

The Laboratory Hamster

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Many thanks to these individuals for their extensive previous work in compiling this material:

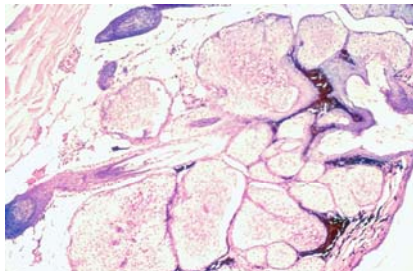
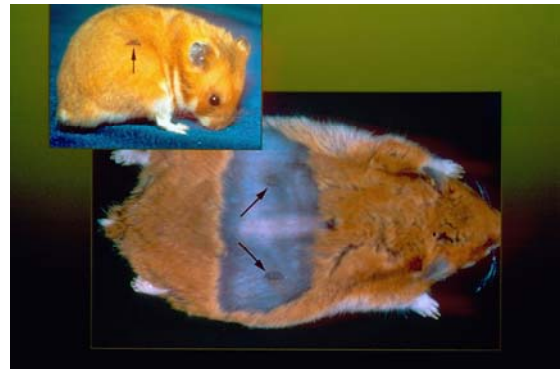
Dr. Diane Forsythe
Dr. Mary Grant
Dr. Marti Hanes

Disclaimer

- Not ACLAM-sanctioned
- No specific knowledge of material on the 2009 ACLAM exam



Hamster scent glands (flank organs)



Hamster flank glands have the following features:

- Consist of sebaceous glands, pigment cells, and terminal hair
- Darkly pigmented in males
- In males, appear to play a role in converting testosterone to dihydrotestosterone

Hamster flank glands





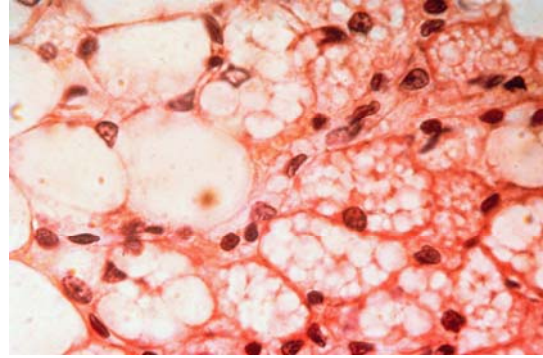
Hamster buccal "cheek" pouches have historically been used as "immunologically privileged" sites for xenografts. This has been supplanted by the nude mouse.



Postovulatory discharge at the end of estrus.



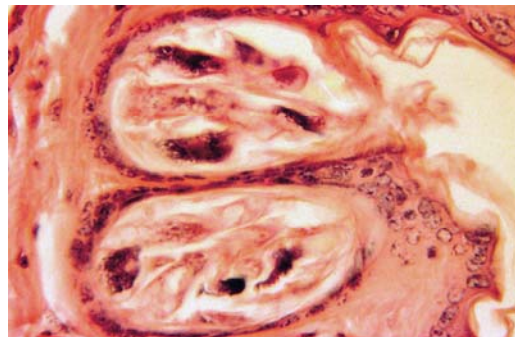
Where is brown fat most likely to be found in hamsters?



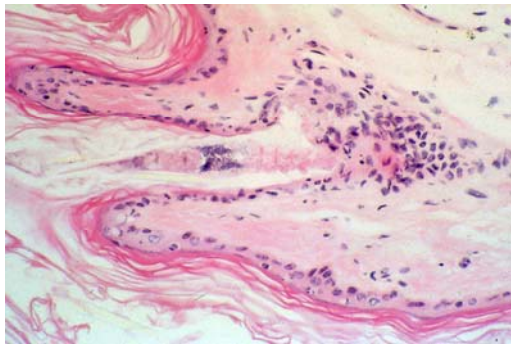
Hamster with a sparse haircoat



Differential diagnoses?



Demodex criceti. Adults found in the epidermal pits, not in the follicle.



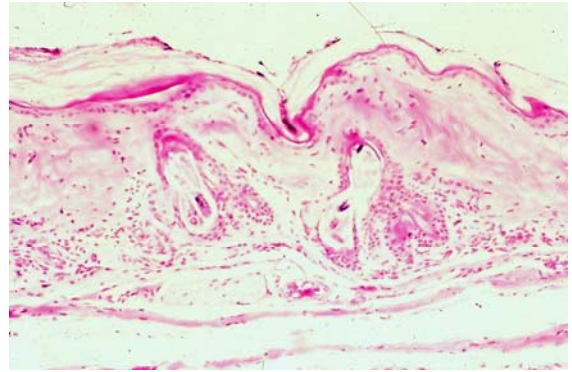
Demodex criceti



Demodex aurati



Demodex aurati found in the hair follicle, in contrast to *D. criceti*



Hamsters exhibiting diarrhea, with perianal fecal soiling



Markedly enlarged small intestine



Markedly enlarged ilei from hamsters. Most likely etiology?



Lawsonia intracellularis

- Agent implicated in proliferative ileitis of hamsters
- Intracellular forms are found in apical cytoplasm of hyperplastic ileal enterocytes
- Similar lesions recognized to occur in
 - Rabbits
 - Mice
 - Rats
 - Guinea pigs

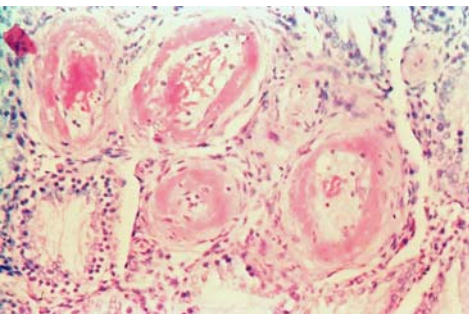
Lawsonia intracellularis

- Epizootics usually seen in younger animals, esp. post-weaning
 - Morbidity/mortality may be 60-90%
 - Clinical signs: lethargy, unkempt haircoat, anorexia, weight loss, diarrhea, dehydration
- Hamsters usually resistant to experimental disease by 10-12 weeks of age
- Diagnosed by gross & histologic lesions. Organisms on in apical cytoplasm of ileal mucosal cells will stain with Warthin-Starry silver stains

Suckling and weaning animals in a colony of Syrian hamsters presented with domed calvaria, a potbellied appearance, high mortality, and marked discoloration, malformation, and/or absence of the incisor teeth.



Other lesions were noted, including testicular atrophy.



What is your most likely etiologic diagnosis?

The recently recognized hamster parvovirus is most closely related to what other rodent parvovirus?

- A. KRV
- B. MVM
- C. MPV-1
- D. H-1
- E. LuIII

Young hamster euthanized due to poor body condition. What is the most obvious gross lesion?



What is the etiologic agent which causes epizootics of lymphoma in young hamsters?

- a. Lymphocytic choriomeningitis virus (LCMV)
- b. Pneumonia virus of mice
- c. Hamster Parvovirus (HaPV)
- d. Hamster Papovavirus (HaPV)
- e. Mouse adenovirus MAdV-2 (K87)



True/False: The etiologic agent which causes these lymphoid tumors can be visualized by electron microscopy.

In a recently-published study evaluating lipoproteins in hamsters fed several high-carbohydrate diets, animals fed a high-fructose diet showed increases in all of the following parameters EXCEPT:

- a. Very-low-density lipoprotein (VLDL) – triglyceride
- b. Apolipoprotein B
- c. Free cholesterol
- d. Phospholipid

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