Kings Bounty Equine Practice Client Fact Sheet

Scintigraphy (Bone Scan)

What is Scintigraphy?

Bone scanning or, more correctly, Nuclear Scintigraphy is a routine diagnostic aid employed in specialist equine hospitals and clinics. The procedure is most commonly used as an additional diagnostic aid to help us in the investigation of the more complex types of lameness and poor performance. However, it can also be useful in diagnosing other problems such as dental disease, headshaking and certain soft tissue injuries .

How does it work?

The horse is injected intravenously with a combination of two drugs; one is a special dye that attaches itself to all active bone cells in the skeleton and the other is a radioactive compound. After injection these combined drugs are distributed through the body via the bloodstream and settle on bone cells. Highly active bone (e.g. because of injury or infection) attracts more of the bone marker and therefore will be more radioactive. The presence of the radioactive isotope (Technetium M99) may then be imaged by the use of a special gamma camera and the information acquired is processed by a computer to produce pictures of the skeleton in which the bone activity is colour coded.

Radiation

Although this is a safe and useful diagnostic procedure, the technique involves the use of ionising radiation and therefore strict radiation protection regulations are applied to protect attending personnel. For this reason, horses must stay at the hospital for 48 hours after injection of the radioisotope and during this time strict guidelines must be followed by personnel attending the horse or its stable.

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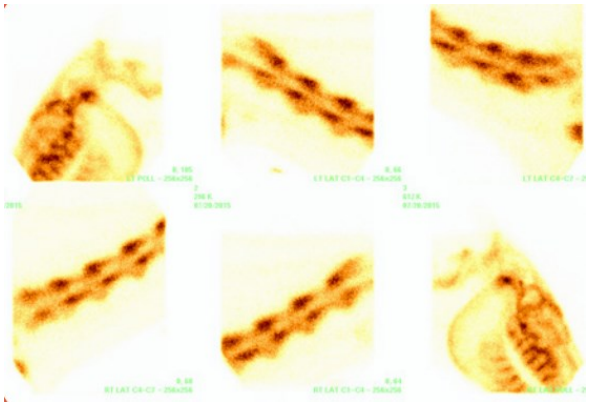
The Scintigraphy process

On the day of the bone scan the horse will be lunged (if appropriate and safe in the individual case) and then returned to his stable. Lungeing helps to increase blood flow to the limbs and experience has shown that it leads to clearer diagnostic pictures. The legs are then bandaged and the hooves taped – this helps to prevent urine splashing the legs, as the drugs are eliminated in the urine which becomes temporarily radioactive. An intravenous catheter is required to inject the drug combination. In order to place a sterile catheter a small area of hair is clipped over the jugular vein. The horse is then injected through the catheter after the correct dosage of isotope has been calculated and generated.

Around 2-4 hours later the horse is led to the bone scan room where he is sedated; this is because it takes several minutes to acquire each picture (and keeping the horse still is essential) and around 2-3 hours to acquire images. The procedure involves positioning the gamma camera next to the legs, along the body and over the back and pelvis. In some cases a horse may be too dangerous to have the camera next to it and the scan cannot be completed safely. After the horse has been returned to his stable the images will be processed and refined by the computer.

When are the results available?

The procedure does not produce immediate results that can be interpreted there and then. After processing overnight the computer generated images may need to be enhanced further or compared before your veterinary surgeon can examine them and make a diagnosis. Usually, therefore the results of the scan will not be available until the day following the bone scan.



What happens afterwards?

Specialist clinicians will discuss the bone scan findings with the client and the referring veterinary surgeon. It will also be discussed if further tests or treatments are necessary prior to discharge from the hospital. Following a bone scan horses commonly undergo:

- Radiography
- Ultrasonography
- Nerve and joint blocks
- Joint medications

Horses are usually discharged 2 to 4 days after the scan