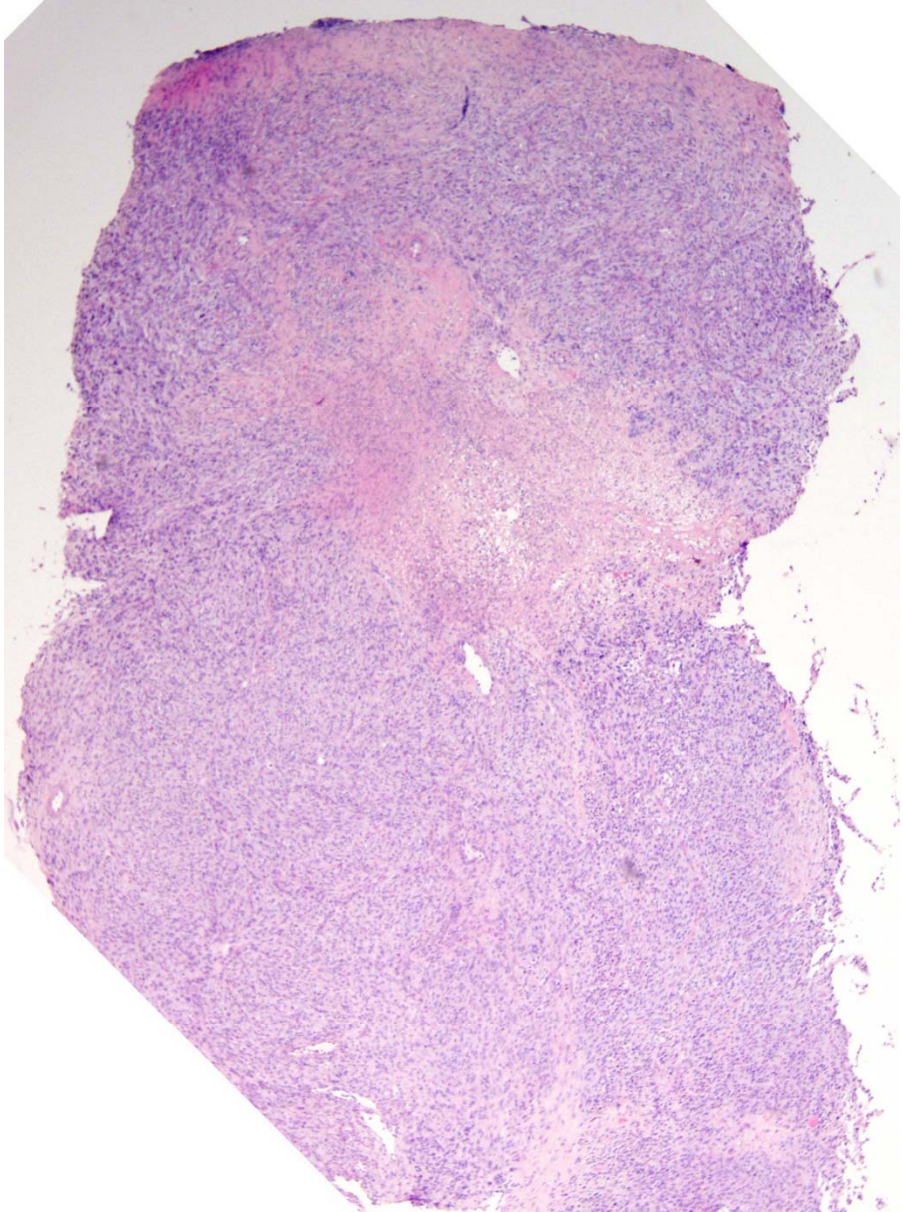
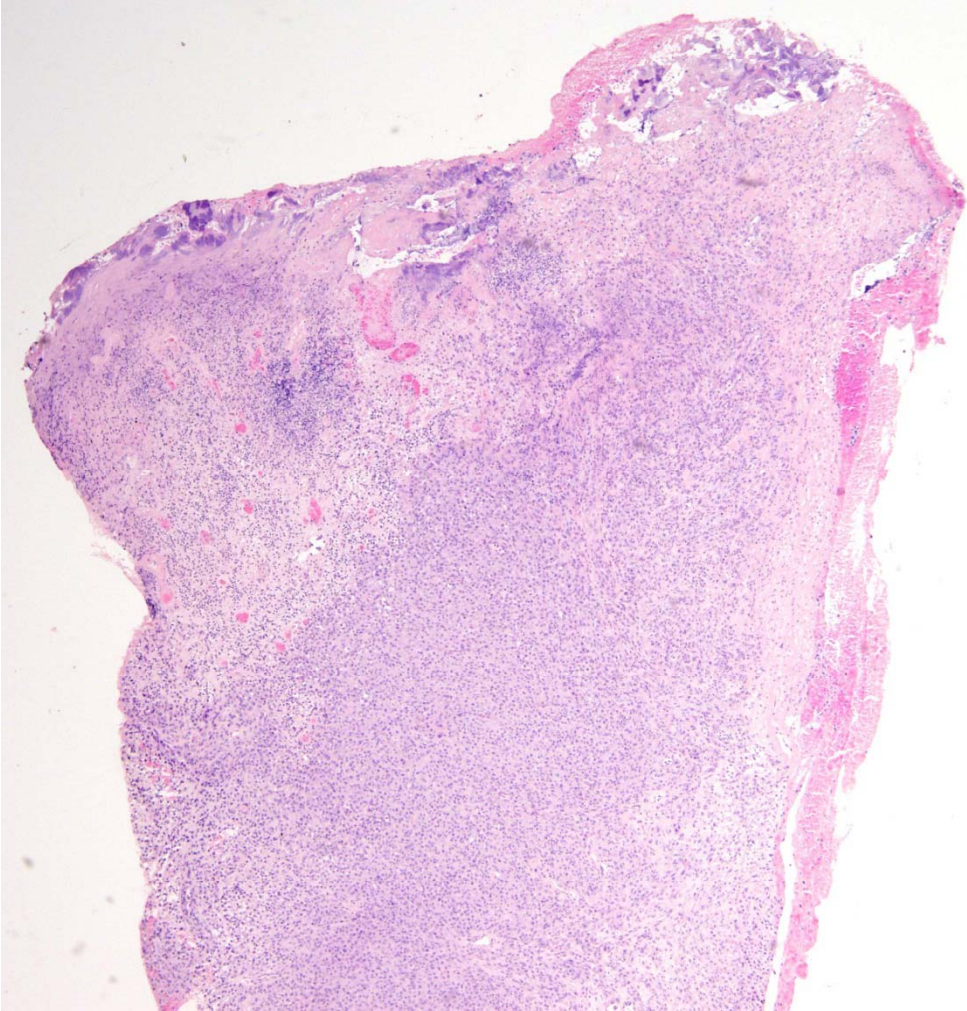
X RADIOGRAPH-REQ

