

Equine Sarcoids & Melanomas



Vet Med 517

Presentation by

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● Definition

● Signalment

● Risk Factors

● Treatment

● Pathophysiology

● Signs

● Differential Diagnosis

● Miscellaneous

● Systems Affected

● Causes

● Laboratory Tests

● References

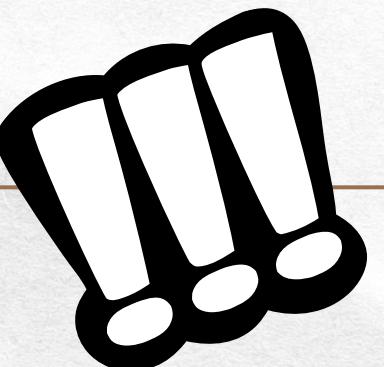


Table of Content

Definition

Equine Sarcoids are the most frequently recognized skin tumors in horses, representing about 40% of all equine tumors. They are locally invasive, fibroblastic skin neoplasms associated with **bovine papillomavirus (BPV)**.



Definition

Equine Melanomas are dark-pigmented skin tumors arising from melanocytes. In horses, they may be benign or malignant. They are particularly common in gray horses and tend to occur under or within the skin as black nodules.



Pathophysiology

Sarcoids

- Caused by **bovine papillomavirus (BPV) infection** transmitted by biting flies.
- The virus infects dermal fibroblasts at sites of previous injury or scarring.
- This leads to uncontrolled fibroblast proliferation, forming fibrous, wart-like, or ulcerated growths.
- Sarcoids are locally destructive and invasive but do not metastasize to distant organs.
- Recurrence is common following incomplete removal due to residual viral-infected cells.

Pathophysiology

Melanomas

- Develop due to **melanocyte proliferation and excessive melanin pigment formation**.
- Gray horses are genetically predisposed due to the gray coat color gene, which promotes abnormal melanocyte growth.
- Tumors may remain benign but can transform into malignant forms that metastasize to internal organs such as the liver and lungs.
- Lesions may enlarge and coalesce, causing obstruction or disfigurement depending on their location.

Systems Affected

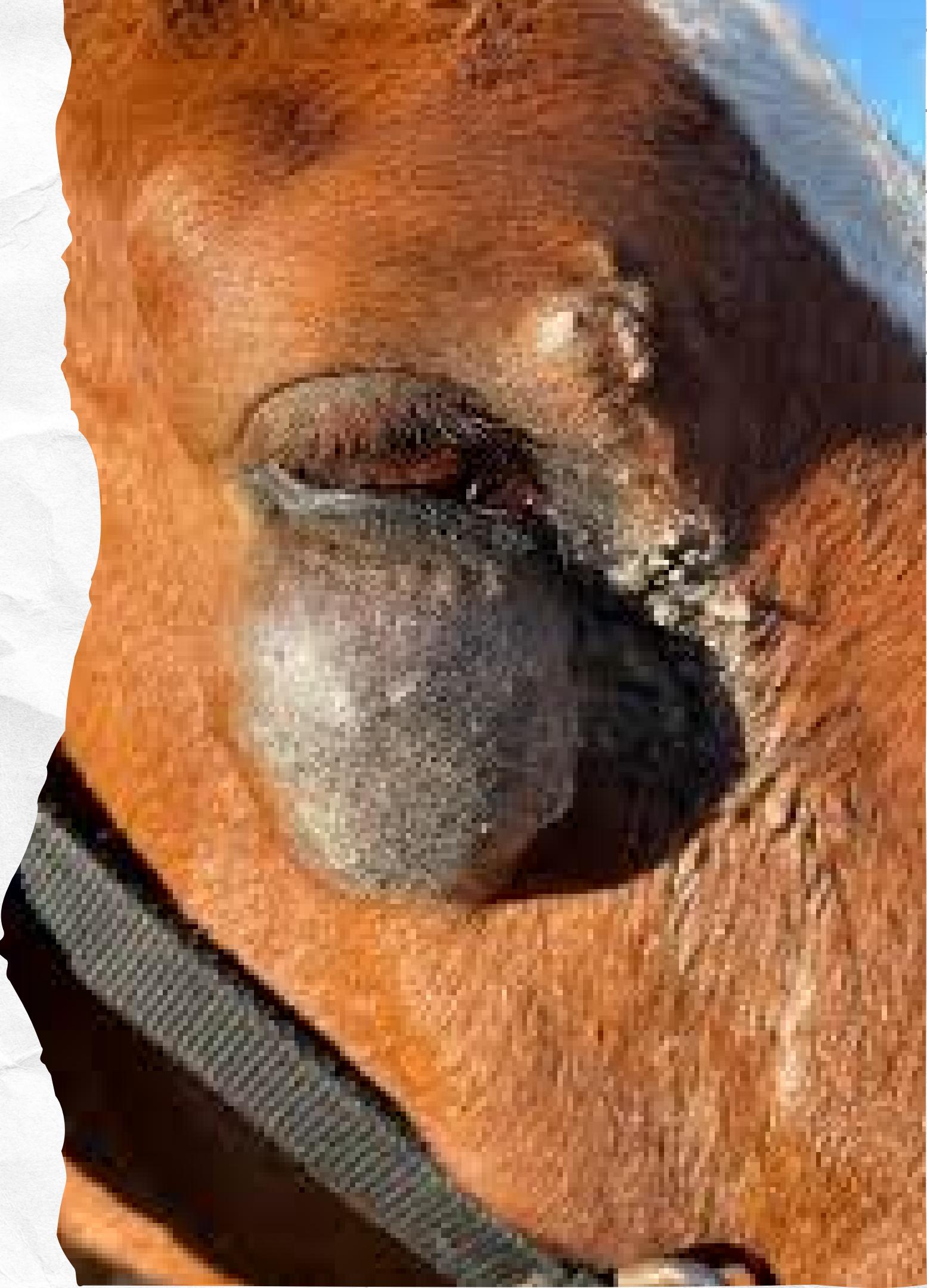


- **Sarcoids:** Integumentary system (skin and subcutaneous tissues).
- **Melanomas:** Primarily integumentary; may involve lymphatic, digestive, and perineal regions when large or metastatic.

