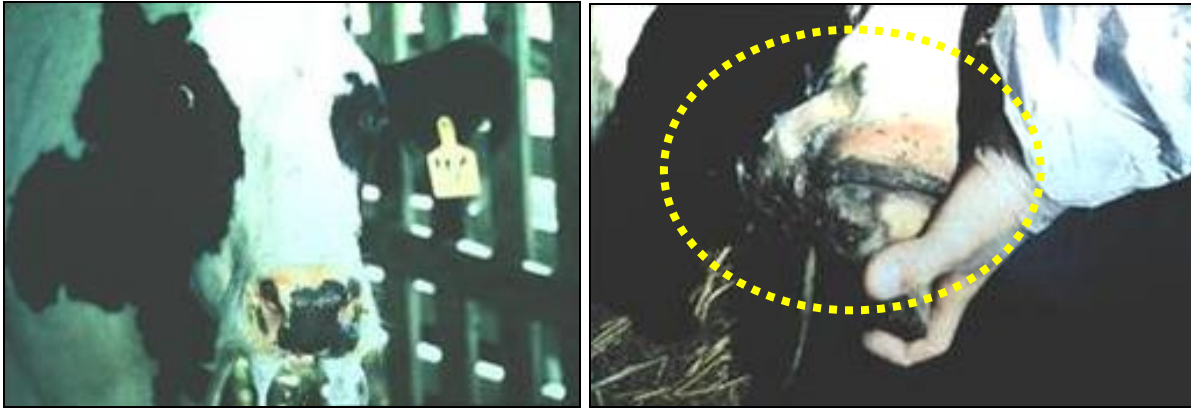


Vesicular Stomatitis (VS)

Extended version

Classic case: Herd or group outbreaks of vesicular lesions, usually cattle AND horses; occasionally swine, camelids **REPORTABLE**



Early lesions caused by vesicular stomatitis –salivation, hyperemia;
Images courtesy of the Animal and Plant Health Inspection Service (APHIS)

Presentation:

- Occurs seasonally in warm humid areas, primarily western hemisphere
 - Mexico, Central America, parts of So. America
 - Southwestern USA – outbreaks every year or two since 1995
 - New Mexico, Colorado, Texas
 - Endemic in feral pigs on Ossabaw Island, GA, USA
- Usually adults older than 1 year
- Cattle and equine most common; swine, South American camelids next
- Sheep and goats somewhat resistant
- Occasional **zoonotic disease** in humans

June 2014 – VS reported in Texas counties located along southern border; See [Info on 2014 outbreaks](#) and [maps](#) from APHIS

Clinical Signs: (C/S) **VERY similar to foot and mouth disease** (FMD)

All species	Equine	Cattle and Pigs
Early signs: Fever Salivation, drooling Discomfort, difficulty eating Rubbing lips, mouth	Often severe Vesicles, ulcers: Mouth, nares Sheath, udder Coronary bands Ventral abdomen	Lesions primarily in one area of body Vesicles, ulcers: Mouth, teats; snout Coronary bands Interdigital spaces
Sheep/Goats Uncommon	Lameness	Lameness (often 1 st C/S in pigs) Secondary mastitis Drop in milk production
Humans – flu-like symptoms - fever, headache, malaise, body aches; sometimes – vesicles mouth/nose		
Vesicles often missed - lesions quickly progress to ulcerated areas with crusty exudate		

DDX:

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VS cannot be distinguished
by clinical signs alone from:

Foot and mouth disease,
Swine vesicular disease (SVD), or
Vesicular exanthema of swine (VE)

Other ruleouts:

Infectious bovine rhinotracheitis
Bluetongue, Rinderpest
Malignant catarrhal fever
Bovine viral diarrhea
Epizootic haemorrhagic disease

