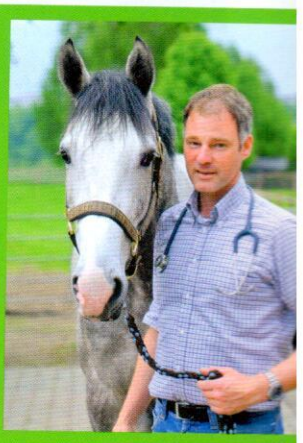
The mystery called lameness

After covering the basic lameness exam in part one of Diagnosing Lameness, which appeared in last month's edition of Horse International, we now move on to advanced diagnostics, including local anaesthetics and radiographic imaging.

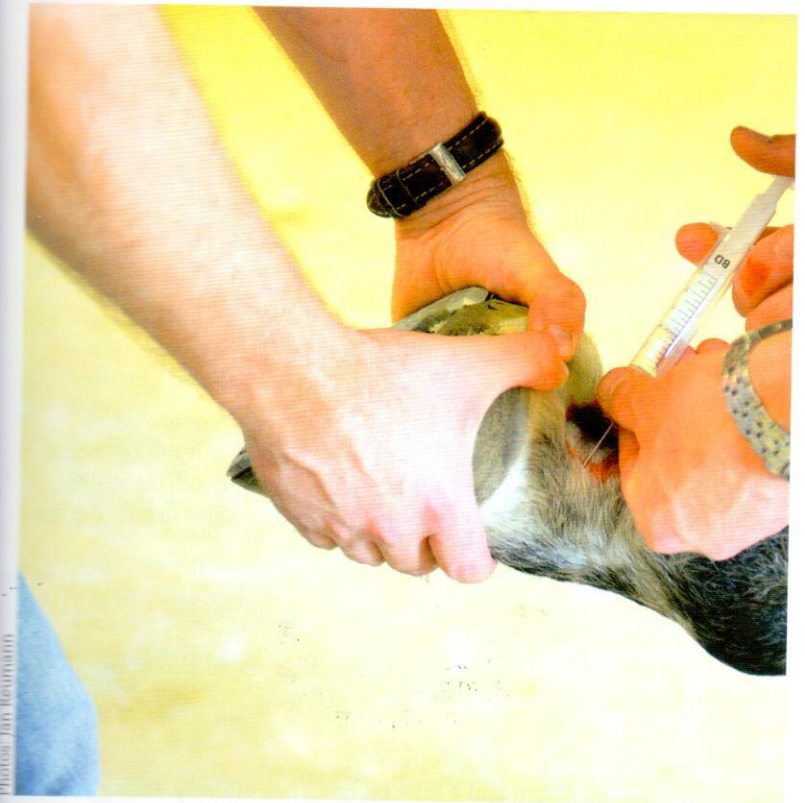
Station VI: local anaesthesia

After a basic investigation into the structures that have possibly been affected, advanced diagnostics are now on the program. 'Local anaesthesia' is the name for the process whereby all structures are anaesthetized from the bottom up to determine when the horse is sound. This would mean that the cause of the lameness in located in the area that has been anaesthetized. "We start with the navicular area. Then come the hoof wall with the hoof joint and the pastern joint, followed by the fetlock joint," Kaminski explains. Other joints and tendon sheaths can also be anaesthetized, if there are suspicions the problem is located there. Before local anaesthesia, the bone structures are often x-rayed, to exclude any fractures that would only be aggravated by further movement. In Cariño's case, the question arises why the veterinarians start with the navicular area anyway, when the swollen tendon sheath provides a strong clue as to the cause of the lameness. "There is something called 'satisfaction of search', which basically comes down to: just because you see something, you automatically think that must be the cause. Confirmation that what you see really is causing the lameness can only be found based on the local anaesthesia," the veterinarian says. "If we would start anaesthetizing so high on the leg, we would not be much the wiser, because we have numbed everything below the site of the anaesthetic injection." This way, any lower lying problems are excluded. After a few minutes, the anaesthetic takes effect and the trot up can commence. On the paved circle, the grey horse tracks better on the right. This is surprising, because before the anaesthetic was administered, he was worse on the right. "That is the reversing lameness," Kaminski explains, "We have taken away the pain in the right leg, and now the lameness on the left suddenly shows." This means the horse has a bilateral problem in the navicular area, but only the lameness on the right was apparent. Therefore, the veterinarians now anaesthetize the left leg as well. "Now he trots very well in a straight line," is their conclusion. On the soft surface, the lameness on the right reoccurs. The veterinarians decide to deviate from the standard protocol of lameness diagnostics and anaesthetize the tendon sheath



The Expert

Dr. Mark Kaminski was born in 1970 in Essen, Germany. H studied veterinary medicine in the city of Gießen and opened his own veterinary practice for horses in 2004 in Bochum. Kaminski specialize in horses and equine orthopedics, as well as being a FEI- veterinarian. He also runs an online pharmacy for equine products. www.pferdepraxiskaminski.de



Using local anaesthetics, all structures are anaesthetized from the bottom up to determine when the horse is sound.

Radiographic imaging can include x-rays, ultrasound and magnetic resonance imaging (MRI).

In the case of the mare Came from Holstein, x-rays of the foot were taken even before the local anaesthesia, to exclude any hairline fissures in the bone structu

immediately. As a result, Cariño is now moving sound. "As expected, we are dealing with two different matters here," they diagnose. Acutely, the grey appears to be suffering from an inflammation in the navicular area in both forelegs, which is aggravated by the injured tendon sheath on the right foreleg.

Station VII : Radiographic imaging

This is where the x-ray comes into play, which is just as much a part of radiographic imaging as the ultrasound or magnetic resonance imaging (MRI). In Cariño's case, the navicular area of both his forelegs is x-rayed. "The images are clear without any abnormalities," the veterinarians report to the relieved owner. This excludes that any significant injury to the navicular area is responsible for the pain. The veterinarians are instead thinking about an acute inflammation, possibly caused by overstressing. "We have a lameness and a positive anaesthesia that shows clear improvement," they sum up. They assume the inflammation will heal on its own. Next, the injured tendon sheath is examined with ultrasound, as soft tissues do not show up very clear on an x-ray. "The tendons are located near the fetlock joint, between the skin and the bone," Kaminski explains. This includes the superficial flexor tendon and the deep flexor tendon. The veterinarians examine the structure of the tendons. Affected tissue shows up black, healthy tissue shows up white. "Oedema is really pitch black," the veterinarian explains. While the structures of the superficial flexor tendon are clear white, the deep flexor tendon is markedly darker. "But this tissue is not completely damaged by any means," Kaminski says, "It is more like a small injury on the edge of the deep flexor tendon." So a minor tendon injury.

Station VIII: therapy and prognosis

"This type of damage is often caused by trauma," Kaminski explains. This sounds worse than it really is. Cariño probably hit his own tendon. "It is a clearly marked area, however," the veterinarian says optimistically. The prognosis is relatively good. "A tendon takes time," he emphasizes. "We are not talking about a few days, or two or three weeks. It really takes longer." Lots of walk and exercise on a hard surface is what awaits Tanja Kiefer and her PRE-stallion over the coming months. Besides this, she will have to try to improve blood flow in the affected leg. Cooling is very important in this respect. "There are very few blood vessels supplying this area. The Tendinocytes, or tendon cells, rejuvenate about every six months; which is the minimum time you should take for the recovery. Besides the cooling, blood therapy combined with shock wave therapy can be used to speed up the recovery without producing scar tissue. The horse's own blood is especially treated for this autohaemotherapy combined w shock wave therapy, to encourag cell regeneration of the tissue. T is a viable option for Cariño. Ow Tanja Kiefer is relieved by the diagnosis: "I am happy this is something of a passing nature." She doesn't mind that her dress stallion will be out of contention for a few months.

Case 2
Suspected cartilage injur

'Came from Holstein' is the nam of the 4-year-old Holstein mare brought before Dr. Mark Kaminsk and his colleagues next for a thorough examination. Her own says she suddenly turned up ver lame in the field. At first, an inju to the suspensory ligament in th left foreleg was suspected, but th was subsequently not confirmed an ultrasound. After two weeks rest, the lameness has subsided bit, but it is still very clear in trot "The horse falls onto its right foreleg quite clearly, which is ver visible on the hard surface," Kaminski confirms. After the clinical examination; local anaesthesia and radiographic

Why is the horse only presented in walk and trot?

Lameness is most visible in trot. If it is visible in walk, you are dealing with a severe lameness already. Canter, therefore, plays no major part.

Checklist: the most important clues for the vet!

- How long has the horse been lame?
- How did it start?
- Has it gotten worse over time?
- When does it get worse? Does it get worse after riding, or does the horse work itself out of it?
- Is the horse lamer to the feel on a hard surface or a soft surface? More in turns or on a straight line? This will help the veterinarian determine whether the horse is lame on the offside or lame in the turns on the nearside.