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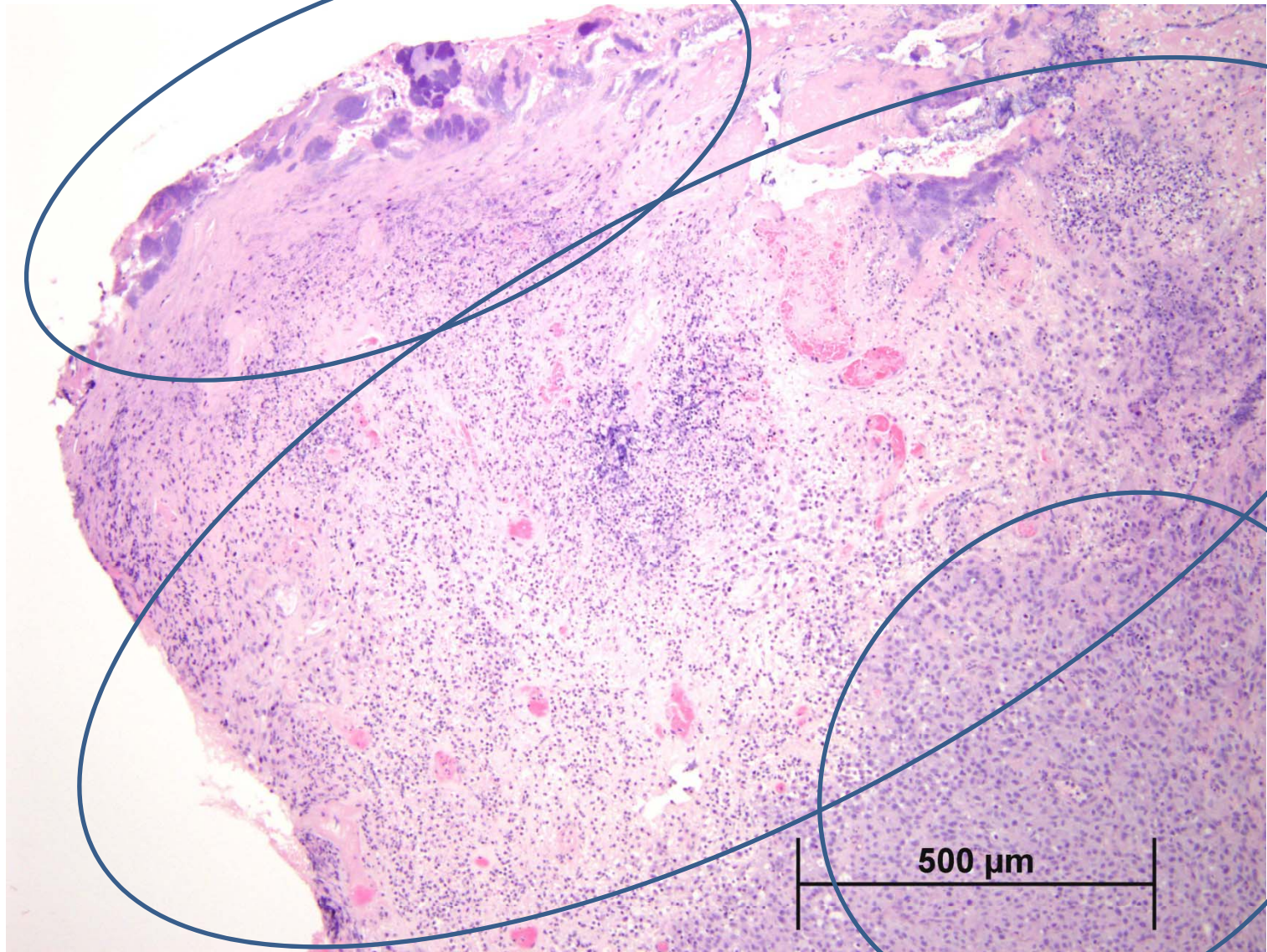