Signalment

Sarcoids:

- Commonly affect young horses (average age 3-6 years).
- No specific breed or sex predisposition.
- Frequently seen at previous injury sites or scarring.



Signalment

Melanomas:

- Common in gray or white horses, especially Lipizzaners, Arabians, and Percherons.
- Typically develop in older horses (beginning around 3-4 years and increasing with age).
- Rare in non-gray horses, but when present, they often occur in young horses (<2 years) on the trunk and legs.



Signs



General Comments

Both tumors are slow-growing skin masses that vary in appearance and aggressiveness depending on their form and location.

Historical Findings

- Owners may report one or more firm skin masses that gradually enlarge.
- Sarcoids often arise after trauma or scarring.
- Melanomas often develop slowly but can become numerous over time.

Signs



Physical Examination Findings

Sarcoids:

- Appear as subcutaneous masses in eyelids or canthi (corners of eyes).
- May enlarge rapidly, becoming red, fleshy, ulcerated, and invasive.
- Occur on trunk, inner thighs, face, and periocular areas.
- Classified into occult, verrucose, nodular, fibroblastic, mixed, and malignant types.



Signs



Physical Examination Findings

Melanomas:

- Appear as dark black nodules under or within the skin.
- Commonly located at perineum, base of tail, parotid region, and occasionally ears.
- May be solitary or multiple, forming coalescing plaques.
- Larger tumors can obstruct defecation or interfere with normal function.

Causes

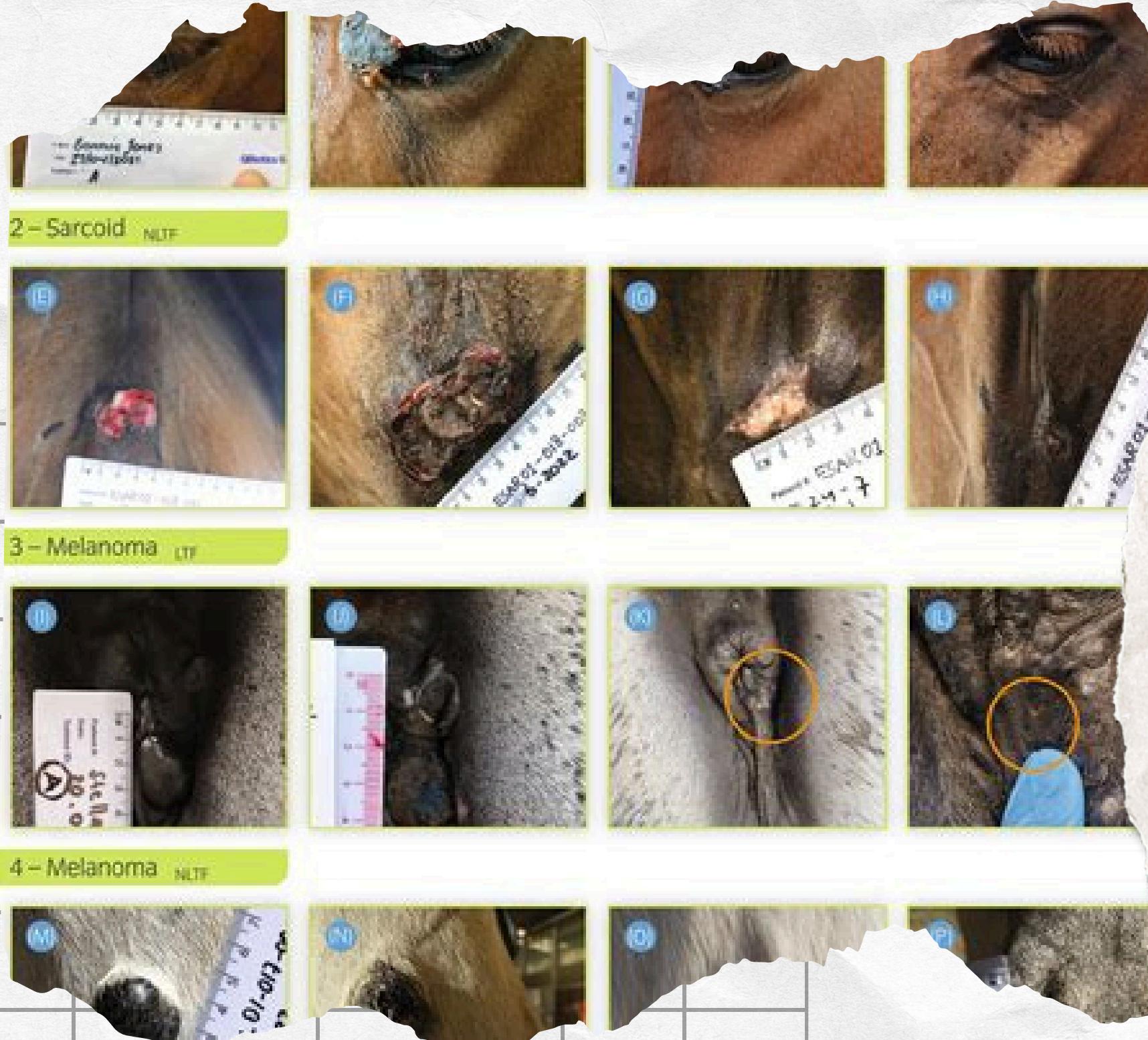
- **Sarcoids:** Infection with bovine papillomavirus (BPV) transmitted by biting flies or via wounds.
- **Melanomas:** Genetic predisposition associated with the gray coat color gene; in non-gray horses, cause is sporadic and often congenital.





