Joint effort

Equine arthritis can range from mild and slowly progressive to a medical emergency. Vet Kirstie Pickles from Scarsdale Veterinary Practice explains

Arthritis is a term that simply means inflammation of the joint and it's very common in horses. We tend to think of arthritis as a condition that affects animals and people as they age, and to a certain extent that's true, but horses can actually be affected by different forms of arthritis, some of which can strike at any age.

In horses, there are two main types of arthritis – non-infectious arthritis, more commonly referred to as degenerative joint disease (DJD) or osteoarthritis, and infectious (septic) arthritis. While they are both forms of arthritis, they have very different causes, symptoms and treatments.

Our expert

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Non-infectious arthritis

Osteoarthritis causes joint pain and is thought to be one of the most common causes of lameness in horses. The disease can develop as a result of general wear and tear as your horse gets older, or from a traumatic injury to the joint.

It can range from inflammation of the joint capsule to loss of the cartilage covering the joint surface, and the development of new bone on joint surfaces. Additionally, alteration to the layer of bone just below the joint cartilage reduces shock absorption, which has a detrimental effect on the stiffness of the cartilage.

Any joint can be affected, but the most commonly affected areas include the upper knee joints, lower hock joints, and forelimb fetlock and coffin joints. Besides age and trauma, certain conformational abnormalities and poor shoeing, which can lead to incorrect foot balance, can cause excessive wear and tear on joints and contribute to the development of this disease.

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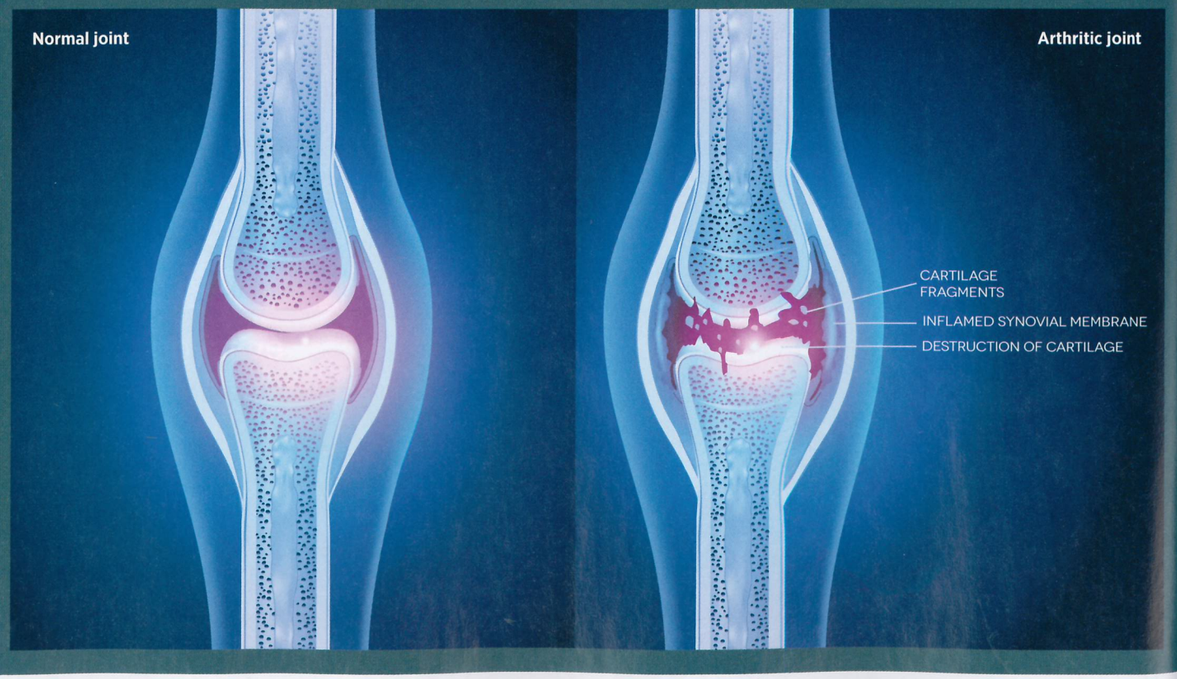
Onset of the disease is very gradual and can often go unnoticed in the early stages, with horses initially appearing to be occasionally stiff first thing in the morning. As it progresses, horses may begin to show...