HISTOPATHOLOGY

H&E – Incisional Biopsy



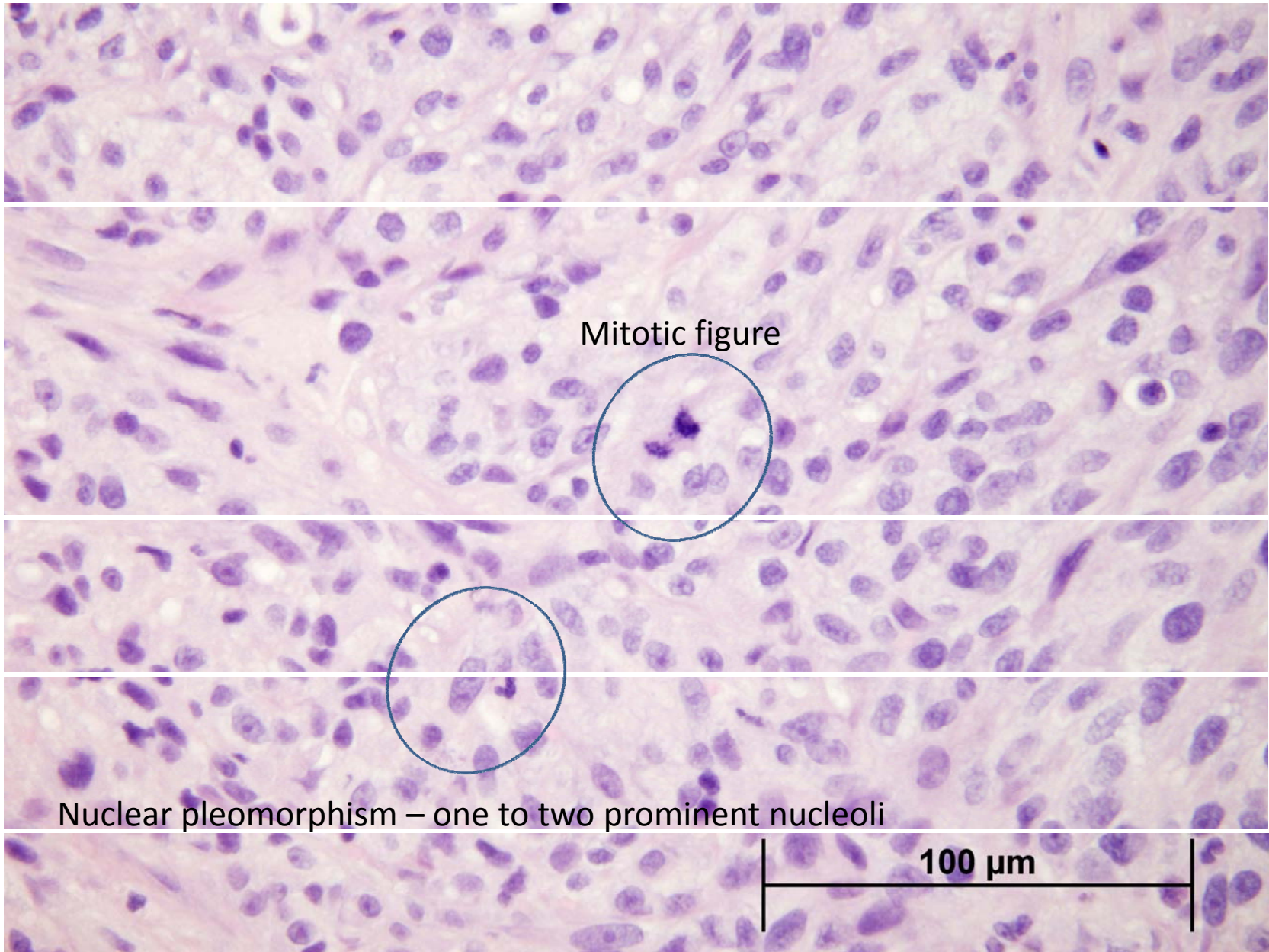
Bacterial colonies along necrotic surface



