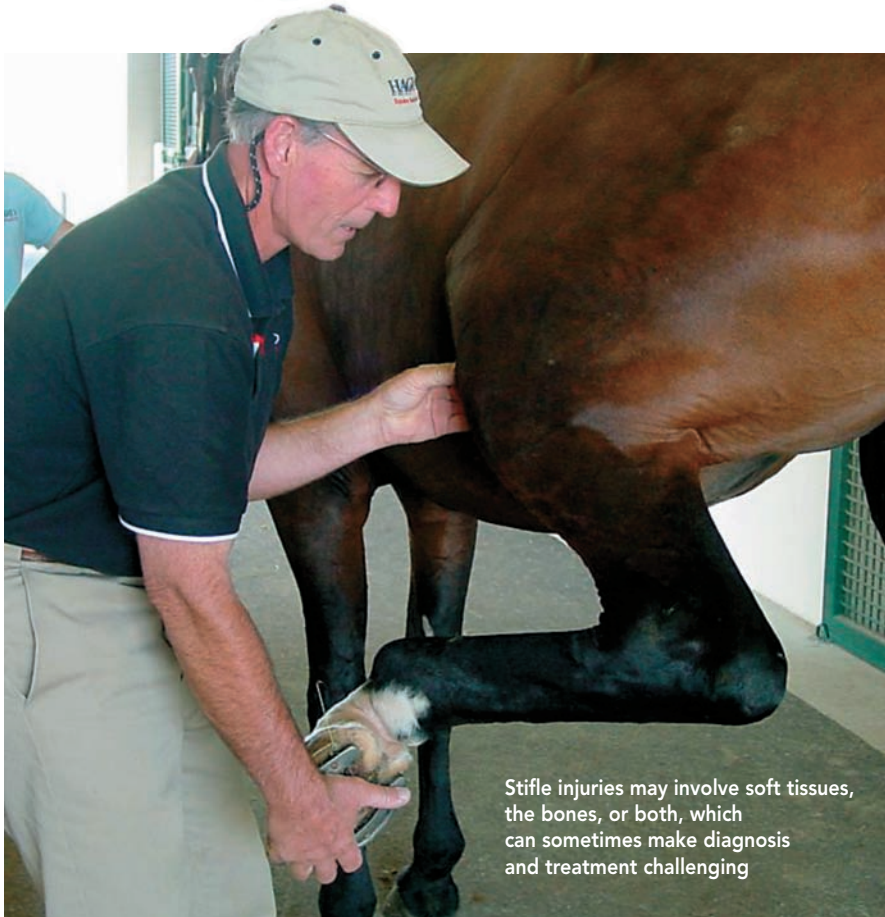




HEALTH ZONE *Lameness*

Stifle Injuries Pose a Treatment Challenge BY HEATHER SMITH THOMAS



Stifle injuries may involve soft tissues, the bones, or both, which can sometimes make diagnosis and treatment challenging

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The stifle is a large, complex joint composed of three bones, two menisci (crescent-shaped discs of fibro-cartilage attached to the joint surface), and 14 ligaments.

It is actually three joints. One is between the femur (the large bone from stifle to hip) and the patella (similar to the human kneecap) at the front of the stifle. The other two joints are between the femur and the tibia (the bone from stifle to hock), one on the inside (medial) and the other on the outside (lateral). All of these joint compartments are filled with lubricating fluid.

The stifle is one of the strongest joints in the body, but occasionally it becomes injured by a direct blow or damage during athletic stress. Stifle injuries may involve soft tissues, the bones, or both—which can make diagnosis and treatment challenging.

Dr. Gary Baxter, hospital director at the University of Georgia College of Veterinary Medicine Veterinary Teaching Hospital in Athens, Ga., deals with many joint injuries.

“Of the three joints in the stifle, generally the medial joint suffers most of the traumatic injuries,” Baxter said. “This joint is what we call the medial femoral tibial (MFT) joint. It is associated with the medial femoral condyle and the medial tibial plateau on the inside of the thigh. There can be a wide range of injuries in the MFT joint.”

Examples include meniscal injuries, articular cartilage damage or arthritis, and subchondral cystic lesions (bone cysts).

Meniscal injuries usually involve a tearing of the meniscus—the fibrous tissue at the top of the tibia. The meniscus is attached to the tibia by several ligaments, with the cranial meniscal femoral ligament being the most commonly injured.