- reluctance or pain when moving the joint
- stiffness
- reduced range of motion – for example, during shoeing
- swelling around the affected joint
- heat around the affected joint
- more time needed to warm up for exercise
- decreased performance
- general lethargy
- lameness
- change in the shape of the joint



Diagnosis

Your vet will perform a lameness assessment, which may need to take place at an equine clinic if the facilities at your yard aren't suitable. This includes...

- **assessing your horse while he is trotted up** in a straight line, and lunged on a firm and a soft surface. It may also be necessary for him to be ridden, which is helpful when investigating more complex problems.
- **performing flexion tests**, where the limb is held up in a flexed position for a short period of time, after which the horse is trotted away. Flexion of an arthritic joint often worsens the lameness, which helps to confirm where the pain is coming from.
- **nerve and joint blocks** to determine the exact site of pain. This involves injecting local anaesthetic around particular nerves or into the joint itself.
- **X-rays to assess the damage** to the joint. However, in the early stages or in mild cases of osteoarthritis, there may be no changes visible on the X-rays. In these cases, other methods of imaging can be used, such as ultrasound, scintigraphy (bone scan), magnetic resonance imaging (MRI) or computed tomography (CT).
- **arthroscopy**, which is key-hole surgery into the joint. Your vet may recommend this because it can be useful to diagnose the extent of cartilage loss, as well as to treat conditions such as articular cartilage separation (where cartilage has become separated from the end of the bone), meniscal (shock absorbing cartilage) tears and ligament injuries.

Trotting up

Flexion test

Ultrasound scan

Treatment

Damage to the joint is irreversible, so osteoarthritis is managed rather than cured. Treatment is dependent upon which joint is affected and the severity of the damage, but may include...

- **a period of rest** followed by a gradually increasing exercise regime.
- **non-steroidal anti-inflammatory pain killers** such as phenylbutazone or suxibuzone. Long-term, ongoing treatment with these drugs is often required.
- **an anti-inflammatory steroid** injected into the joint. Use of steroids in horses does have the potential serious adverse effect of laminitis, so this is something that should be considered before administering this treatment.
- **sodium hyaluronate** injected into the joint. This has been used effectively for mild to moderate inflammation and has a chondroprotective (cartilage protecting) effect, but it is less effective for severe inflammation. Administering hyaluronate into the vein also appears to be effective.
- **polysulphated glycosaminoglycans (PSGAGs)** injected into the joint. This can help prevent ongoing degeneration of articular cartilage. The effectiveness of injecting PSGAGs into the muscle is less certain.
- **pentosan polysulphate** injected into the muscle. This has been shown to be effective as a disease-modifying drug with experimental equine osteoarthritis. A course of four or five injections is usually recommended.
- **IRAP** – this involves taking a blood sample from the horse, which is then stimulated in a laboratory to produce anti-inflammatory agents. The serum is then collected from the blood sample and injected into the affected joint. This treatment has shown good results in some horses.
- **oral joint supplements**, which may be beneficial, particularly early on in disease, although scientific evidence supporting their use is largely lacking. Such supplements contain molecules that constitute the 'building blocks' of cartilage, such as glucosamine and methylsulfonylmethane (MSM). Supplements vary widely in ingredients and price, and should be checked carefully before purchase.

Treatment
Non-infectious arthritis continued...

● **surgical management**, such as fusing the joint (arthrodesis), which may be considered on selected joints in unresponsive cases. Surgical fusion of the pastern or lower hock joints can result in athletic soundness. Fetlock arthrodesis is also done in valuable animals, which enables them to be sound enough to be kept for breeding purposes.

Treatments for osteoarthritis are designed to modify the disease process, either by reducing inflammation or assisting repair within the joint. Unfortunately, it is very difficult to predict how an individual horse will respond to treatment and several lines of therapy may be necessary to achieve a sound animal.

Prognosis

The prognosis for horses with osteoarthritis depends on the severity of the damage to the joint and the response to medication. Although it can't be cured, with a suitable exercise regime, medication and rest as appropriate, it is often possible to get the horse back to the same, or lower, level of exercise.

Infectious arthritis

Septic arthritis is caused by bacterial infection of a joint, which can occur in three main ways...