Risk Factors

- Gray coat color (for melanomas).
- Young age (for sarcoids).
- Biting flies and viral exposure.
- Previous skin injury or scarring.
- Genetic predisposition and immunologic factors.

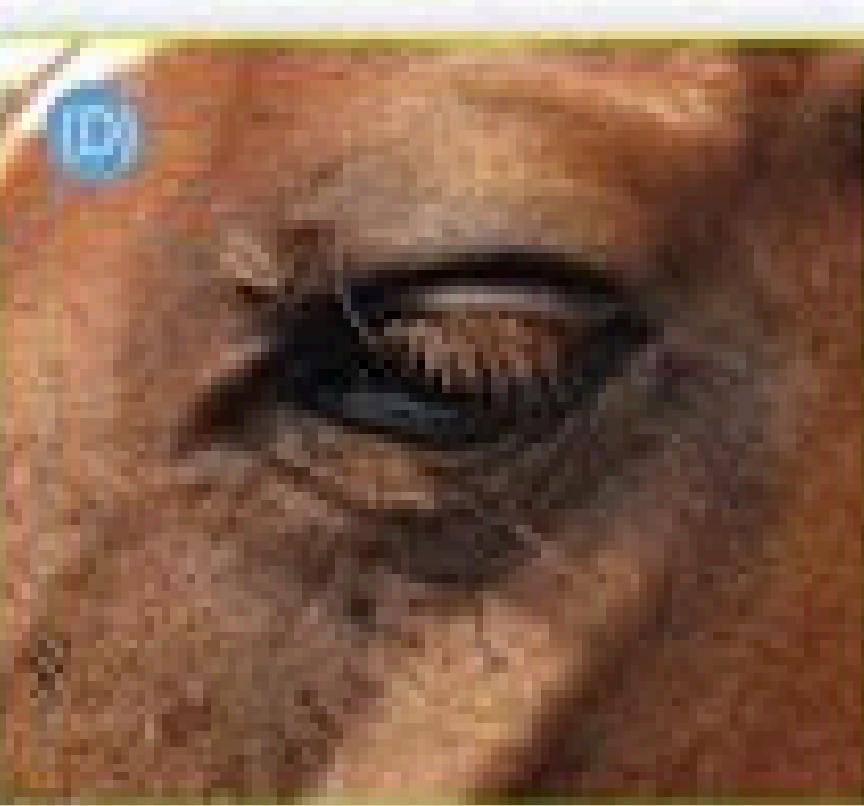
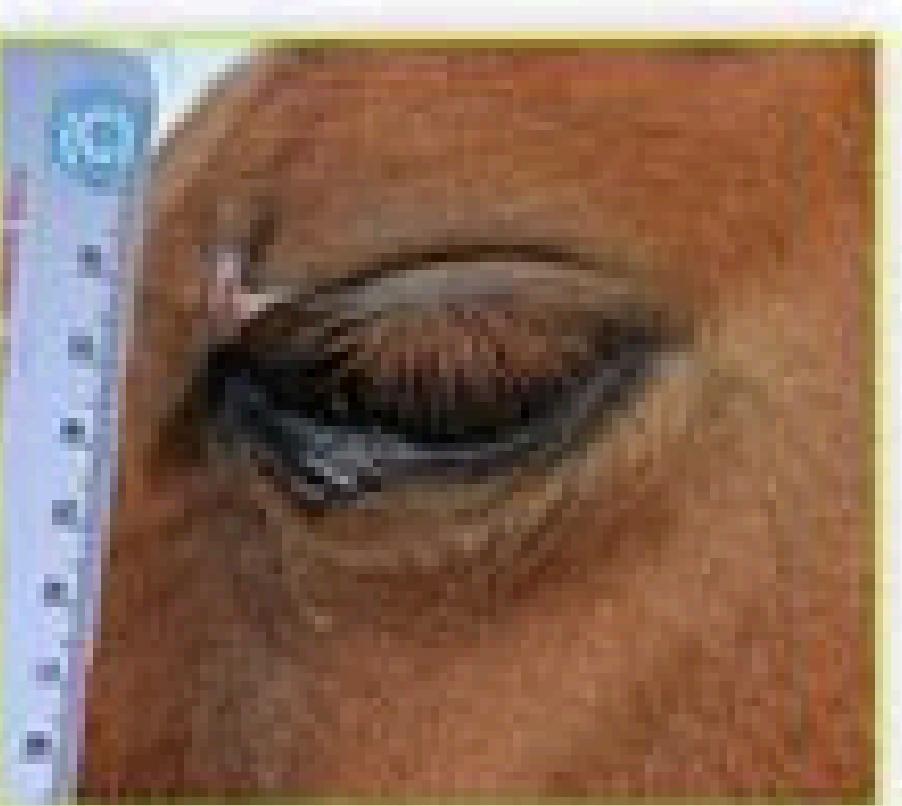
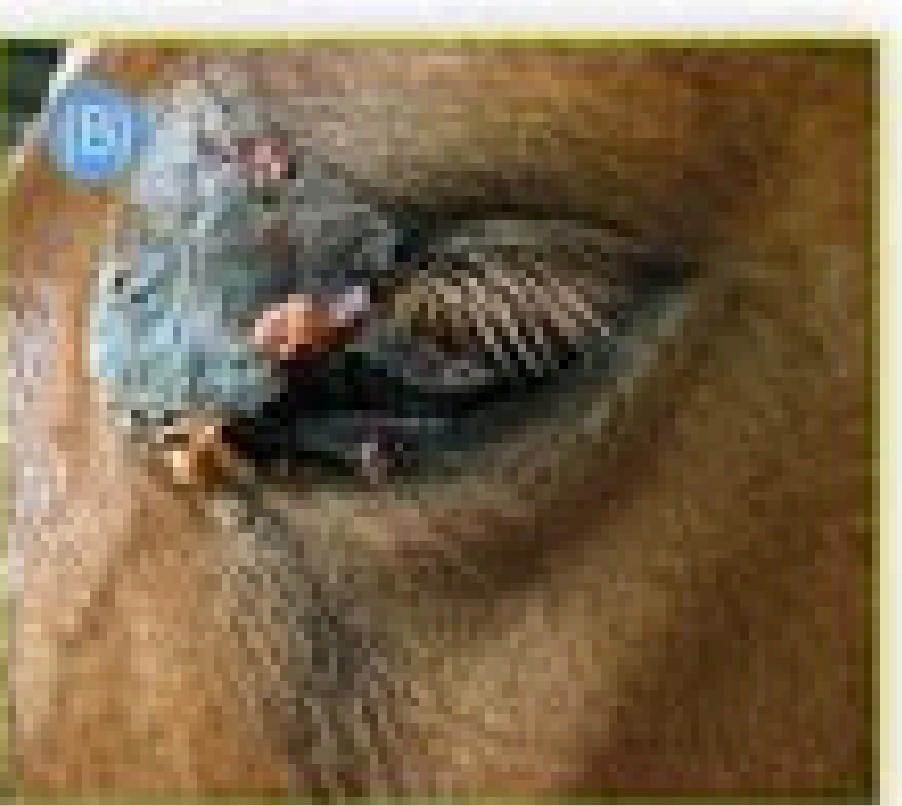