“This ligament is what hooks the medial meniscus to the front of the tibia,” said Baxter. “Sometimes that ligament is injured, along with injury to the meniscus itself. Seriousness of the injury is generally related to how badly damaged the meniscus is. It may not be very serious, but a true tear of the meniscus can cause considerable lameness and a lot of effusion (swelling) in the stifle. By contrast, a little fraying of the meniscus may not cause much problem at all, in terms of lameness.

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an end stage in an arthritic situation. It seems like the medial side is more prone to these problems than the lateral side."

Subchondral cystic lesions (bone cysts) are often found in young horses.

"Some of these are developmental problems, and some are traumatic injuries," he said. "A lot of these are bilateral (on both sides), but subchondral bone cysts are seen almost exclusively on the medial femoral condyle in the stifle. Sometimes you see these on the opposite tibia, and there are some reports of them occurring elsewhere in the stifle joint. But bone cysts on the medial femoral condyle are by far the more common place we find them in the stifle."

If the horse is lame and the stifle seems to be the area of concern, it is important to know which part of the joint is affected.

"Most horses that have a stifle problem show some swelling of the joint," Baxter said. "Swelling, particularly in the medial side of the stifle, suggests there is something going on in that joint. Younger horses may have some extra fluid in the stifles and may not be lame, but we still have to be suspicious that there is something wrong in the joint. Early on, some of the problems in the medial femoral tibial joint may not cause lameness, but they can be performance limiting. They may not cause much problem unless the horse is working hard."

"Whenever the problem becomes more severe, you will usually find swelling in the joints and some baseline lameness. The horse will also usually respond to flexion tests, etc., when a person is trying to diagnose this problem."

Another joint that can cause problems is the femoral patella—the front part of the stifle.

"A lot of those cases are associated with OCD lesions on the lateral trochlear ridge of the femur. Swelling in the femoral patella joint—in the front—in a young horse is often associated with OCD, but there can be enough swelling in the medial joint that the extra fluid can overflow into the femoral patella joint. So you need to check and determine whether the problem started on the medial side and is spilling over, because those two joints definitely communicate. This is usually a more end-stage problem, however, after there has already been some damage."

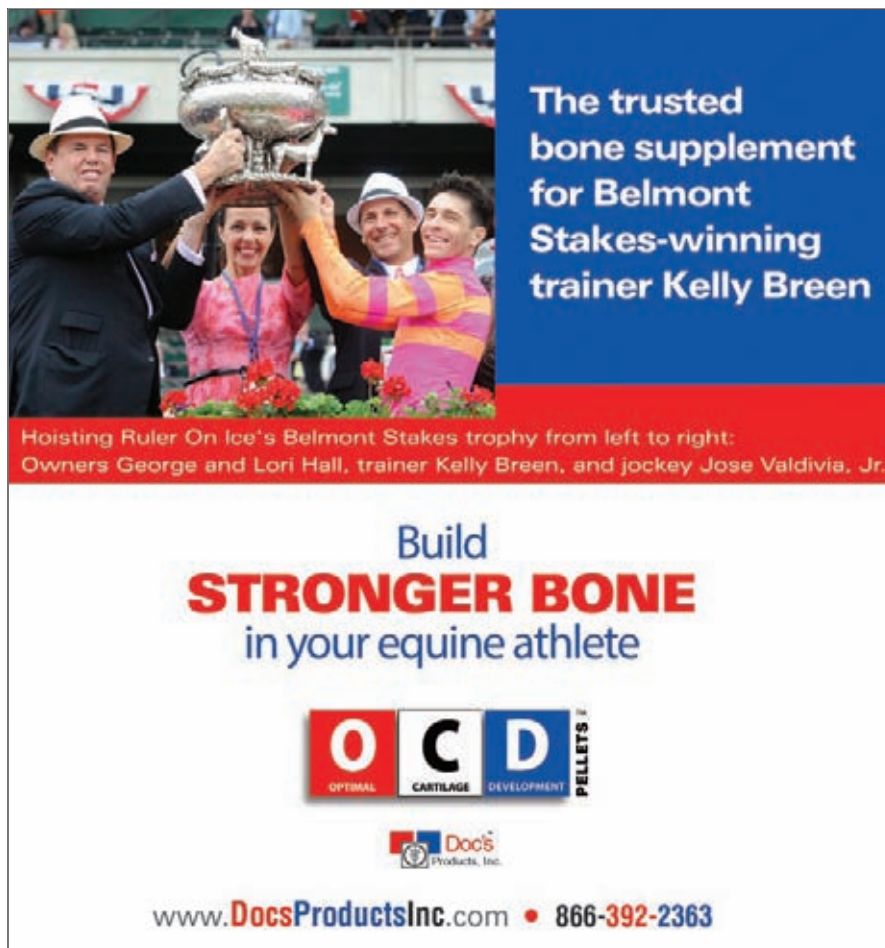
Some horses get a typical arthritis in the stifle joint, but many of these situations are secondary to previous injury.