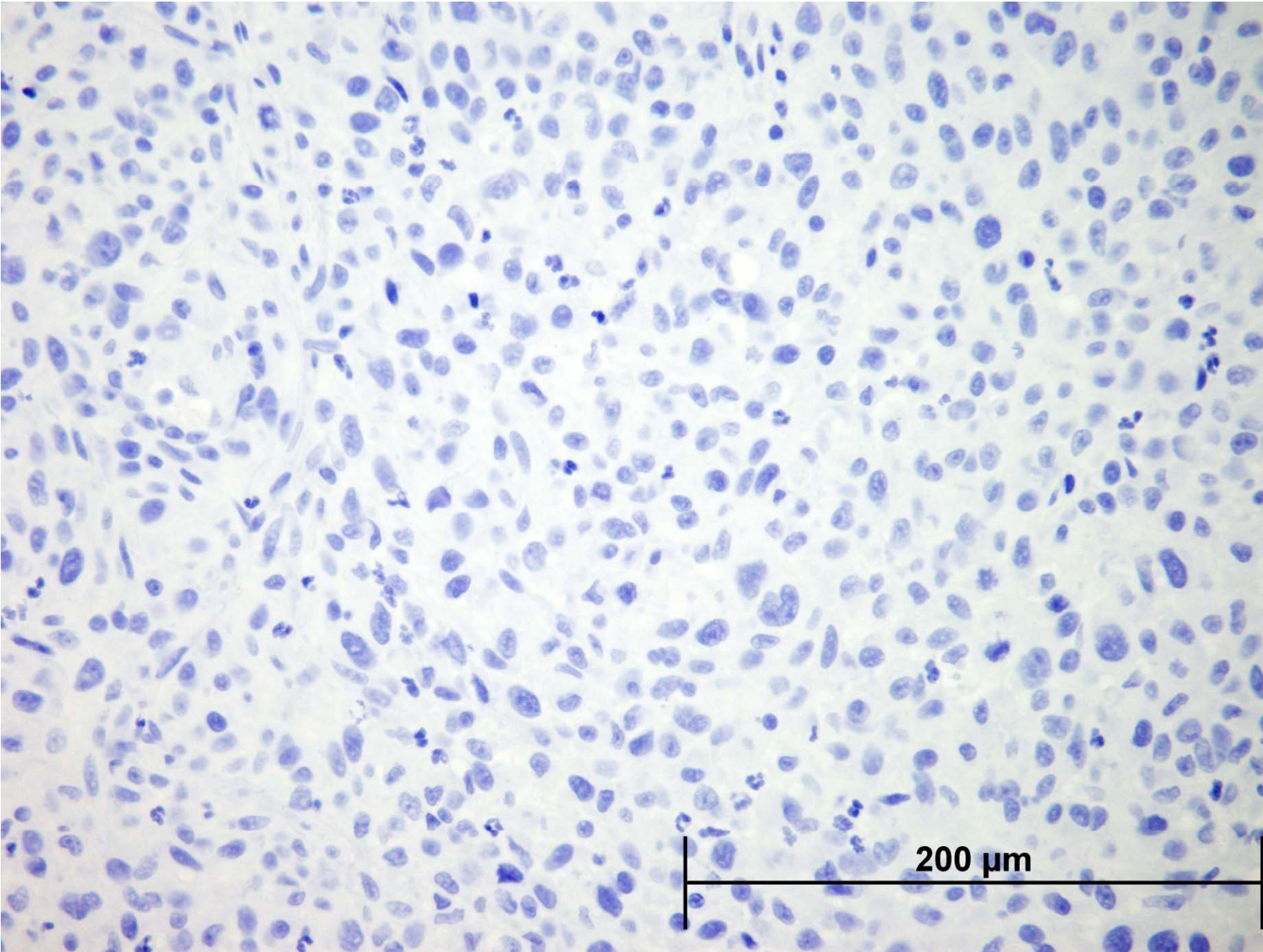
Suppurative inflammation (neutrophils mostly)

Neoplasm

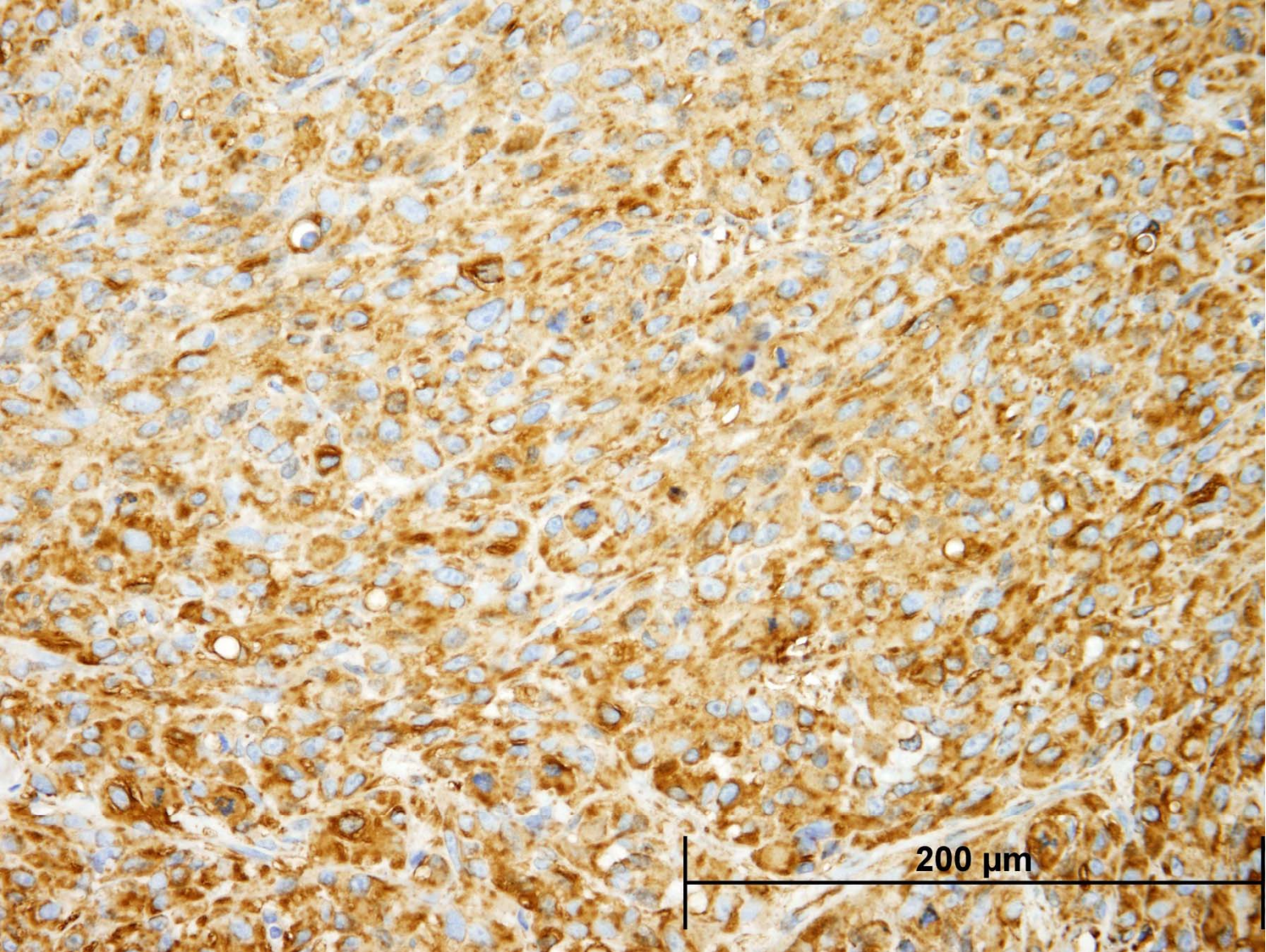
Polygonal tumor cells arranged in small packets