Diagnosis

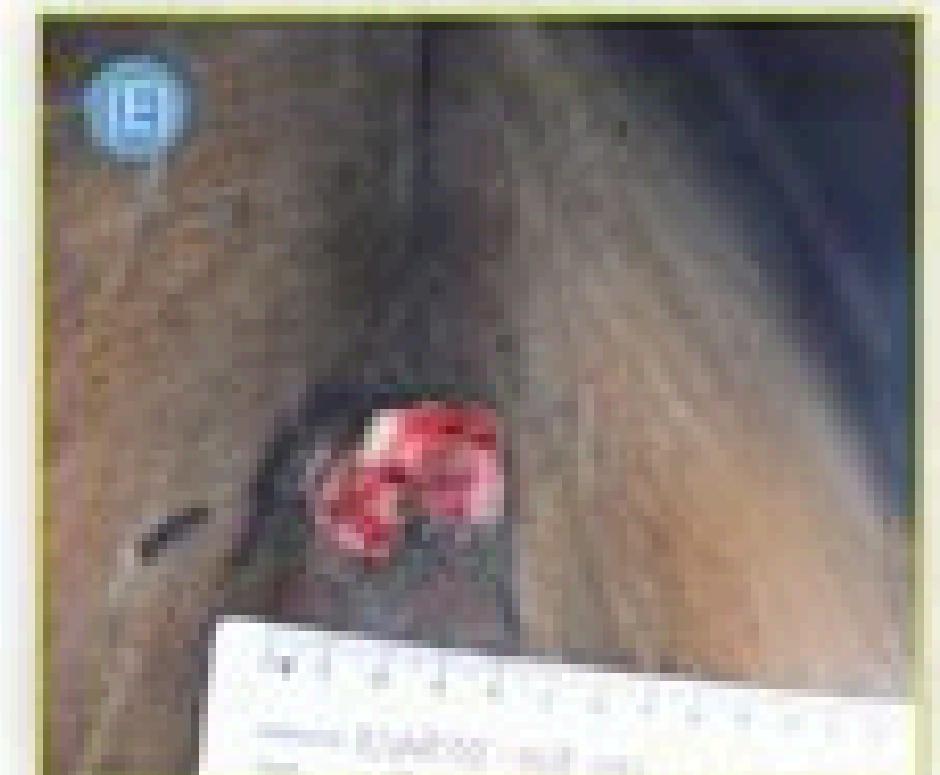
Differential Diagnosis

- **Sarcoids:** Papilloma, squamous cell carcinoma, habronemiasis, fibroma, pythiosis, or granuloma.
- **Melanomas:** Lymphoma, sebaceous adenoma, cyst, abscess, hemangioma.

