American Association of Equine Practitioners

Horse Health Education

Understanding Equine Strangles

www.aaep.org/horseowner

OVERVIEW

- What is strangles?
- Signs of the disease
- Diagnosis
- Treatment
- Management of the farm
- Vaccination
- Prevention

WHAT IS STRANGLES?

- Bacterial infection with *Streptococcus equi* subspecies *equi* (*S. equi*)
- Bacteria typically infects the upper airway and lymph nodes of the head and neck
- Highly contagious in horse populations, but not generally to people
- Primary source of recurrent infections is asymptomatic shedders

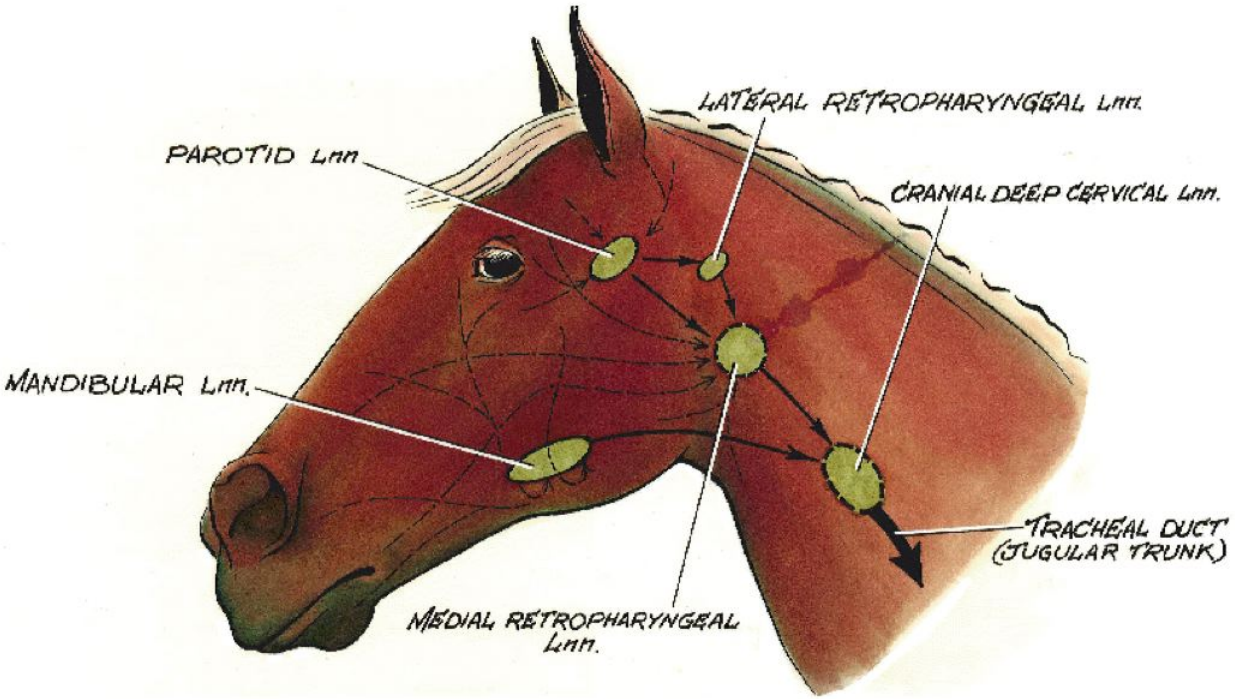
SIGNS OF INFECTION

- Fever (temperature 101.5° F)
- Enlarged lymph nodes
  - Submandibular
  - Retropharyngeal
- Purulent nasal discharge
- Depression
- Difficulty swallowing