"The owner should first try to classify the lameness themselves," Dr. Mark Kaminski says. The owner should look very closely at the problem, but give a mild lameness a few days to heal on its own. It is important that the owner does not experiment with anti-inflammatories. This will influence the diagnosis when the veterinarian eventually has to be called. Crucial symptoms may be repressed, or problems could be aggravated.

maging will again provide more onclusive answers. In this case, owever, x-rays of the bone tructures are taken even before he local anaesthesia, to exclude ny hairline fissures and such. Thankfully, the x-rays are clear. The nare has a so-called supporting-imb lameness. Kaminski explains hat this term encompasses ameness in the lower aspect of the imb, such as the navicular area, oof joint, pastern joint and short astern, right up to the fetlock joint. Mixed lameness is more often aused by changes in the middle of he limb. An injured suspensory igament is a classical example of uch a lameness," the equine eterinarian states. A swinging-limb ameness, on the other hand, is dentified in the swing phase of the imb, when it is lifted and brought orward through the air. "When omparing both sides, it looks as hough the horse cannot lift the leg nd bring it forward properly, while n the case of supporting-limb ameness, the footfall is shortened nd the weight is placed on the ther side. A knee injury is a lassical swinging-limb lameness." or Came from Holstein, the ameness has improved after naesthesia in the navicular area, but still visible. After anaesthesia to the hoof joint, the horse is completely sound, even on the circle. Therefore it is clear the cause of the lameness lies in this area. "I am most concerned about the need for treatment. She is in foal, and should return to the field," the owner explains after the horse is x-rayed. To his relief, the veterinarians see no abnormalities in the images. "After the anaesthesia and the x-rays, we can assume that the mare has an injury to the articular cartilage," Kaminski says, "But we can only be sure after an x-ray. But in a four-year-old horse, in which the lameness has already improved, it is not necessary." One or two weeks of rest and a hyaluronic acid injection should help.

Case 3 and 4
Chip damage

Sound, but with a big swelling on the right hock, a two-year-old mare by Cornet Obolensky is presented in the practice of the equine veterinarian. No further clinical examination is carried out, but the mare is taken directly into radiology. Suspicions of bone splinters in the tissue are strong. "In the x-ray images, we also see the swelling in the hock joint very clearly," Kaminski explains. Much more telling are the small, isolated shadows in the x-ray, confirming the suspicion of fragments that have penetrated the tissue. "We have to remove these surgically," the veterinarian says. The horse will remain at the clinic. Shortly afterwards, a clear case of an injury to the suspensory ligament is brought in. A dressage horse

Why are there check-ups?

It is hard for an untrained eye to detect a few lame steps. Only the veterinarian can determine whether the range of motion is back to normal.

Ultrasound can be used for examining the soft tissues, as they do not show up very clear on an x-ray.

The x-rays show clear evidence of chips in the hock joint.

ddenly developed a marked meness in the left hind leg at a mpetition, and shortly afterwards e fetlock joint started to swell up. ter clinical examination, the terinarians can clearly see the use of the problem in the trasound. "The suspensory ament wraps around the fetlock nt, to keep the flexor tendon tached to the bone," Kaminski plains, "all this tissue seems to be gravated. In one place, the ament is torn completely." It is er with the sport. "Then I will eed her," the owner plans. The are can go in the field, but only th a hard, level surface.

ecessary follow-ups ack to see the doctor!

ho wants to go to the doctor nstantly? For many horse ners, follow-up appointments r their four-legged friends often em unnecessary. After all, the ury is several weeks old, and e recovery is clearly visible. But as pointed out in the box about degrees of lameness in the previous issue, inexperienced eyes often cannot detect mild lameness. Starting the training again too soon can have severe consequences. A 13-year-old warmblood mare steps off the trailer and onto the parking lot of the veterinary clinic in Bochum.

"She had an inflammation of the hoof joint and had to recover for several months," Kaminski explains. The mare, which was successful up to Advanced level in show jumping, received autohaemotherapy and corrective shoeing; "to allow the hoof joint to recover better." Picture perfect the dark bay mare trots around the paved surface as well as the soft sand surface. "The movement is very satisfying, given her age, sporting career and her history," Kaminski states. Only a minimal lameness in the turns was visible. For a short while now, the horse is being exercised again lightly. Things can only get better from now on. The corrective footwear will stay for a while,

> *"The SI-joints can indicate asymmetries and blockages in the sacroiliac region"*

however. A nine-year-old warmblood mare, also an Advanced jumper, puzzled her owner as she had progressive problems in the canter. "She jumped her lead changes with a lot of effort, and was generally very tense in her back," says veterinarian Dr. Henning Löbert, who also works as a chiropractor. After a lameness exam, the horse was also examined osteopathically. Löbert diagnosed an asymmetry in the pelvis. "The SI-joints can always tell you something about the condition of the asymmetries, and can indicate blockages in the sacroiliac region," Löbert says. "In the left SI-joint, the mare had no movement left." The difference in height would not have been treatable, but through chiropractic treatment, the muscles were loosened and blockages dissolved. "The horse is now normal, but comes back for check-ups regularly." <<

Text by Sarah Schnieder, Reiter Revue International.

uscular problems or conformational defects can aggravate lameness. Veterinarian Dr. Henning Löbert, who also works as a chiropractor, is treating a mare th an unlevel pelvis.