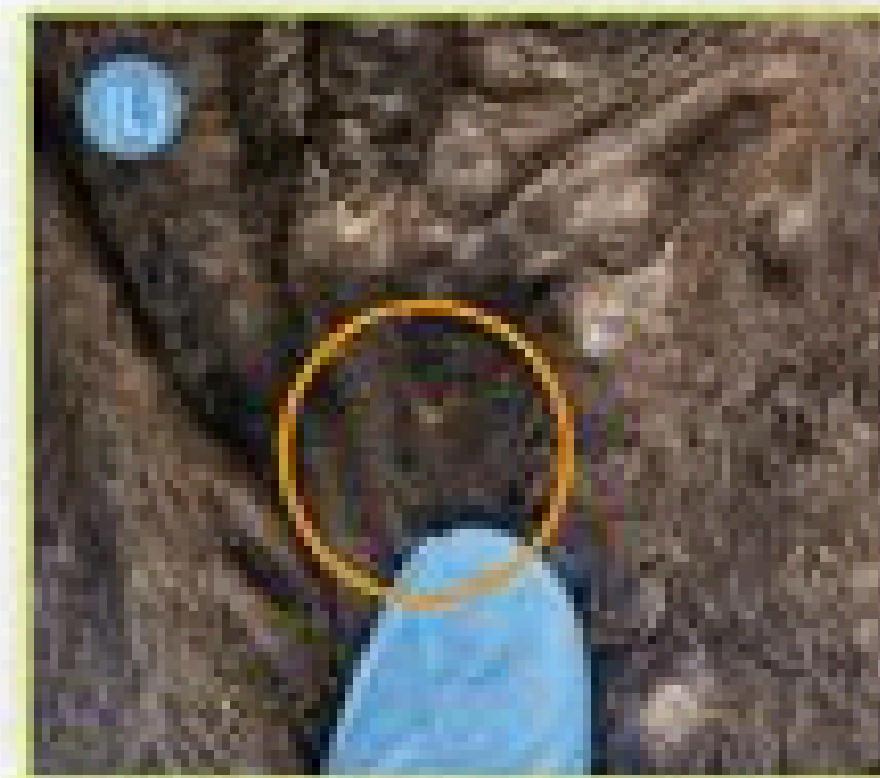
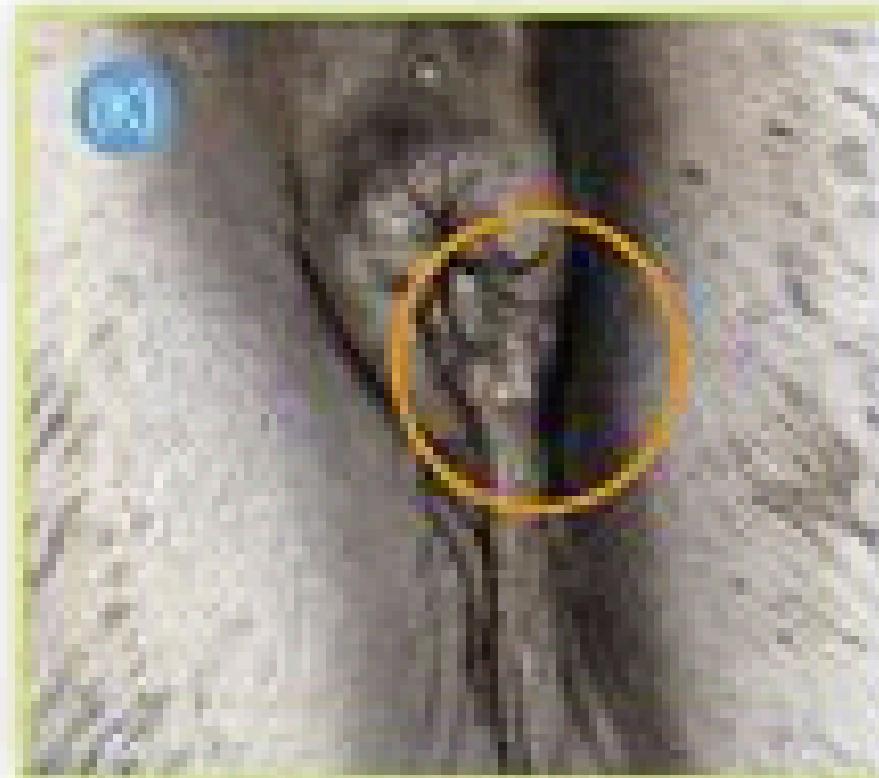
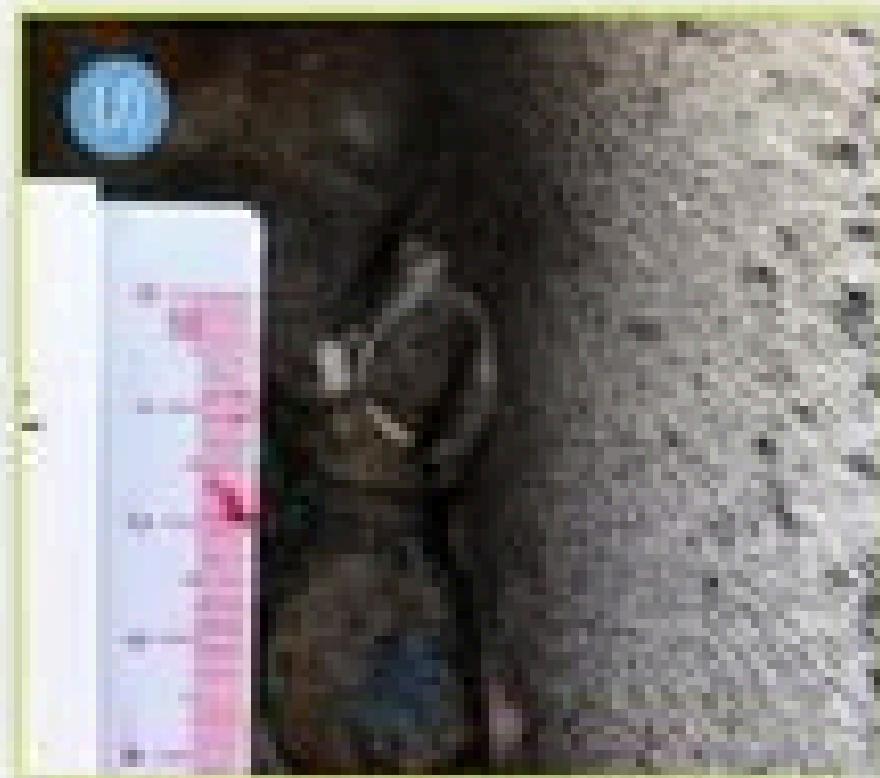
1 - Sarcoid LMP



