

Tetanus (*Clostridium tetani*)

Extended Version

Classic case: Sawhorse stance, risus sardonicus (rictus smile, spasmodic grin)
Usually history of a wound, umbilical infection or surgery in past 1-3 weeks.

Presentation:

History:

- Castration or tail docking with contaminated instruments
- Wound or surgery in last 1-3 weeks
- Omphalitis (umbilical infection)
- Postpartum mares

Muscle stiffness

- Usually generalized
- Localized tetanus is possible
 - Usually in **cats**
 - One limb or more limbs
 - Hyperextension

Facial features

- Narrowed palpebral fissures
- **Lips drawn back** (risus sardonicus)
- Forehead wrinkles
- **Ears drawn to top of head** with ear tips pointing toward each other
- Enophthalmos
- **Protruding nictitating membrane** (exaggerated by hand clap or tap on nose)

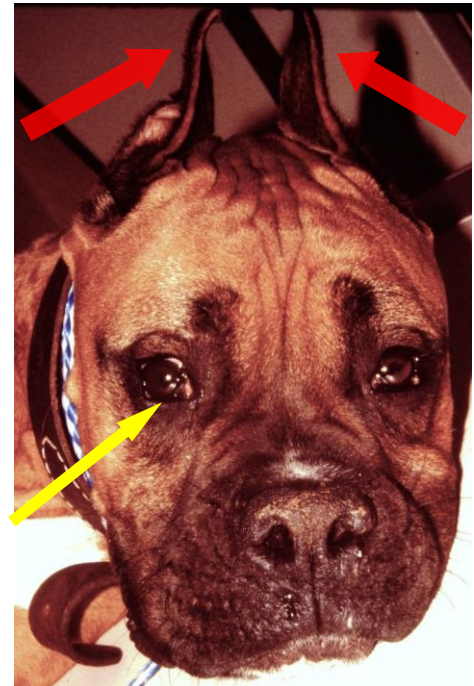
Trismus (lockjaw)

Posture

- **Sawhorse stance**
- **Opisthotonos**

Flared nostrils (large animals)

Bloat (cattle)



Boxer with tetanus



Lamb with tetanus, "sawhorse" stance and opisthotonos

DDX:

Colitis, Pleuritis, Laminitis, Meningitis, Epilepsy, Myopathy, Cervical spinal disease

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Test of choice:

Diagnosis usually based on clinical presentation

Rx of choice:

Tetanus antitoxin

- Only effective against unbound or free neurotoxin
- Give early in course of disease
- May cause anaphylactic shock in small animals

Clean and debride wound

Antibiotics

- Penicillin G
- Metronidazole
 - Alternative to Penicillin G

Sedation

- Diazepam (GABA agonist)
- Clonazepam (small animals)
- Acepromazine
 - **Cheaper** alternative to GABA agonists

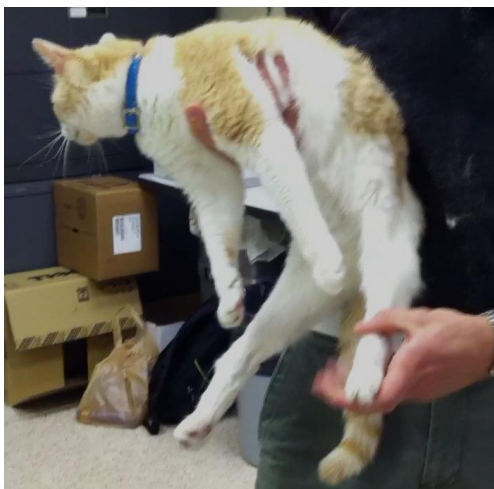


Pot-bellied pig with tetanus, note hindlimb extensor rigidity

Environment should be quiet and dark

Well-padded bedding

Turn often if recumbent – prevent decubital ulcers



Cat with localized hindlimb tetanus



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Prognosis:

Guarded to poor if recumbent
Approximately 75% recover with nursing care if not recumbent

Prevention:

Immunization with tetanus toxoid (horses – even those that recovered from tetanus)
Aseptic surgical techniques
Oxidizing disinfectants (iodine or chlorine)

Pearls:

Neurotoxin produced by the anaerobic bacteria *Clostridium tetani*

- Neurotoxin interferes with **inhibitory interneurons** in the CNS
- Allows **excessive** firing of motor neurons causing tetanus and hypertonia

Horses and humans most susceptible
Dogs and cats most resistant
Usually see only single cases,
but outbreaks can occur following routine tail dockings, castrations, ear tagging, etc

Refs: A Practical Guide to Canine and Feline Neurology, Dewey, 2nd ed. p 497-500, Veterinary Neuroanatomy and Clinical Neurology, de Lahunta and Glass, 3rd ed. p 209-210, Small Animal Neurology, Jaggy. p 300-301, Large Animal Neurology, Mayhew, 2nd ed. p343-345 and Merck Manual, 10th ed (online): Tetanus, Images courtesy of Dr. Shirley Scott (dog, cat) and Dr. Lisle George (lamb, pig)

My Notes: