RING BONE

'Ring bone' is an abnormal bone growth on the pastern and coffin joints, that is the proximal, middle and / or distal phalanx. It is a progressive degenerative disorder that has no cure. Ring bone affects mostly the areas at the top of the hoof and the coronary band area in the front legs. Ring bone occurs mainly amongst old age horses.

Ring bone condition is subdivided into two types, non-articular and articular ring bone.

Horses with non-articular ring bone have bone projections near the joint surface, but these projections do not affect joint structures, that is cartilage or synovium (see note below #). Non-articular ringbone is new bone growth on any of the three bones.

Meanwhile articular ring bone affect the joint surface, which involves the cartilage and / or the synovium joint lining.

Synovium is a thin layer of tissue only a few cells thick which lines the joints and tendon sheaths. The synovium acts to control the environment within the joint and tendon sheath. It does this in two ways:

1st - it acts as a membrane to determine what can pass into the joint space and what stays outside.

2nd - the cells within the synovium produce substances that lubricate the joint.

From past experience the later is more common and more serious.

Ringbone is divided into three categories, based on the location:

1. False ring bone where calcium accumulates at the sides and often the front of the bones known as long pasterns (P1).

2. High ring bone occurs when calcium build up at the bottom of the long pasterns (P1) and the upper short pasterns (P2). These deposits can progress to cover the joint area between these two bones. Once this bony built-up connect the P1 and P2 there will be quite a bit of soreness and eventually restrict the flexibility of that particular joint.

3. Low ring bone : the most common of the ring bone symptoms. Low ring bone resembles high ring bone, but affects the lower short pasterns (P2) and the upper coffin bone (P3). Low ring bone can be the most severe of the three condition. The additional calcium growth creates pressure in the affected area of the foot, this particular area is restricted by the harder tissue of the hoof wall.

Diagnosis (identification) of Ring bone

The first sign of ring bone is intermittent lameness followed by lameness. The tissue around the area may be soft and painful on deep pressure. Heat may also be felt upon palpation. But as the condition becomes chronic, the soft tissue around the joint becomes firm, a cool swelling will be evident over the pastern. In chronic cases, horses might have swelling around the pastern or on top of the coronary band associated with the coffin joint. The swelling is most noticeable on the front and sides and less apparent on the back surface of the leg.

In such cases it is essential that a vet perform a radiography to determine if a ringbone is present and of which type.

Causes of Ring Bone

Ring bone is a condition caused by excessive deposits of calcium (aka bone deposits) around the lowest part of the horse's legs in both front and hind limbs, but its more commonly found in the front. It is often caused by:

* injury,

* concussion.

* sudden exertion.

* never ending hard work, over working.

* constant knocking of the feet against a hard surface over a stretch of time.

* poor conformation.

* plus it seems to have a hereditary connection as well.

* horses with upright pasterns.

* foals with crooked limbs from the fetlock downwards place greater forces on the pastern or coffin joints, therefore increasing the risk of ring bone.

* horses with narrow or wide base are predisposed to develop ring bone.

* horses with toe-in or toe-out hooves are prone to develop ring bone.

Additionally, young fast growing horses may suffer from orthopedic diseases (osteochondrosis). Diseases in which the bones do not grow and join properly. This can cause osteochondritis dessicans (OCD), a common developing bone disease which can damage the cartilage in the pastern joint. The bone malformation will lead to ring bone condition.

Furthermore ring bone is associated with specific traumas, such as horses that pull, jerk, twist, tug their fetlock or has a significant structural displacement (subluxation) that occurs inside the pastern joint. In odd cases ring bone formation in the joint may occur as a result of medications or anesthetics injected into the coffin or pastern joint, infection may follow which then might lead to ring bone formation in the joint.

Treatment of Ring bone

Ring bone can sometimes be managed for many years, once the horse is medically treated plus cautious workouts and therapeutic shoeing to relieve the effected area, but always keep in mind it is a degenerative condition.

In early cases of acute non-articular ringbone, cold therapy with ice packs overwrapping twice a day for 20 to 30 minutes for two to three days, may help reduce swelling and pain. A course of anti-inflammatories as precribed by a veterinarian, combined with box rest, will help relieve pain and limit the bony proliferation. In many cases the base of treatment is rest. Anti-inflammatories such as Bute, Ketoprofen (Ketofen) and Banamine can help break the inflammatory pain cycle, but must be used sensibly because of side effects, always under vet's order. Intra-joint medications such as steroids and PSGAG which protects cartilage, and treats joint inflammation, are also effective.

PSGAG = Polysulfated Glycosaminoglycan, it's a joint protector, that is, a drug that supposedly protects cartilage, and treats joint inflammation. Mainly it's given to preventing, slowing, or perhaps even reversing cartilage damage.

Radiation therapy is also useful to limit the bony change. Vet consultation is always recommended.

In long term chronic cases of both non-articular and articular ringbone, permanent pain relief by neurectomy that is the cutting the nerve supply to the pastern or surgical fusion of the joint is considered a method of treatment.

In my opinion there is nothing better than a professional farrier who should balance the hoof and apply a shoe that supports the heels and allows for an easy break over. Shoeing for this type of problem has to be done in a manner that will allow the foot to function more comfortably, the mechanical method of allowing the foot to break over more efficiently and without stress can be accomplished by the creation of a roller motion action, by rounding the toe and raising the heel to allow for less restriction in the roll over movement of the foot and less pressure and strain on the affected joint and/or the tendon or ligament. Therefore a bar-shoes, rocker-shoes, rolled-toe shoes and the fitting of shock absorbing pads will help.