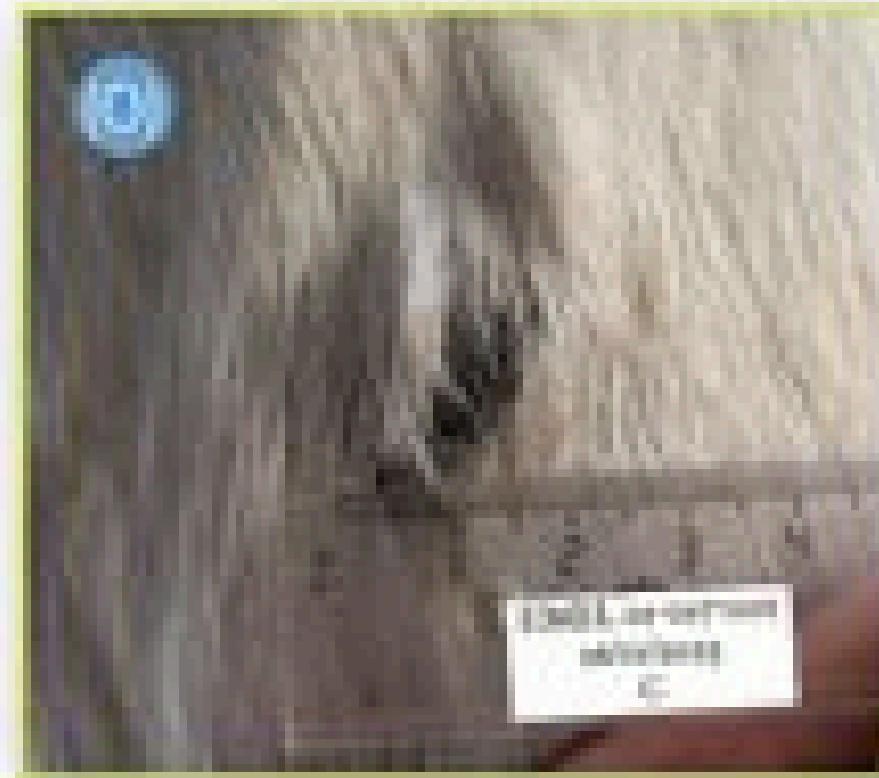
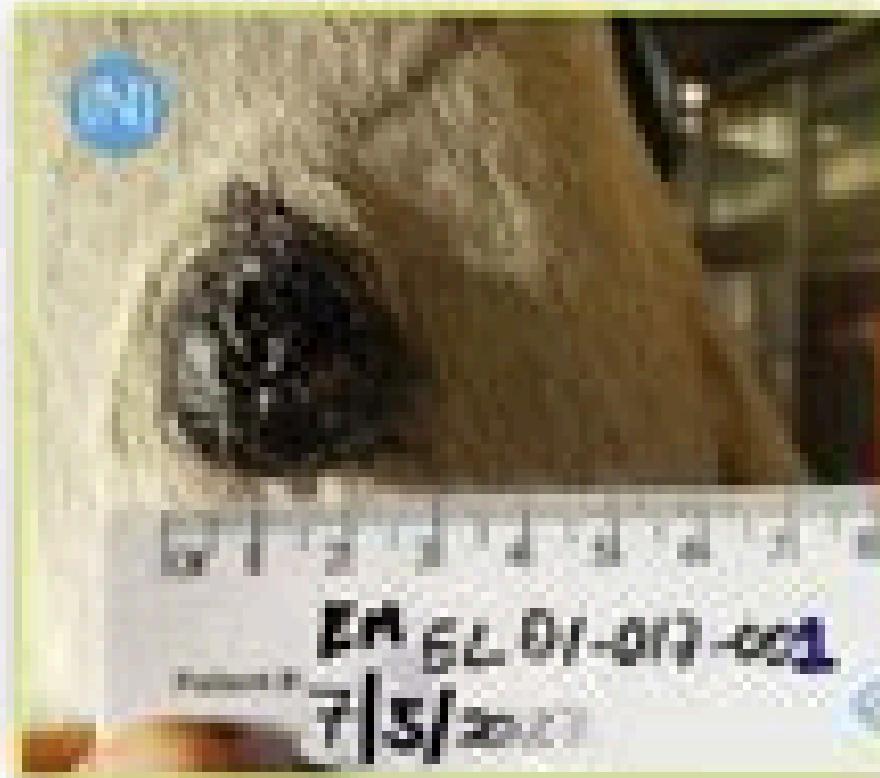
2 - Sarcoid RMP