Bovine papular stomatitis

Foot rot

Contagious ecthyma

Chemical or thermal burns

Trauma - Plant awns in hay

Phenylbutazone toxicity

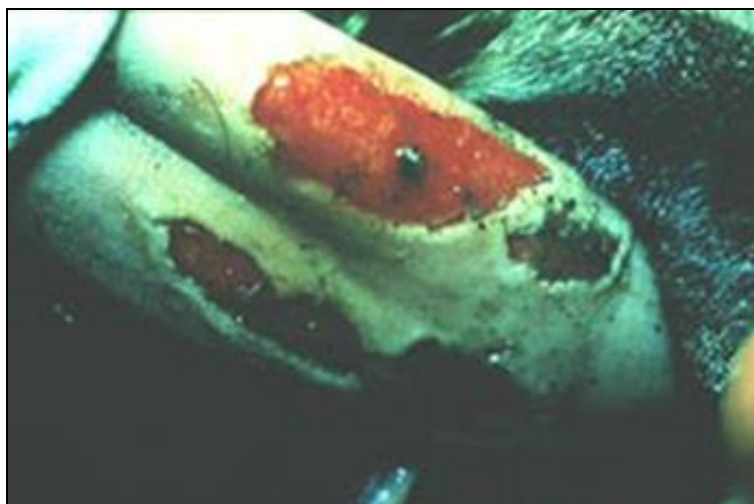
When VS is suspected -

CONTACT VETERINARY SERVICES AND THE STATE VET ASAP!!!

A foreign animal disease diagnostician (FADD) from Veterinary Services often performs or directs diagnostics – most important to differentiate from FMD, SVD, and VE

Test of choice: Identify virus or antibody

- Viral antigen - ELISA, Complement fixation (CF), Virus neutralization (VN)
 - **ELISA most commonly used**
- Virus Isolation – with follow-up testing to determine strain
 - Samples – vesicular fluid, swab of lesion, tags of epithelium
- Serum antibody testing – paired samples
 - ELISA, CF, VN
- PCR – not commonly used
- Samples sent to **APHIS approved labs in secure containers**
- **Take great care to avoid spread of organism**



Older lesions caused by vesicular stomatitis on bovine tongue: eroded, denuded areas with loose epithelial edges;
Image courtesy of APHIS



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Rx of choice:

- Symptomatic care as needed; soft feed, bedding
- Antibiotics if secondary infection; mastitis treatment
- Analgesics if lame or very sore, especially horses

Prognosis:

- Excellent for life and return of function
- Economic losses potentially significant, especially in dairy cattle
- Mortality rare but does occur



Crusty exudative lesions on lips and nostrils are common in horses with VS; Image courtesy of APHIS

Prevention:

- **QUARANTINE** farm:
 - Duration - **3 weeks past healing of LAST affected animal**
 - **Isolate affected animals on farm**
- Proper barrier protection protocols- DVMs wear gloves, change between patients
- **Sanitation, disinfection**
 - Readily killed with common disinfectants
 - Organic debris must be removed; 10 minute contact time
 - Phenols, halogen based - best
 - Quaternary ammonium (Roccal™ 1:200)
 - 2% iodophors, 1% bleach
 - Soda ash, others
- **Insect control/exposure**
 - Avoid turnout during peak insect feeding times
 - Insecticide sprays, sheets, masks, etc
- Do not purchase animals from affected farms for 3 months post infection
- Vaccines available in some countries for outbreaks

Pearls: LOOKS just like FMD!

VS is caused by a virus;

Family **Rhabdoviridae**, genus *Vesiculovirus*
Incubation period 2-8 days; recovery 2 wks

Two serotypes:

New Jersey (NJ) and Indiana (IND)
3 subtypes of IND, 1,2,3

Morbidity – variable, often 10-20%, rarely up to 90%; herd often 100% antibody positive

Transmission - **seasonal occurrence** suggests arthropod vectors important

Insect bites

Black fly (*Simuliidae* spp)

Sand fly (*Lutzomyia* spp)

Mosquito (*Aedes* spp)

Direct contact

Saliva, vesicular fluid, affected epithelium, exudates

Contaminated fomites – including DVM hands!

Aerosol transmission has occurred in laboratory; **Zoonotic** - humans in close contact



Vesicular Stomatitis (VS)

Extended version

LINKS WORTH A LOOK:

[Vesicular Stomatitis](#) from APHIS, United States Department of Agriculture (USDA)

[VS Information and images](#) - Colorado State University Extension Service

[Vesicular stomatitis images](#) and a [powerpoint presentation](#) - Center for Food Security and Public Health, Iowa State University

[Vesicular Stomatitis](#) from the OIE, the World Organization for Animal Health

Refs: Divers & Peek, Diseases of Dairy Cattle, 2nd ed., pp. 244-5, 355-6, Pasquini Guide to Bovine Clinics 4th ed., pp. 11, 186, Wilson Clin Vet Advisor: The Horse, pp. 646-7, and [Vesicular Stomatitis](#), Merck Veterinary Manual 10th Ed. online, and the above links.

My Notes: