Stifle Lameness

The horse's stifle is equivalent to our knee. Inflammation of the stifle is called "gonitis' – a term infrequently used and about as specific as "kneemonia"! The stifle is a vast area with 3 joints, 4 bones (the femur, fibula, tibia and patella), 2 menisci and 14 ligaments!
Stifle problems are quite common. Can you tell if it's a stifle or a problem elsewhere? It's pretty tough because a horse's way of going doesn't really tip us off. In other words a foot lameness can look like a stifle or hock and vise versa. There is one stifle condition that does show up as a characteristic gait issue and that is upward fixation of the patella. In simple terms the horse's knee cap (the patella) gets stuck over top of the inside head of the femur. When in this location the leg is "locked" in extension meaning the horse is stuck with a straight leg that can't flex. If this happens for a split second it's called "intermittent" upward fixation. If the horse drags his straight leg continuously then its just an upward fixation. Why does this happen? Horses are susceptible to this problem if they have a straight legged conformation. Also young horses with poorly toned muscles are especially at risk. Exercise will hopefully condition the muscle that "pulls" the patella sideways and "unlocks" it (the gluteus femoralis). If exercise alone is insufficient then injecting this muscle or the medial patellar ligament with an irritant as iodine may help "tighten" the system. Surgical treatment such as cutting the medial patellar ligament is now only recommended for truly obstinate cases since complications are not uncommon. Modified surgeries such as tendon splitting of the ligament are safer and do not result in patellar instability or fragmentation of the tip.
Okay, you're horse isn't locking his stifle but is still lame. How do you tell it's a stifle?
Swelling in the area is usually a home run. The problem is that there is a normal fat pad at the front that frequently masquerades as stifle swelling and can be misleading. This fat pad is also the reason why injections at the front of the stifle take a while to work since drugs get deposited into the fat instead of the joint. The stifle does have many pockets called "recesses" that can show swelling if inflamed. These swellings are not obvious in well muscled horses. The heavy muscling around the stifle is the reason why many horses with considerable stifle injury can continue to perform – the muscles compensate!
Muscle loss in the affected limb may be present if the lameness has been around for a while but is usually not specific for a stifle issue.
How about provocation tests such as flexion tests? Great idea and vets usually use these but flexing the stifle means that the hock and fetlock is also flexed. Why? It's because the horse has this fancy pulley system in the hind legs that is called the reciprocal apparatus. If you straighten the hock, the stifle and fetlock automatically straighten! If you flex the hock, the stifle and fetlock automatically straighten. If they don't then something has ruptured (such as a tendon called the peroneus tertius).
So, a flexion test is used to aggravate a stifle lameness but it is not specific – it can aggravate any issue in the leg!

OK – so far our horse is lame, has no visible swelling and goes lamer after flexion (at least we are working on the correct leg!).
Ruling out the rest of the leg is a good next step. Hoof tester exam is useful to rule out a foot issue. Because of the high incidence of pastern fractures and other bony issues in race horses I like to fluoroscope or X –ray the lower leg at this stage. This rules out bone related lower limb issues or tells us that multiple issues may be involved. Only 30% of stifle problems show up on radiology. Digital rads are higher quality so we generally can increase that statistic. Many bone issues such as OCD (osteochondrosis) respond to arthroscopic surgery but what if the stifle x-rays or fluoroscopy are clean?
Then we can start blocking the horse to rule out the hock and distal limb or simply start ultrasounding. Blocking is very useful but a quick ultrasound exam of the stifle can reveal hidden swelling that can be a tip off to an area of concern. There are three separate joints in the stifle which can be examined from the sides, front and back. Almost all the

ligaments can be examined by using different frequency probes and flexing the stifle joint.

Therapy or blocking a suspicious joint may include injecting the affected joint recess under ultrasonographic guidance. This is unnecessary for most joints such as a front knee (carpus) where it's a no brainer that you are in the correct spot, but extremely productive for upper limb areas.

Ultrasound is definitely a modality that is operator dependant. A thorough knowledge of the 14 ligaments, bones and menisci is essential to ensure proper evaluation. This is not easy so other technologies are attempting to assist. These include MRI, CT & nuclear scintigraphy. Each has its attributes & drawbacks. Cost is appreciable for all three. General anesthesia is needed for MRI & CT. At present MRI machines are too small to fit a horse's stifle. This will change with time as more human "bariatric" machines become available. CT is presently only available at UC DAVIS & nuclear scintigraphy or a "bone scan" will tell you if the stifle has a "hot spot" but doesn't tell you what the problem is.

How about arthroscopy? I love it for issues noted on ultrasound or radiology but when using it diagnostically arthroscopy can only reveal problems observable in the part of the joint accessible to viewing. It also requires a general anesthetic.

In summary, a thorough stifle evaluation can be made with an exam, radiology and an in depth ultrasound exam.

Therapy depends on radiographic & ultrasound findings. If arthroscopic surgery is not indicated the list can include routine or more exotic therapies such as Tildren, PRP, IRAP & shock wave therapy.

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