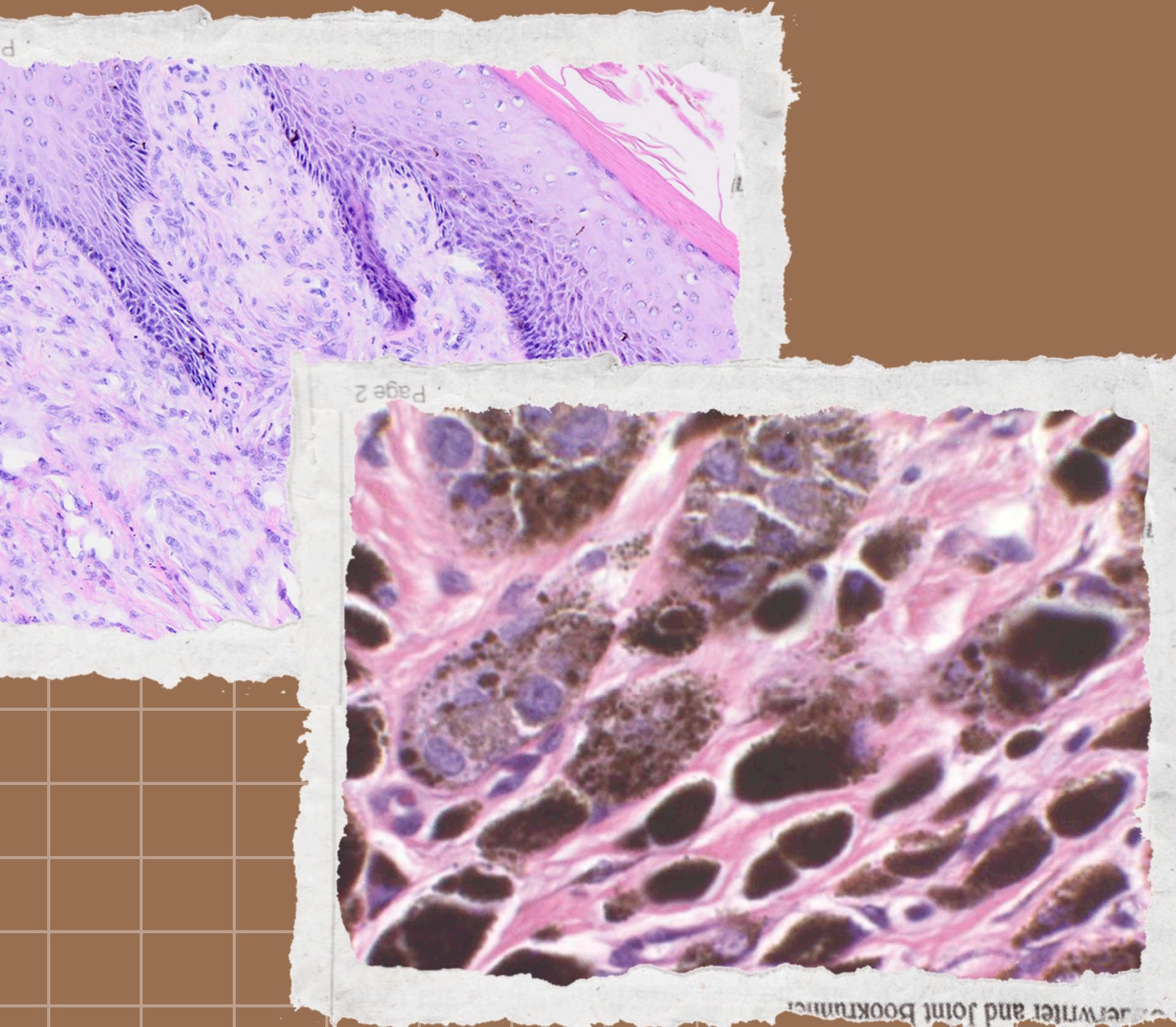


3 – Melanoma



4 – Melanoma





Diagnosis

Laboratory Tests

- **Histopathologic examination** (gold standard):
 - **Sarcoids:** Proliferation of fibroblasts with epidermal hyperplasia; locally invasive pattern.
 - **Melanomas:** Dense pigmented melanocytes within the dermis.
- **PCR testing** for BPV DNA in sarcoid tissues can confirm viral etiology.



Diagnosis

Other Laboratory Tests

- Fine-needle aspiration or biopsy (diagnostic, but incomplete biopsy may worsen sarcoids).
- Cytologic examination for melanin pigment and cell morphology.



Diagnosis

Imaging

- **Ultrasonography:** Determines tumor margins and depth of infiltration.
- **CT or MRI:** Useful for deeper or periocular lesions and internal metastases.
- **Radiography:** Assesses bone involvement near affected regions.

Treatment

- **Surgical Excision:**
 - Preferred for both sarcoids and melanomas if complete margins can be achieved.
 - Recurrence common for sarcoids if incomplete removal.
- **Cryotherapy (Freezing):**
 - Effective for small or superficial sarcoids and melanomas.
- **Laser Surgery:**
 - Minimizes bleeding and recurrence, especially in periocular areas.
- **Chemotherapy:**
 - Local chemotherapy using cisplatin or other agents can be effective for both tumors.

Treatment

- **Radiation Therapy:**
 - Gamma radiation (using iridium-192) highly successful for sarcoids and melanomas that cannot be surgically removed.
- **Immunotherapy:**
 - **BCG (Bacille Calmette-Guérin) injections stimulate the immune response in sarcoids with approximately 70% success rate.**
- **Hyperthermia and Photodynamic Therapy:**
 - **Can be used as adjuncts for difficult-to-treat sarcoids.**
- **Observation:**
 - **Small, stable melanomas may not require treatment but must be monitored.**

Medications

Drugs of Choice

- **Sarcoids:**
 - BCG vaccine (immunotherapy).
 - Cisplatin or 5-fluorouracil for local chemotherapy.
 - Radiation therapy using iridium-192 when surgery is not possible.
- **Melanomas:**
 - Surgical excision or cryotherapy as mainstays.
 - Limited data on chemotherapeutic or radiation effectiveness.

Medications

Contraindications

- Avoid incomplete surgical removal of sarcoids (can cause rapid regrowth).
- Avoid chemotherapy or radiation in pregnant mares unless necessary.

Precautions

- Maintain strict asepsis during removal to prevent viral spread (sarcoids).
- Monitor closely after treatment for early signs of recurrence.
- Referral to specialized veterinary oncology services is recommended for large or complex lesions.

Follow-up

Patient Monitoring

- Regular re-examinations every 3-6 months.
- Photographic monitoring of lesion size and progression.
- Palpation of regional lymph nodes for possible metastasis (melanomas).

Possible Complications

- Local recurrence (common in sarcoids).
- Malignant transformation or metastasis (melanomas).
- Cosmetic or functional problems in periocular or perineal regions.
- Secondary infection of ulcerated lesions.



Miscellaneous

Associated Conditions

- **Sarcoids:** Often linked to BPV infection and sites of trauma.
- **Melanomas:** Associated with the gray coat gene and age-related pigment accumulation.



Miscellaneous

Age-Related Factors

- **Sarcoids:** Common in young horses (3–6 years).
- **Melanomas:** Common in older gray horses (≥ 6 years).



Miscellaneous

Zoonotic Potential

- None known. BPV infection in horses is species-specific and does not infect humans.



Miscellaneous

Pregnancy/Fertility/Breeding

- Generally no direct effect on fertility or gestation.
- Treatment involving chemotherapy or radiation should be postponed until after foaling.



Miscellaneous

Synonyms

- **Sarcoids:** Equine fibropapilloma, fibroblastic papilloma.
- **Melanomas:** Melanocytic tumors, melanocarcinoma (if malignant).



Miscellaneous

Abbreviations

- **BPV** – Bovine Papillomavirus
- **BCG** – Bacille Calmette-Guérin
- **CT** – Computed Tomography
- **MRI** – Magnetic Resonance Imaging
- **DNA** – Deoxyribonucleic Acid



Sarcoids & Melanomas

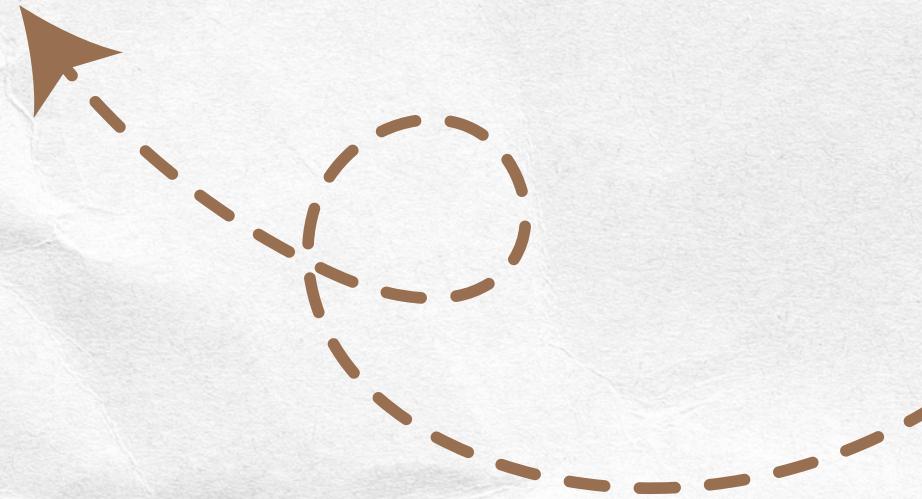
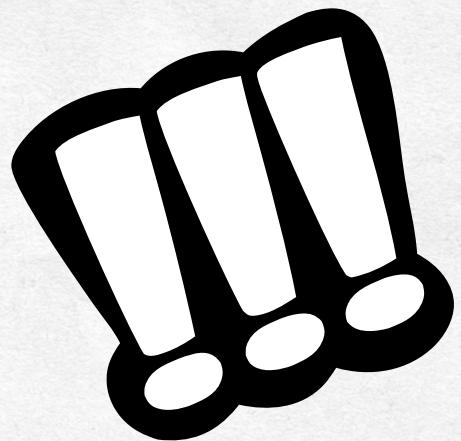
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Updated Veterinary Oncology Notes, 2024.







Thank You So Much!



Vet Med 517 - Equine Medicine

BYE

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Presentation by