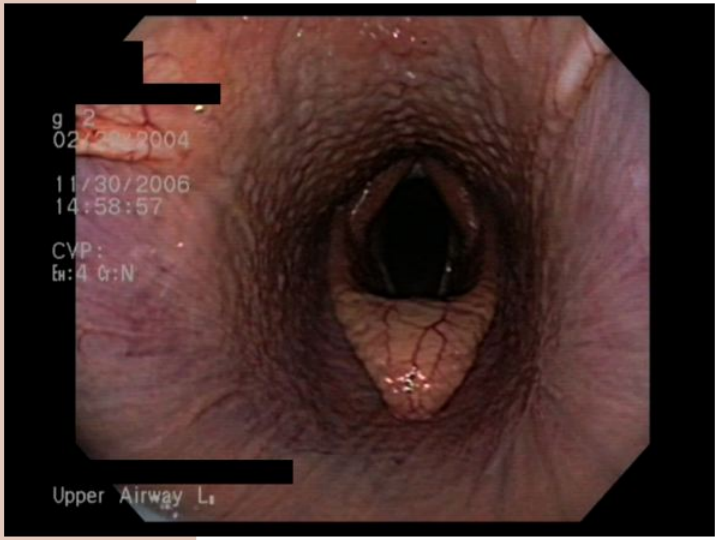
SIGNS OF INFECTION

- Respiratory distress
- Noise when breathing (stridor)
- Extended head and neck
- Lymph nodes rupture and drain from skin
- Retropharyngeal lymph nodes rupture and cause infection in the gutteral pouch (empyema)

LYMPH NODES


LATERAL RETROPHARYNGEAL LMN.
PAROTID LMN
CRANIAL DEEP CERVICAL LMN.
MANDIBULAR LMN.
TRACHEAL DUCT
(JUGULAR TRUNK)
MEDIAL RETROPHARYNGEAL
LMN.

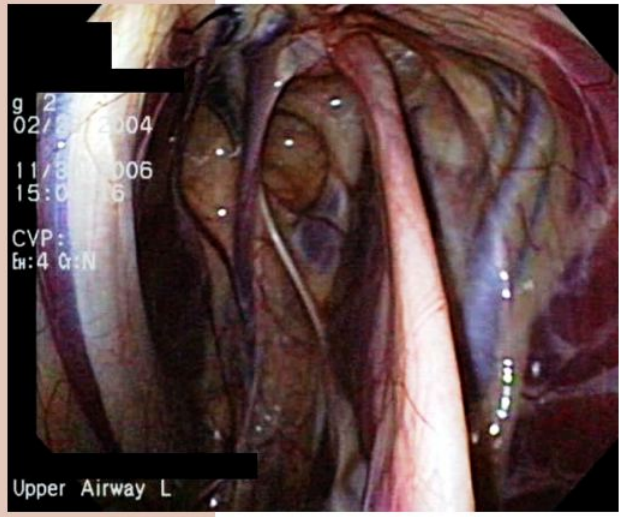
THE GUTTURAL POUCH



Guttural pouches are air filled spaces within the head that are an expansion of the Eustachian tubes.

It is hypothesized that horses use air in guttural pouches to cool the arteries during exercise and keep the brain from overheating.

INFECTION OF THE GUTTURAL POUCH



Normal guttural pouch view, but pus collects on the ventral floor in cases of empyema with strangles.

COMPLICATIONS OF INFECTION

- Spread to lymph nodes outside of head/neck
  - Called Metastatic or "Bastard" Strangles
- Immune mediated disease
  - Purpura hemorrhagica
- Muscle inflammation and pain (myositis)
- Lack of milk production
  - Likely secondary to fever and poor appetite

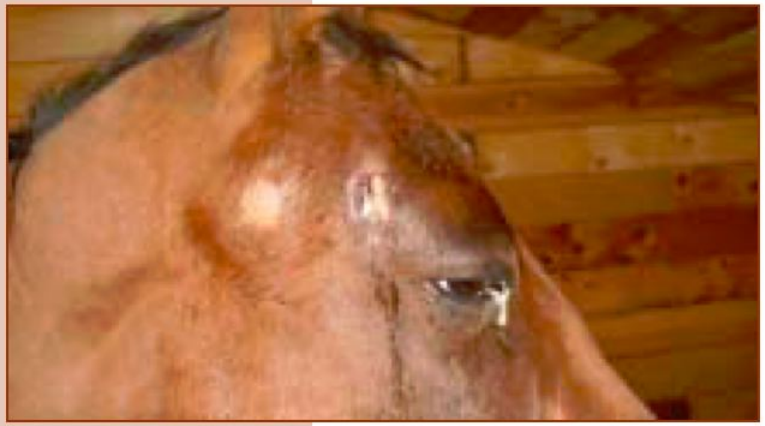
COMPLICATIONS OF INFECTION

Chondroids are inspissated pus that occur in the guttural pouch often as a result of chronic guttural pouch infection (empyema).

