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SARCOIDS

The equine sarcoïd is a skin tumour that affects horses, donkeys, mules and other equids (including the zebra) throughout the world. Around 3-8% of horses are affected by the condition but there are geographical differences in both the proportion of horses that are affected and the specific types of sarcoïds those horses get.

The disease is problematic because it is very unpredictable and also very difficult to treat. Whilst the disease can seriously affect the skin at any site on the body, it does not spread into the internal organs, so while many horses are badly affected, it seldom "kills" the horse. However, many horses lose value or are destroyed because of the disease. They can be a problem at pre purchase vettings due to their unpredictability.

Sarcoïds can be frustrating for the owner and vet alike. There are still large 'black holes' in our knowledge and no two sarcoïds respond the same, either within the host or to treatment.

SARCOID FACTS-SOME PERTINENT POINTS!

1. The sarcoïd has several important implications for both owners and vets.
2. Sarcoïds can occur in horses of all types/breeds, all colours and both sexes. Horses in all parts of the world are affected.
3. Sarcoïds are best regarded as a form of skin cancer.
4. The commonest sites for sarcoïd to be found are those areas with thin skin, limited or no hair cover and a tendency to sweat.

5. There are 6 different types of sarcoid:
 - Occult Sarcoid
 - Verrucous Sarcoid
 - Nodular sarcoid
 - Fibroblastic Sarcoids
 - Mixed Sarcoid
 - Malignant Sarcoid
6. The equine sarcoid can be mistaken for other conditions and other conditions can resemble sarcoid.
7. An individual horse may have one lesion or may have up to several thousand sarcoids.
8. Sarcoids occur at all body sites.
9. Not all horses respond in the same way either to the presence of sarcoid tumours or to the treatment modalities.
10. It is not known whether sarcoid tumours are transmissible between horses.
11. Sarcoids are difficult to treat
12. Effective treatment is more certain if lesions are treated early, and if the horse is under 4 – 6 years of age
13. A diagnosis can be confirmed by biopsy of the lesions but the pathological features of the sarcoid are very recognisable in most cases
14. There is no effective vaccine for sarcoid
15. Flies may be important in the spread of sarcoid across the horse
16. Sarcoids are commonly reported to multiply on an individual horse over the summer and grow over winter
17. Horses with [many] sarcoids are often reported to perform less well
18. A horse that has any sarcoids at all is, by definition, liable to them and probably remains so for life
19. A few cases heal spontaneously with complete disappearance of the lesions

20. Horses with sarcoids that injure themselves can develop serious sarcoid lesions at the site of the injury
21. Accidental injury or intentional damage (e.g. biopsy or surgical interference) to a sarcoid may result in a more aggressive lesion with rapid re-growth
22. An early diagnosis and prompt and effective treatment is the best overall policy
23. The commercial value of a horse with even one sarcoid is probably less on the open market than the same horse without a sarcoid

What is a sarcoid?

The sarcoid is a form of skin tumour or cancer. The name sarcoid is used to describe its generally 'tumourous' (sarcomatous) appearance. However, the name covers a spectrum of skin changes that look very different but which all have the common cell changes. The variation in visual appearance are probably related to the individual cell behaviour and to the host's response to these cells.

They have been recognized for 100's, if not 1000's of years.



Image from a book describing sarcoids in 1856

The cancer results from a change in the behaviour of a certain type of cell called a fibroblast which is a major structural cell in the skin (and many other organs also). The condition does not affect fibroblasts in any other organ in the body - the tumour is restricted to the skin and the immediate region under it. There are however some very aggressive forms in which there is local tissue invasion.

What causes sarcoids?

There is controversy over the cause - it is however generally accepted that a cattle wart virus (bovine papilloma virus) has some part in the development of the condition. However, up to now no virus particle has been found. It seems that a part of the virus gene structure is incorporated into the normal cells of the horse where it acts as a cancer generating mechanism (oncogene) by changing the behaviour of the affected cells. These multiply progressively to result in a visible tumour. The distribution of sarcoid tumours on the horse suggests that flies are involved in some way in the spread of the disease both across the horse and between cattle and horses and even in some cases between horses.

How do horses get the condition?

There are several ways in which a horse can develop a sarcoid.

- By direct infection with the bovine papilloma virus - in this case the horse needs to be in contact with cattle that are affected by the cattle form of the disease.
- Most horses with sarcoids get more and the new tumours are genetically identical to those at other sites. Therefore it seems likely that the condition can spread over the horse from place to place on the skin. We know that this does not occur via the blood stream and so it seems likely that flies are an important aspect of the spread of the disease. Given that so far no virus particle has been found the suggestion is that flies either transmit the virus genetic structure or that they transfer cells from a sarcoid to another site where the transferred cell(s) may replicate.
- There is a suggestion that the tumour cells can be transmitted between horses but this mechanism requires similar tissue types and a means whereby the tumour cell can be implanted in the new host animal in a site where it can survive and develop.

What do sarcoids look like?

There are 6 major forms of the equine sarcoid - some have subtypes but each type has a characteristic physical appearance.

Occult sarcoids

These look like grey scaly areas of skin and are regarded as the most superficial form of the disease. However, they can exist for many years in a rather quiescent state so they need not be "young or early lesions". Hair loss is invariably present when they occur in haired areas and so usually they can be easily seen. They are often roughly circular (at least in their early stages). They are easily mistaken for ringworm in the early stages and there are also some other important skin conditions that have circular patches of skin thickening and hair loss.



Verrucose (warty) sarcoids

These have a scaly, often grey or black surface and they can closely resemble true warts. Most often however, they are larger and more aggressive than warts. The skin lacks elasticity and is rather more fragile than it looks. Some crack open and can bleed heavily. Quite often there are ulcerated areas within the lesion and sometimes there is a bleeding focus. They can cover very large areas in some body sites like the breast and the inner thighs.



Nodular sarcoids

These appear as a single or multiple almost spherical nodules lying in and under the skin. There may be multiple nodules linked together or separated by a narrow margin of ostensibly normal skin. Sometimes the skin surface over the nodule has a grey flaky, verrucose appearance.



Fibroblastic sarcoids

These closely resemble proud flesh - they look fleshy, ulcerated and commonly bleed. There are several recognised types and each of these has its own characteristics - some have extensive roots and others have a narrow stalk with no (or limited) roots. They can be small or vast. Interference with any of the other types commonly results in the development of an aggressive fibroblastic sarcoid at the site - this can be either accidental injury or during ill-advised treatment methods. A particularly alarming form of fibroblastic sarcoid develops at the site of limb wounds - the appearance may be

indistinguishable from proud flesh but the implications are VERY different and the treatment methods are almost opposite.

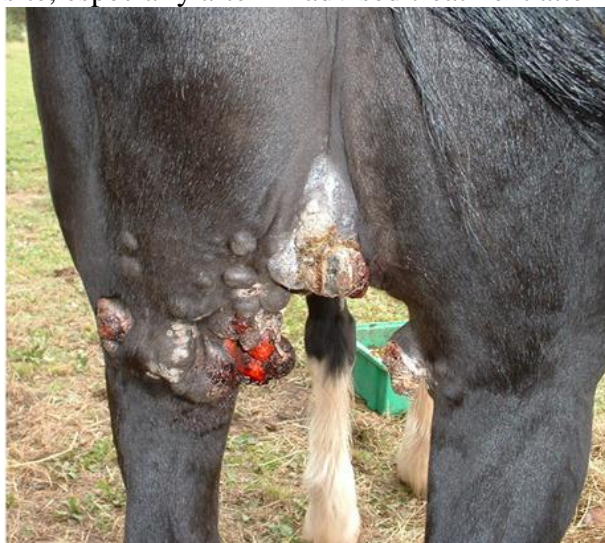


Mixed sarcoids

These are very common - in reality most have some areas or some characteristics of two or more of the other types (see pictures above). However, this classification is only used when there is no predominate type. Often there are two or more types involved and many are extensive.

Malignant sarcoids

These are the most dangerous type. The tumour cells are highly aggressive and infiltrate the surrounding and deeper tissues. Although it is rare, it is most often found centred on the inside of the elbow, the side of the face and the thigh. However, it can develop at any site, especially after ill-advised treatment attempts.



Do sarcoids have any general effects on the horse?

A few tumours of a superficial type are unlikely to affect the horse at all but there are some that are badly affected by even a single tumour. Performance and general health may however be affected and many horses with even a few sarcoids are reported to work better and feel better after the tumours have been treated.

Sarcoids are usually non-painful; even when they are very large and bleeding many horses seem unaware of the problem. Fly strike and worry is a major cause of irritation and infection can easily complicate the sarcoid site making life almost intolerable for the horse. Large sarcoids have a large blood supply - in order to grow to any significant size a tumour must develop a blood supply and so as the tumour develops it "demands" more blood. This explains why any damage to the sarcoid can result in significant bleeding.

How can I tell if it is a sarcoid?

It can be difficult to tell if a single lesion is a sarcoid. Warts, ringworm, melanomas, and proud flesh can all resemble sarcoids. If there are several lesions looking like sarcoids, then they probably are sarcoids!! The vet will often rely upon experience to make a diagnosis. Biopsies can be taken, but these run the risk of aggravating the sarcoid and causing it to grow more aggressively.

Can sarcoids be treated?

There have been many treatments tried over the years to treat sarcoids which means that no one treatment is successful!! The main categories of treatment are used for specific types and locations and no one treatment is universally applicable. If this is accepted then of course benign neglect (leaving the lesions alone because they are either too small, too numerous or too large and aggressive) can be taken as being the treatment of choice! Remember that treatment is never 100% successful. About 60% of cases will respond positively.

For any treatment to be successful every single tumour cell must be destroyed or removed. This is a tall order given that the edges of most sarcoids are not clear! Many vets have the opinion that sarcoids "are best left alone" (again due to the risk that damaging the sarcoid and not completely removing it, results in more aggressive growth). A few cases have been known to spontaneously resolve, but you can never tell which cases are going to be like this!

Self-cure cases imply that there is some immunological mechanism that we might be able to exploit in the future. If self-cure occurs it is unlikely that the horse will develop any new ones – this does not imply a genetic change has taken place, but clearly there is some process that is protective. A few sarcoid lesions will 'drop-out' from the skin leaving a cavity that may (or may not!) bleed. Sometimes this is simply because of the weight and the tension on the skin and others it occurs because the skin becomes weaker over the sarcoid. In any case there is a major risk that there is still some sarcoid present and only when no regrowth has occurred after 5-10 years should it be assumed that the sarcoid will not regrow!

See next months newsletter and information sheet for treatment options.....