Melan A negative

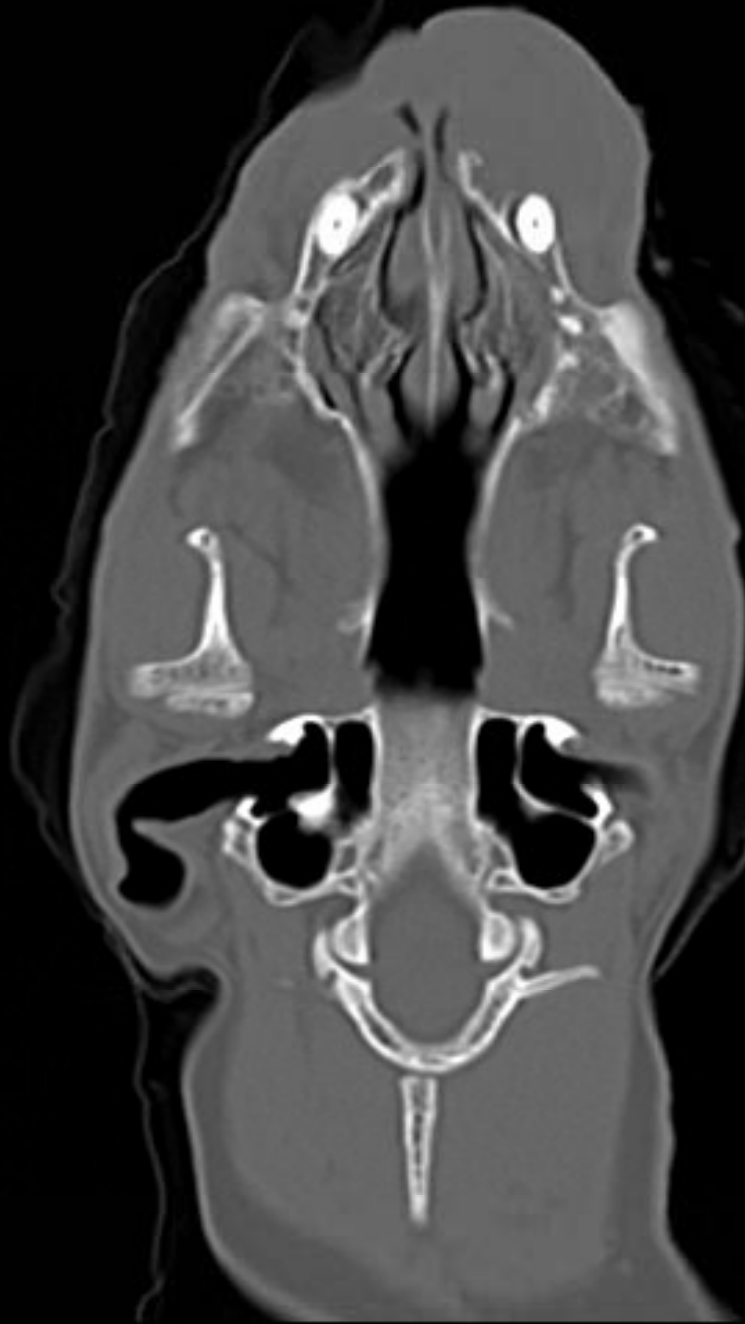


Vimentin positive

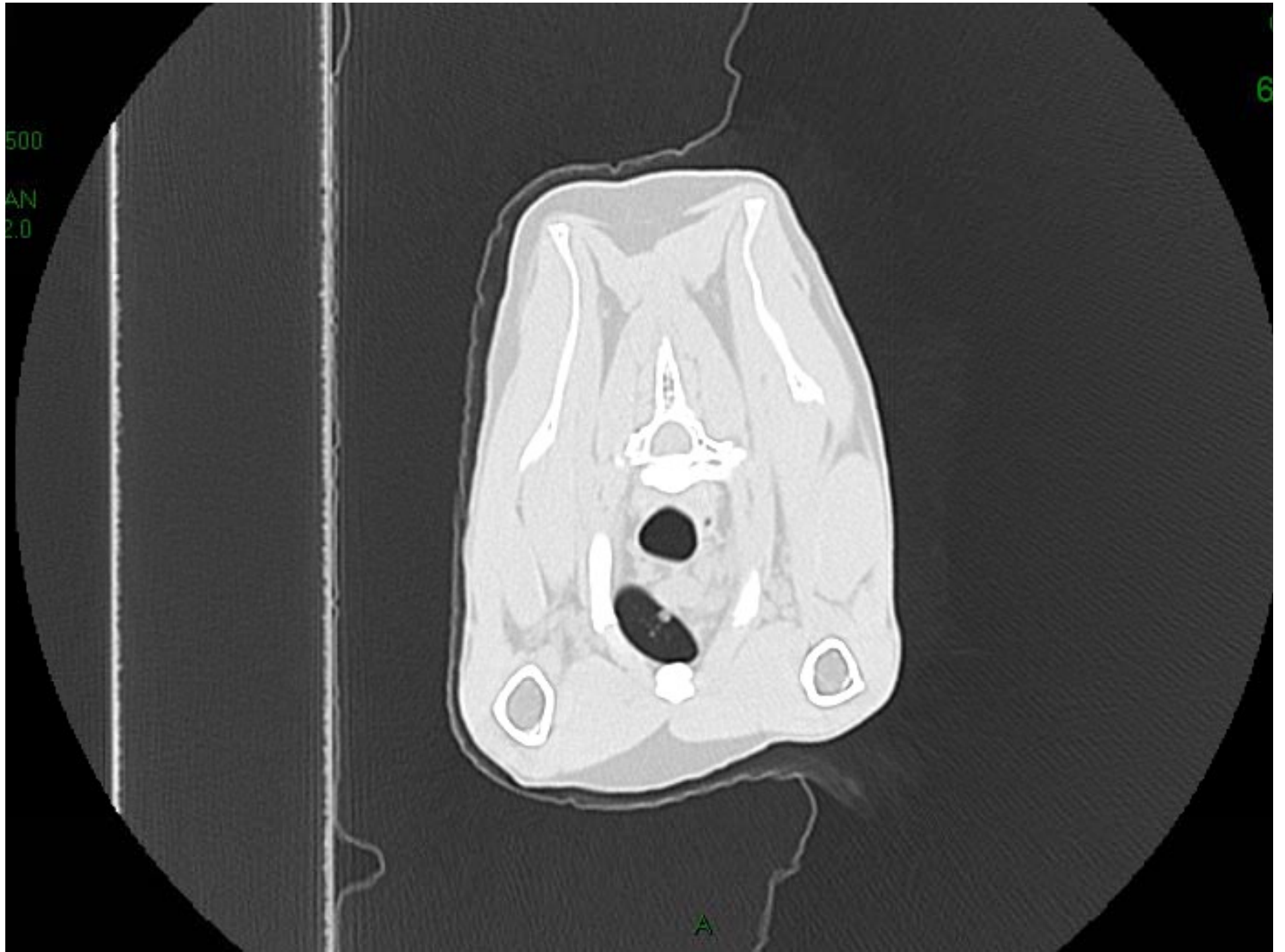


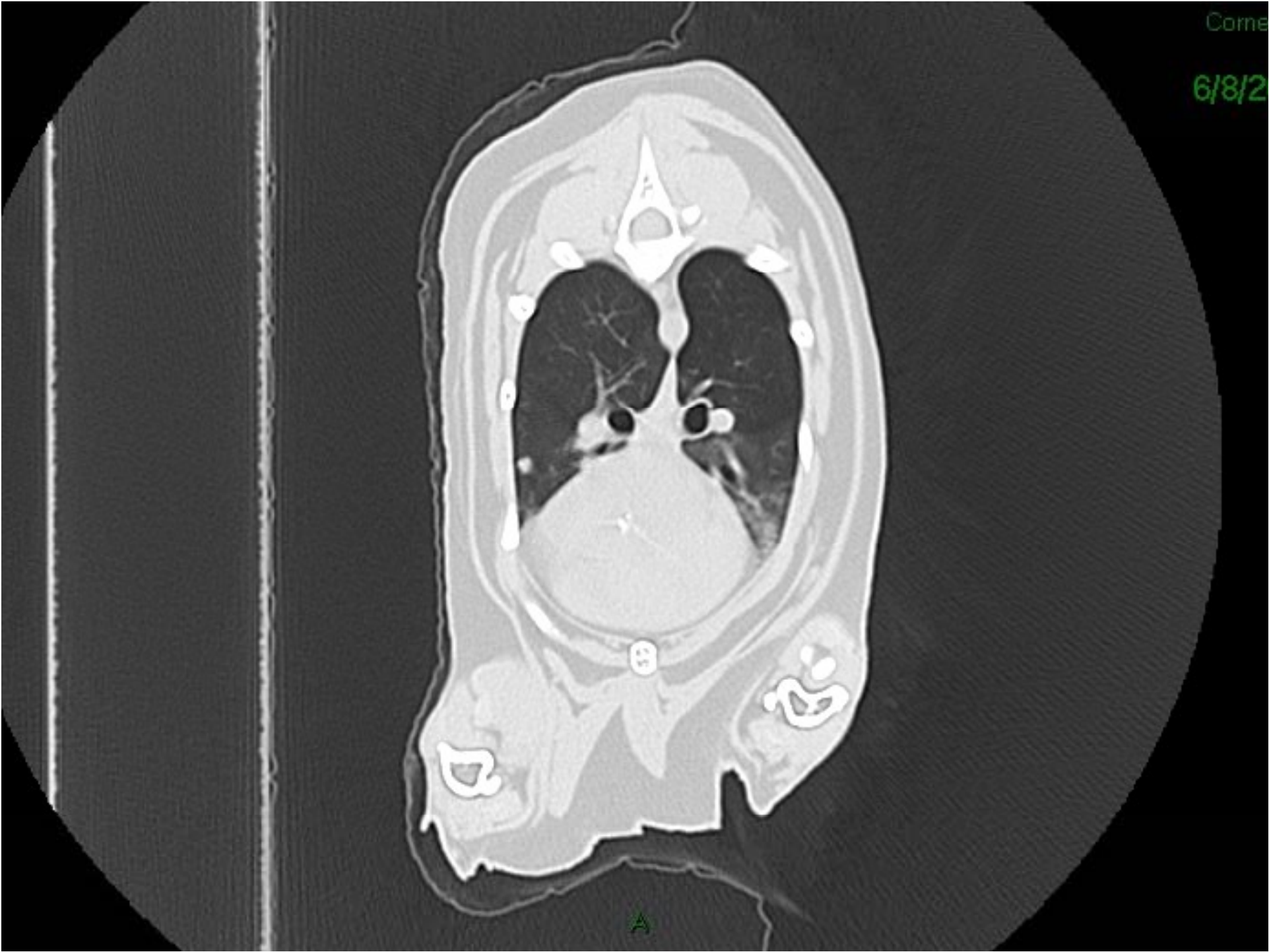
CT – HEAD, NECK, THORAX

AMIAN
10374
m
9-352-1500
HFDR
RT PLAN