COMPLICATIONS OF INFECTION

- Occurs in about 20 percent of cases
- Increase case fatality rate
- Require longer and more intensive treatment
  - Typically antibiotics

DIAGNOSIS OF STRANGLES

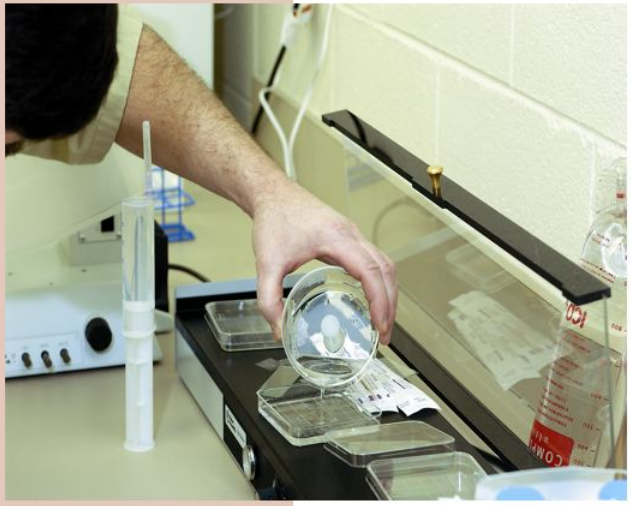


- Signs of infection are highly suggestive
- Definitive diagnosis via culture
  - Nose
  - Guttural pouch
  - Lymph node
  - Nasopharyngeal wash
- Polymerase Chain Reaction (PCR)
  - Most sensitive

DIAGNOSIS

- The challenge is ASYMPTOMATIC CARRIER horses
- Four to 50 percent of horses on farms with recurring strangles are carriers of the bacteria
- All horses that had signs of infection should be tested 3 times and be negative on all before being reintroduced to healthy horses
- Shedding can occur for weeks to months after infection in most horses
  - Rare cases may shed for years
  - Continual source of new infections

DIAGNOSING CARRIERS



There are three methods to confirm diagnosis of strangles:

- Culture bacteria from the nasal discharge or abscess
- PCR of nasopharyngeal washes or guttural pouch samples
- Blood test (serology) all animals on farm, even horses that have not had evidence of infection

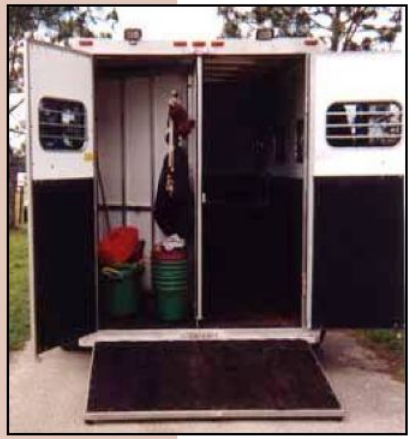
TREATMENT OF STRANGLES

- ISOLATE ALL HORSES WITH FEVER
- Do not treat without your veterinarian
- Hot pack and flunixin meglumine or bute can be used for supportive care
- Antibiotic therapy remains controversial

TREATMENT

- Uncomplicated cases do NOT require antibiotics
- Complicated cases often require antibiotics and other treatments (tracheostomy, etc.)
  - Penicillin usually antibiotic of choice, others are also effective
- If antibiotics are used, treatment course is usually weeks or longer to completely clear infection
- Remember that early treatment in uncomplicated cases may prevent immunity to infection

MANAGEMENT OF AN OUTBREAK



- Call your vet immediately
- Strangles is a reportable disease in many states
  - Not in Texas
- STOP movement of horses and do not allow new horses to enter the farm
- Take temperatures (normal 99-101.5° F)

OUTBREAK MANAGEMENT

- ISOLATE HORSES AT THE FIRST SIGN OF FEVER
- Infected horses can transmit the bacteria to a healthy horses one to two days after onset of a fever

OUTBREAK MANAGEMENT

Create three groups of horses:

1. Infected horses
2. Horses that have been exposed to or contacted infected horses
3. Clean horses with NO exposure

NO nose to nose contact or shared water or feed buckets should be allowed within the groups.