● **Traumatic injury**, with introduction of bacteria from the environment via a wound.

● **Secondary to another disease process**, which is more common in foals and is usually associated with inadequate colostrum (mare's first milk) uptake.

● **Medical treatment**, such as a joint injection or surgery, although this is rare.

Septic arthritis is always an emergency. Horses rapidly become severely lame – usually within 1–2 days of infection – and often become non-weight bearing on the affected limb. Muscle wastage quickly follows after loss of weight-bearing and the affected joint is usually very swollen, unless joint fluid is being lost via a wound.

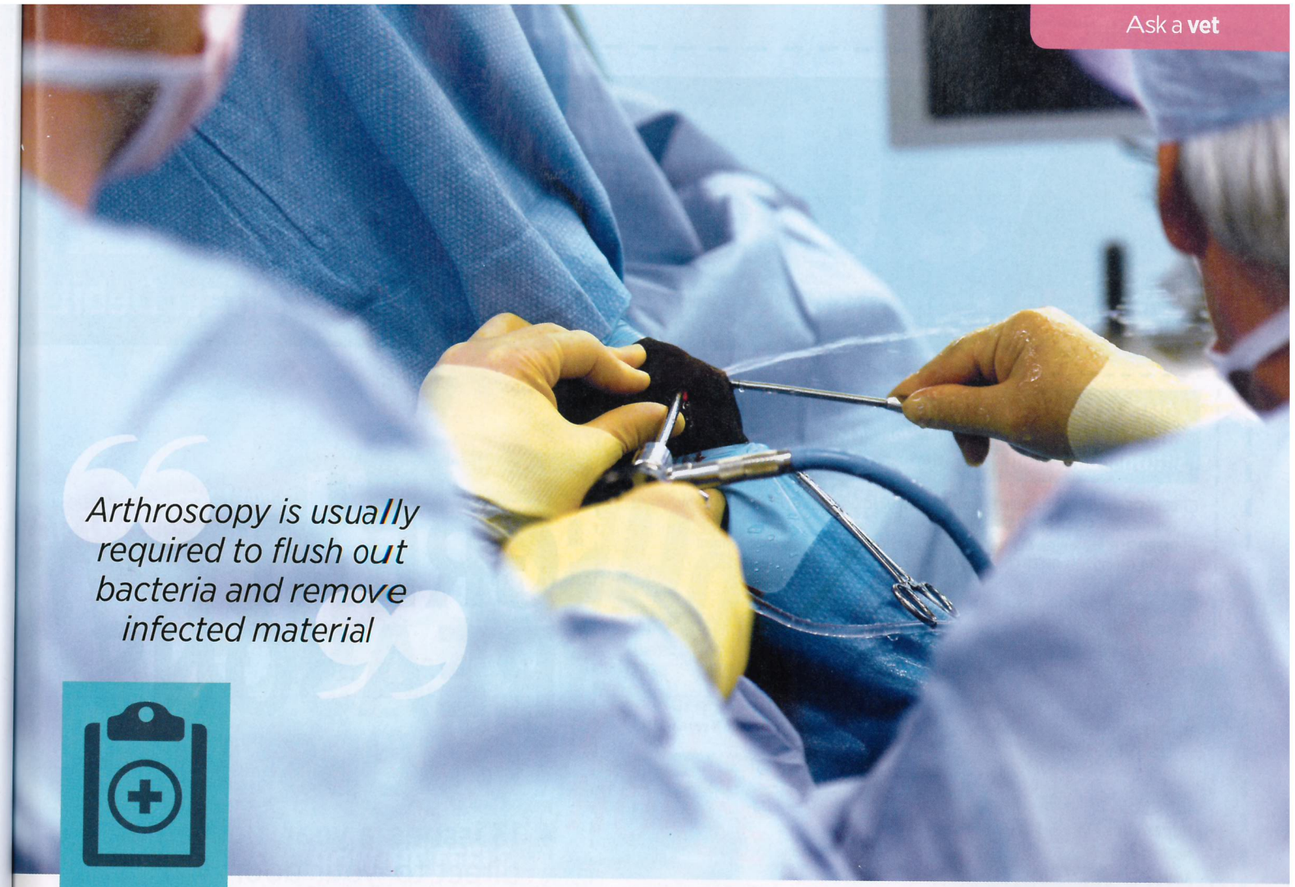
It's important to realise that horses with septic arthritis where a wound leads into the joint will not be as lame as those with wounds that don't directly affect the joint. This is because if there is a wound going into a joint, the extra joint fluid will drain away, rather than building up and causing increased pressure and pain inside the joint.

Diagnosis

Any wound overlying or close to a joint should be treated with caution and examined by a vet for potential joint involvement as soon as possible, because the effects of septic arthritis are potentially devastating. Other causes of non-weight bearing lameness, such as fractures, foot abscess and cellulitis, will need to be ruled out, but they can usually be eliminated after the horse has been examined.

Septic arthritis can be confirmed by collecting a sample of fluid from within the joint. Normal joint fluid is a clear, straw-yellow colour, whereas fluid from an infected joint is cloudy due to the increased number of white blood cells and higher protein concentration. The fluid sample should be sent to the lab so that the bacteria can be identified and the correct antibiotic selected. However, negative results for bacterial culture are disappointingly frequent, because the bacteria prefer to hide within the tissue in the joint rather than float around in the joint fluid.

In addition to collecting a joint fluid sample, your vet may infuse saline solution into the joint to determine if the joint connects with the wound. If the wound is connected, the saline solution will come out of the wound. This technique is particularly useful for making an early diagnosis when the joint has been contaminated, but infection has not yet set in.



Arthroscopy is usually required to flush out bacteria and remove infected material

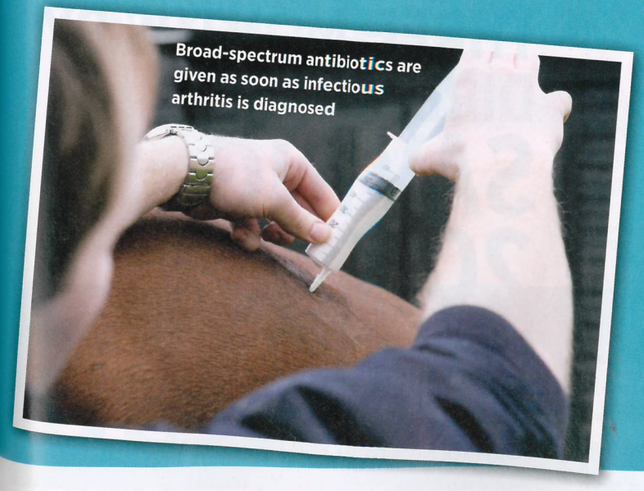
Treatment
It is vital that septic arthritis receives prompt, aggressive treatment to avoid irreparable damage to the joint. Treatment consists of...

● **broad-spectrum antibiotics**, which can be injected into the vein or muscle. Antibiotics will be started as soon as septic arthritis is suspected, but may be changed once the joint fluid sample has been tested.

● **antibiotics administered directly into the joint**, or even adjacent bone, which can achieve more effective sterilisation of the joint.

● **arthroscopy** to flush the affected joint with copious amounts of saline solution and remove infected material. This procedure helps remove bacteria and harmful by-products of the infection that can damage the cartilage surface of the joint. Joint flushing is ideally done under general anaesthetic because access to all areas of the joint is much easier, but it can be performed standing under sedation if no other option is available. In severe or long-standing cases, repeated joint flushes may be required, because bacteria like to live within the joint capsule tissue, making them hard to flush out.

● **non-steroidal anti-inflammatories**, such as phenylbutazone, to manage pain.



Prognosis

The effectiveness of treatment must be monitored carefully by keeping an eye on the clinical signs and repeating joint fluid analysis. If it's caught early and treated aggressively, the prognosis for septic arthritis is favourable. A study of racehorses with septic arthritis in the early 1990s revealed that more than half returned to racing. Another study in the Netherlands of foals and adults with septic arthritis revealed that 81% of the adult horses recovered, although the survival rate for foals was lower.

Septic arthritis is a potentially devastating condition, capable of causing rapid, permanent damage to tissues within the joint, so prompt, aggressive treatment is paramount. If treatment is delayed, the prognosis is decidedly less favourable, so even small wounds near joints should be treated as serious until proven otherwise. ■