EQUITAIT
VETERINARY PRACTICE

AN OWNER'S GUIDE TO STRANGLES

Background and clinical signs

Strangles is a disease caused by the bacterium Streptococcus equi. The terms strangles, Streptococcus equi and S. equi are often used synonymously). The signs of a classical strangles infection can include:

- a nasal discharge, often profuse yellow from both nostrils;
- cough;
- difficulty swallowing;
- poor appetite and depression;
- swellings around the head and neck; and
- a high temperature (fever).

Young horses are more susceptible but horses of any age can be affected.

We now however recognise atypical strangles as being more common especially in healthy adult horses. The milder nature of the clinical symptoms can easily be confused or attributed to a wide number of other conditions, making it trickier to diagnose. Unfortunately these horses are still a risk to other horses and should be treated as infectious.

Clinical signs associated with atypical strangles include:

- mild short term fever;
- mild short term inappetance;
- mild clear nasal discharge;
- there is no abscess formation; and
- many owners report they have seen no clinical signs whatsoever and these cases are only picked up during screening procedures during an outbreak.

Complications are rare and in the majority of cases the infection is confined to the head and neck, however in a small number of horses the infection may spread to other body organs and form abscesses, this is known as bastard strangles. Rarer still is purpura haemorrhagica in which blood vessels themselves become affected and can spontaneously bleed. Both these complications can be fatal but thankfully are rare.

Once infected, the majority of animals recover from the disease and eliminate the *S. equi* bacterium from their bodies over a 4–6 week period. However, a small but important proportion of affected horses (up to 10%) will become carriers of the disease and may not show any clinical signs but can act as a reservoir of infection for other horses. Most commonly the bacteria remain in the horse's guttural pouches and can do so for months to years. They can intermittently shed S. equi, which can then infect previously unexposed horses. These symptomless carriers are probably the most important factor in persistence of infection on premises between outbreaks.

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Diagnosis

To diagnose strangles in a horse showing signs of infection your vet will normally take a nasopharyngeal swab; an absorbent piece of cotton passed up the nose to sample the back of the throat. This swab can then be tested for presence of S. equi by culturing the bacteria or by testing for the presence of bacterial DNA.

After an infection, it is recommended that owners wait a minimum of 30 days since cessation of the signs before starting to test for carriers. Without testing for carriers after an outbreak it is impossible to say whether a horse or the horses in contact are possible sources of infection. Horses that have been in contact with an affected horse or a carrier horse may themselves become carriers.

The guidelines for testing horses for potential carriers are based on guidelines produced by the Animal Health Trust and the Horserace Betting Levy Board.

To test for carriers a series of three nasopharyngeal swabs need to be collected at 5-7 day intervals over the course of two weeks. If any of the three swabs tests positive for infection then it is recommended that the horse has an endoscopic examination of the guttural pouches. An alternative to three nasopharyngeal swabs is a single endoscopic examination and wash of the guttural pouches. No infected or in-contact animal should be released from isolation or veterinary supervision until they have been tested conclusively negative for active shedding and the carrier state.

Strict biosecurity is essential in the control of strangles; all new horses entering a yard should be closely monitored and any horse that develops a nasal discharge should be isolated and tested. Ideally all new horses should be isolated until testing and the presence of the infection is ruled out. Infection is spread by close contact between infected and uninfected animals including contact via feed buckets, water troughs, tack etc. The organism can live for long periods particularly in water.

There is often confusion because of the different methods in firstly diagnosing strangles and then trying to identify carrier horses and freedom from the disease. Below we have summarised these and some things to bear in mind when we are considering these tests. Unfortunately tests are rarely as definitive as we would like but we are usually looking to take the most pragmatic and practical approach to deliver as effective a solution as possible.

Sampling Methods

- Draining abscess - culture of pus from obvious draining abscesses should be a reasonably reliable way of diagnosing strangles.
- Nasopharangeal swabs – during nasopharangeal swabbing it is particularly important to sample the back of the pharynx around the opening of the gutteral pouch, using specially designed elongated swabs with enlarged absorbent heads. Shedding of S. equi into the nasopharynx often occurs intermittently, so repeated swabbing is recommended to confirm negative results.
- Guttural pouch lavage – this often involves an endoscopic examination (‘scoping’) of the guttural pouches with washes of these pouches then being submitted for testing. It generally requires sedation of the horse.

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Laboratory tests
Swabs or washes taken using the above methods can be submitted to a lab for testing for the following 2 tests.

- Culture – involves growing the organism present on the swabs on specific plates to identify the bacteria involved. In clinical cases where there is large amount of purulent material it is a reasonably reliable test. When testing to check for carrier status a series of 3 nasopharyngeal swabs, collected 1 week apart, subjected to culture alone will result in detection, on at least one of the swabs in approximately 66% of carrier horses.

- PCR (polymerase chain reaction) - this looks for small fragments of the S. equi bacterial DNA and is a more sensitive test than the traditional culture of *S. equi*. Testing by PCR increases the likelihood of detecting carriers to over 90%. However, a positive PCR result may detect fragmented DNA where viable, infectious organisms are no longer present.

The blood ELISA test is a useful tool in helping to identify carrier animals in some scenarios. The test detects blood antibodies rather than the organism itself. Newly exposed horses take two weeks to develop sufficient antibodies to give a positive result and may remain positive for up to six months after recovery. As with all ELISA tests, false negative and false positive results may occur and so timing of the test and careful interpretation of any results are important. A small proportion of horses having been exposed to S equi will still not show a positive result and this frustrating fact must be kept in mind.

During an outbreak there are likely to be several horses who have had no clinical signs of strangles but who have been in contact with affected animals. These horses could be carriers despite showing no signs of disease. These animals can be tested using the *S. equi* ELISA to determine if they have evidence of an antibody response to *S.equi*. If any of these animals are positive via ELISA, they should go through the same culture/PCR testing process that is outlined above to determine if they are truly carriers. If a *S. equi* carrier is identified, this animal should be isolated and all in-contact horses retested 2-3 weeks after their last possible exposure to the carrier animal.

Without testing for carriers after an outbreak the yard cannot be declared ‘clear’ as there remains a risk that horses on the yard could continue to shed the strangles bacteria to others.

Treatment and guidance on isolation

Strangles can be treated with antibiotics, the usual choice being penicillin although the treatment of horses with clinical signs of strangles remains controversial. Antibiotics are usually only used if the clinical signs are severe enough to warrant it as most horses will recover without treatment.

In its strictest sense, ‘isolation’ means a separate facility with separate staff, separate protective clothing, separate equipment and thorough steam cleaning and disinfection of stables between each occupant. When dealing with Strangles it is important to try and achieve the best possible isolation while remembering that it is not always practical or possible to achieve everything. Strict hygiene procedures are essential to minimise the spread of the disease. These notes provide general guidance on isolation procedures.

The principal aim of isolation is to prevent contact between the isolated horses - those suspected or confirmed of having strangles - and the other horses in the yard.

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Ideally the isolation facility should be in a separate building or a separate field at least 10m but preferably 25m away from any other horses (additional fencing can be used to create a 10m / 25m “sterile zone” if necessary). If this is not possible then even simple steps like boarding up any grills between stables; fitting door grills so that horses cannot touch other horses over the door and similar measures will help to contain infection, although this is less than ideal.

A separate water supply must be available for the isolated horses.

Separate equipment for feeding, watering, grooming and cleansing must be used for horses in isolation. These must not be removed or used on other horses unless they are first thoroughly cleaned and then decontaminated with an approved disinfectant.

As few people as possible should come into contact with the isolated horses and appropriate measures (e.g. communication with owners, notices at the entrance to the premises) should be used to enforce this - this includes pet dogs and cats living at or visiting the yard.

Preferably attendants of the isolated horses should have no contact with any other horses during the isolation period. Where other contact is unavoidable, it should be kept to a minimum and should only happen after thorough washing and disinfection of hands and a change or thorough disinfection of clothing including boots and impervious outer clothing. In these circumstances staff should attend to non-infected animals first and only then deal with the infected animals, ideally as their last task on the yard.

Used bedding, uneaten food and water must be disposed of carefully. Water should be discharged to the sewer or septic tank to avoid cross contamination.

Protective clothing (e.g. disposable boiler suits, separate boots and disposable gloves) must be available at the entrance to the isolation facility and must be disposed of properly, i.e. double-bagged and taped shut. The outside of the bag should be disinfected before disposal.

After use, all moveable equipment for feeding, grooming and cleansing within the isolation facility must be disinfected using a disinfectant approved by Defra for general purpose. After the isolation area is vacated it must be steam cleaned and washed down with an approved disinfectant.

The strangles vaccine has been re-introduced into the UK market, although it’s use is somewhat controversial. For more details on this please contact the practice.

Further Reading

http://www.hblb.org.uk/sndFile.php?fileID=58
http://www.aht.org.uk/strangles.org/pdf/steps.pdf

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