Bone 2.0 Coronal.1



IP





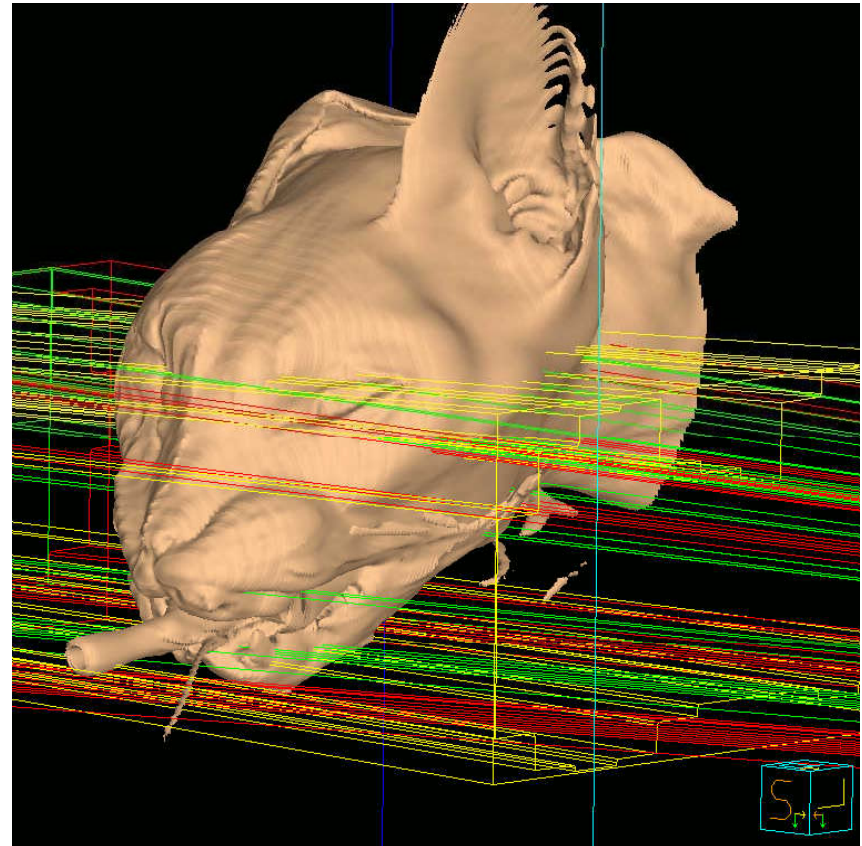
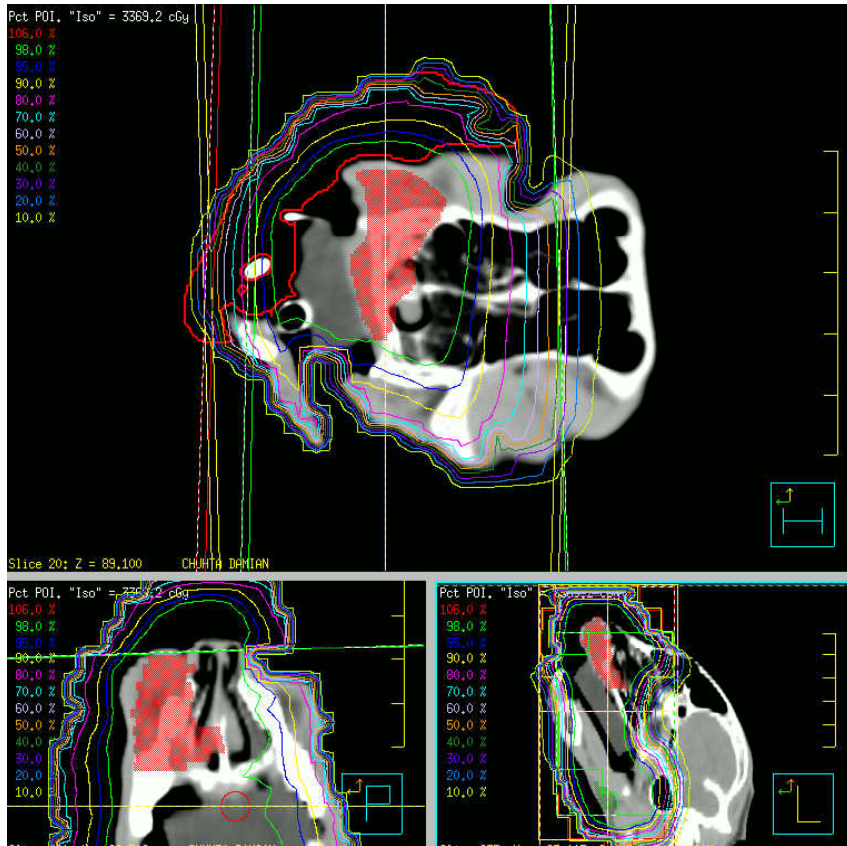
Prognosis