OUTBREAK MANAGEMENT

- Clean horses with no exposure should be housed separately in an area where infected horses have not been kept:

  - ALWAYS handle clean horses first
  - Ideally – separate caretakers
  - Separate cleaning equipment, grooming tools, water buckets, pasture, etc.

OUTBREAK MANAGEMENT

If the same people must work with all the horses, dedicated protective clothing MUST be utilized.

Remember to wear boots, gowns or coveralls and gloves.

Thoroughly disinfect equipment between horses (tack, pitch forks, brushes, etc.).

Read the label on disinfectants to be sure they are used at the correct dilution and are active against S. equi.

OUTBREAK MANAGEMENT

Correct

Not this!

OUTBREAK MANAGEMENT

- People and equipment can transfer the infection from horse to horse
- Disinfection and hand washing are critical!

CLEANING AND DISINFECTION

- Water and feed troughs should be cleaned and disinfected daily
- Stalls should be cleaned after manure removal

CLEANING AND DISINFECTION

- Manure and waste feed should not be spread on pastures
  - Compost in isolated location
- Pastures used to house infected horses should be rested for four weeks

IS THERE A SOLUTION?

- What about vaccination for my whole herd?
  - Indications for vaccination
  - Can you administer during an outbreak?

VACCINATION FOR STRANGLES

- Vaccination is one method of prevention and control
- Vaccination cannot guarantee disease prevention
- Vaccination will likely reduce disease severity in horses that may become infected

Consult with your veterinarian for further information.

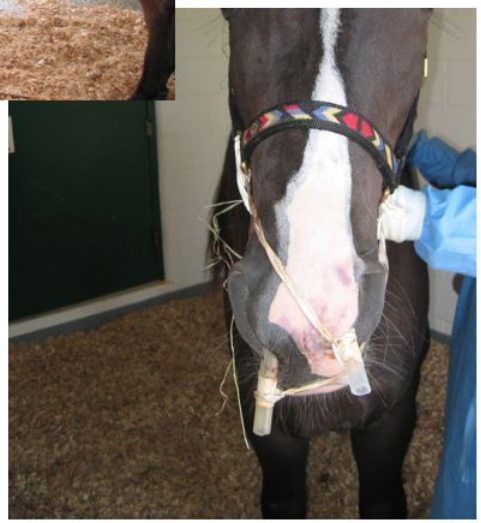
VACCINATION FOR STRANGLES

- Available vaccines are intranasal and intramuscular
- Improper administration can result in poor protection or complications at injection site
- Intranasal vaccination provides the best local immunity

VACCINATION FOR STRANGLES

- It is recommended not to vaccinate during an outbreak or immediately after clinical infection (for up to about a year)
- Once recovered from active infection, 75 percent of horses have immunity for one to two years
- Blood antibody testing can help determine better timing for vaccination since vaccination of horses recently exposed to strangles may result in pupura hemorrhagica

PURPURA HEMORRHAGICA



This condition is caused by an over active immune response, which can result in limb and head swelling, sloughing of the skin, small hemorrhages on the gums and fever.

SO WHO SHOULD BE VACCINATED?

- Vaccination is only recommended in healthy horses with no fever or nasal discharge
- Horses who have not experienced an infection within a year
- Horses that travel routinely and are exposed to varied horse populations
- Broodmares prior to foaling if history of strangles on the farm

REMEMBER

- Initial vaccination requires a booster dose
- It takes about three to four weeks for immunity to develop – so leave enough time before transport or shows
- Consider the chance of exposure and your comfort with the level of risk

ADDITIONAL PREVENTATIVE MEASURES

If you have NOT had strangles on your farm, you still don't want it!

- A current health certificate for new arrivals should always be required
- Isolate new arrivals for two to three weeks and check temperatures daily
- Ask owners about history of strangles and consider testing

ADDITIONAL PREVENTATIVE MEASURES

- Use individual water buckets for each horse and disinfect routinely
- If shared water source, disinfect at least weekly
- When traveling to shows, bring your own feed, buckets and equipment and minimize use of shared stalls or pastures
- Group pastured horses according to age

IN SUMMARY

- Reduce your horse's risk of exposure with good management and clean equipment
- Involve your vet if you suspect infection
- Isolate and contain sick horses
- Disinfect, disinfect, disinfect!

Photos courtesy of

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