"It's different than a hock with arthritis that is just a wear-and-tear situation that eventually leads to arthritis in the distal hock joints," Baxter said. "The arthritis

a severe stress/strain on the joint) or the result of cumulative damage over time. Many injuries seem to be due to a cumulative effect, but we are not sure if this occurs in the meniscus or not.

"Damage to the articular cartilage ap-

pears to be more common on the medial side of the stifle joint," he continued. "Cartilage damage and meniscal injuries can also occur together in the same joint. Sometimes we see cartilage damage in young horses, or it may be the result of



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that some older horses get in the stifle is often related to the work they've done, and previous injuries in that location. You have to keep this in mind when diagnosing problems in the stifle.

"Anyone training and working with horses needs to pay attention to the size and feel of the stifle, and learn how to feel for heat and swelling. This is one of the sites that we would thoroughly investigate in any horse with a rear leg lameness."

Some stifle injuries can cause mild lameness and resolve on their own or with minor treatment—some small problem that doesn't fit into one of the main categories of stifle injuries.

"It may be a situation where the horse just strained the joint capsule a little and gets some effusion and is a little off, but resolves fairly quickly," he said. "It's not always a serious problem. I generally get to see the worst problems or those that haven't responded to initial treatment. There are, however, many things that occur in the stifle that can be managed medically and respond. One of the main signs of stifle injury is joint effusion; swelling tells you there is a problem in the stifle."

PATELLA PROBLEMS

Injuries to the "kneecap" or patella at the front of the joint are often traumatic injuries from a kick, or running into a gatepost or something solid.

"The most common patella fractures I've seen were stallions getting kicked by mares they were breeding," said Baxter. "Small fragments can be removed, and the horse can do well. Prognosis depends on the size of the piece fractured off and whether it's one piece or multiple pieces. The best thing to do in most cases is to remove the fragment, or the horse will end up with arthritis from the constant irritation and continuing damage."

Upward fixation of the patella (locked stifle) can also cause

damage, especially if this happens repeatedly in that horse.

"Intermittent or complete locking can be a problem," said Baxter. "It seems like this is most common in young, growing horses, and some of them tend to grow out of it."

Others suffer damage from frequent locking.

"Often you can train/condition a young horse out of the intermittent locking just by strengthening the supporting structures. But if it's truly locked and you have to unlock the joint, then you must decide how to treat it. Some of those can be difficult to resolve. The ones that keep locking may need surgery though most of them can be exercised to strengthen that area, increasing muscle tone."

Keeping the muscles around the joint strong can help keep the patella from slipping out of place.

Sometimes horses develop upward fixation after a layup for some kind of injury. They are not exercising and lose muscle tone, which allows the patella to move around a bit and slip out of place.

"In these cases you can sometimes get the muscles strengthened again and get the horse back to where it doesn't happen," said Baxter. "The problem is the horses that truly lock and continue to lock can't be exercised because they are locking all the time." This seems to be more common in ponies, miniature horses, and certain individuals due to the way the stifle joint is formed.

"Some of the horses that repeatedly lock have to be treated surgically to get it resolved, or they will just keep doing it. The joint may lock so badly that they will be dragging the leg and damage the front of the hoof and pastern."

DIAGNOSIS

"Usually we can diagnose an arthritic problem in the stifle because there are fairly characteristic radiographic changes," said Baxter. "Arthritis seems to affect the medial femoral tibial joint more than the rest of the joints in the stifle."

To diagnose problems in the stifle, nerves to the joints can be blocked to pinpoint and confirm. But radiographs are also fairly easy to do, as well as ultrasound.

"We can see a good part of the stifle with ultrasound," he said. "It can be useful for picking up meniscal problems or damage on the condyle. It can also show injuries to the patella ligament that runs down the front of the stifle and the collateral ligaments on the sides.

"Ultrasound is probably a little less helpful for diagnosing injuries to the cruciate ligaments. Those are a little harder to see than the meniscus. This is another injury that sometimes occurs, but fairly uncommon in horses as compared to dogs. It usually takes a fair amount of trauma in a horse to damage the cranial cruciate ligaments.

"Most cruciate injuries in horses occur if they get their leg in an odd position and suffer a lot of strain (the leg being caught and jerked). We don't think it is a slow, degenerate process with cumulative damage, but probably due to sudden trauma. In dogs it can be degenerative, with partial tears, but we haven't recognized that type of injury in horses."

Besides the cruciate ligaments, the stifle joint has collateral ligaments.

"If a horse gets its foot caught, this can cause a severe traumatic injury, pulling those ligaments," he said. "The collateral ligaments are very stout, and if they are significantly injured you can generally diagnose this either with a physical exam or ultrasound. The meniscus can also suffer severe injury at the same time as the collateral ligaments. There are many variations of lameness you can get with a stifle injury."

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it gets better. It's important to have a good lameness veterinarian examine the horse and get a proper diagnosis.

"If there's swelling around the stifle and significant lameness, have someone look at it quickly to figure out what can be done," said Baxter.

"Interestingly, horses that have true OCD lesions in the front joint can have a lot of swelling and not be lame at all. These are generally young horses that have fragments on the trochlear ridges. I think the reason they don't have lameness is because the lesions are on ridges that are not weight-bearing. Even though they may have a lot of extra joint fluid, they just glide when the horse flexes the joint.

"Most of the injuries that occur on the medial joint, by contrast, are on the weight-bearing surface of the bone. There is much more lameness associated with those injuries."

Baxter feels it is important for young veterinarians who work on horses to be able to palpate the stifle thoroughly, know where the effusion is, and do an adequate and thorough lameness evaluation and physical exam of the stifle.

"This can reveal a lot about where the

problem is and what the problem might be," he said.

The primary diagnostic modalities for stifle injuries are radiographs and ultrasound. Baxter said that some facilities can do an MRI or CT scan of the stifle. An MRI is not a routine diagnostic tool, however, and CT scans are more commonly performed on the lower leg.

"To definitively diagnose some stifle injuries, we often have to actually go into the joint and scope it, with arthroscopy," said Baxter. "You can get a good feel for what's going on with radiographs and ultrasound, but sometimes the definitive answer comes when you actually look inside the joint."

TREATMENT

Depending on what the veterinarian finds, treatment can vary.

"Some of the meniscal injuries can be debrided if they are accessible," said Baxter. "Some of the tears are easily seen with the arthroscope and others are not. Most of the time we try to debride what we can of the meniscus, but it's not uncommon to have other damage to the cartilage in the joint at the same time. We try to clean it

up as best we can, and then the prognosis depends on the amount of damage to the meniscus and articular cartilage.

"Many veterinarians are treating these joints after the arthroscopic surgery with some of the biological products and regenerative medicine, to speed healing. We know that the meniscus and the cartilage take a long time to heal, so we try to speed the healing and have better healing."

Regenerative medicine includes use of stem cells and platelet rich plasma.

"Bone cysts can be the most difficult to know how to treat because there are a lot of different options for treating cysts in the medial femoral condyle," he said. "These options have changed many times since I started doing surgery. We don't have exact knowledge about what is the best treatment for some of these subchondral bone cysts. We started out by going in with an arthroscope to debride them, and now some people don't debride them and just put steroids directly into the cysts to try and decrease the inflammation.

"There's no one perfect solution that we know of right now regarding the best way to treat some of those bone cysts. But there are several things that may help." BH

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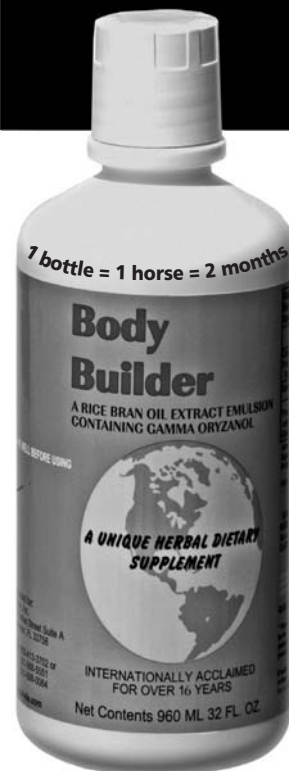
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