- Poor
 - Metastatic disease present
 - Pulmonary nodules
 - Lymphadenopathy
 - Bony lysis
- Median survival of <60 days without therapy
 - Local therapy for pain control
 - Systemic therapy for metastatic disease

Therapeutic Options

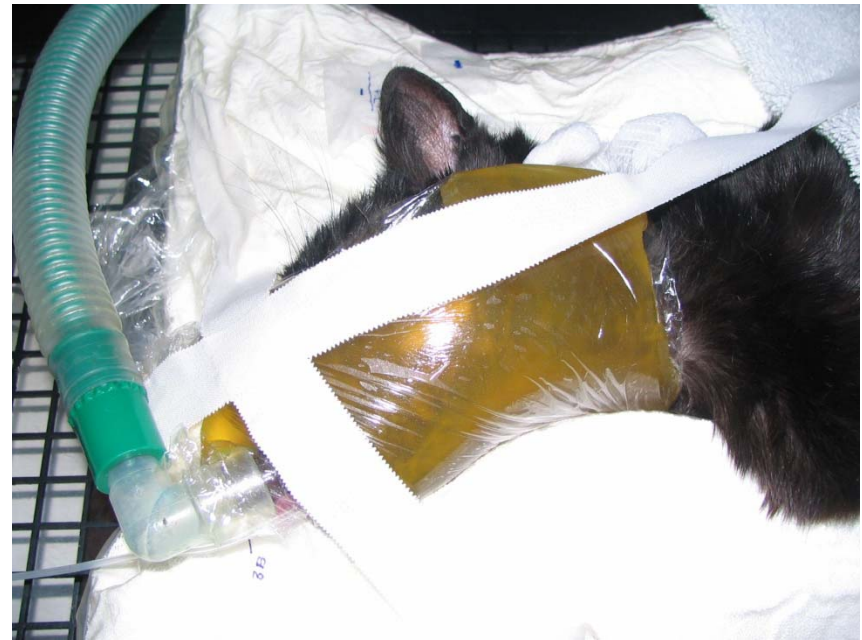
- Surgical resection
 - Treatment of choice
 - Metastatic disease typically occurs despite complete resection
- Radiation therapy
 - Local tumor and pain control
 - Palliative treatment
- Chemotherapy
 - Systemic follow-up
 - Unknown efficacy
- Melanoma vaccine
 - Unknown efficacy

CT/RT Planning



Radiation Therapy

- Palliative intent
- 32 Gy total dose
- 8 Gy per fraction
- Total of 4 weekly fractions
- Parallel opposed fields
- Include draining lymph node
- Light general anesthesia



Days 0 and 7



Stable disease – neither partial remission nor progressive disease

Days 14 and 21



Partial remission - $>30\%$ decrease in the sum of the longest diameter of target lesion

Follow-Up

- Recovered without complications from repeated anesthetic events
- Returned to normal appetite and activity, comfortable at home
- Aggressive re-growth described three months later – euthanized for declining quality of life
- Owner grateful for the additional time

References

- [Farrelly J, Denman DL, Hohenhaus AE, Patnaik AK, Bergman PJ](#). 2004 Jan-Feb;45(1):91-3. Hypofractionated radiation therapy of oral melanoma in five cats. [Vet Radiol Ultrasound](#).
- Luna LD, Higginbotham ML, Henry CJ, Turnquist SE, Moore AS, Graham JC. Feline non-ocular melanoma: a retrospective study of 23 cases (1991-1999) *J Feline Med Surg*. 2000 1, 173-181.
- [Moore A](#). Treatment choices for oral cancer in cats. What is possible? What is reasonable? [J Feline Med Surg](#). 2009 Jan;11(1):23-31.
- [Patnaik AK and Mooney S. Feline Melanoma: A comparative study of Ocular, Oral, and Dermal Neoplasms. Vet Pathol 1988 25:105.](#)
- <http://www.vin.com/Members/Proceedings/Proceedings.plx?CID=MEDFAQ&Category=1872&PID=14993&O=VIN>
- Medical Records, Cornell University Hospital for Animals