

Tough Breaks

Mending broken bones in young calves.

by Heather Smith Thomas

Cattle have strong bones, but occasionally suffer fractures, and it's generally a leg. Often, it's a young or newborn calf, and the fractured limb should be cast or splinted for proper healing. Calves' legs are commonly broken when pulled with improper pressure, says Bill Lias, DVM, from Interstate Vet Clinic in Brandon, S.D. Other common causes of fractures include being stepped on by the cow or trampled. If cattle are spooked by dogs, predators or fighting, they may step on a young calf. Sometimes calves are accidentally struck or run over by a four-wheeler or off-road vehicle since newborns often hide in tall grass.

leg is much harder to stabilize than a fracture in the lower leg. "You need to immobilize the joint above and the joint below the fracture, and this is easier to do on the lower leg," Lias says.

Another indicator of recovery is whether there is an open wound and contamination. "If a sharp piece of bone pokes through the skin, this is what we call an open fracture, and success rate for healing is lower because there is risk for infection in the bone." You want to immobilize and protect the fracture before it pokes through the skin.

"I've had some open fractures heal, with good care — utilizing antibiotics and a good cast or

important, as long as the leg is functional after it heals, so the calf can make it to the feed bunk or be sound enough to become a cow.

Creating a cast

There are many ways to stabilize a leg fracture. Lias usually uses a fiberglass cast because it's handy, quick and easy to apply. "Many producers repair their own fractures, however, and are very successful. Something as simple as a good splint and duct tape can work. Usually, three to four weeks of immobilization is adequate time for the bone to heal," Lias says.

Robert Cope, DVM, has cast and splinted hundreds of broken legs in calves at his Salmon,

him out for about an hour. This gives a person time for what you need to do with the leg."

It's best if a veterinarian sedates the calf, though, because some of these drugs can be dangerous at the wrong dose.

To immobilize the leg, Cope starts with a stockinette, or a tube bandage made of soft, loosely knitted stretchy fabric, then pads it with roll cotton, wrapping with vet wrap to hold it securely in place. Then, he uses fiberglass vet-casting tape to create a cast. Generally, one six-inch roll of this "instant cast" tape is enough to do the job. This usually adequately immobilizes any fracture below the knee or hock.

"Breaks above the knee or hock are difficult because you need to stabilize the joint above and the joint below the fracture. It's hard to do that with the stifle or elbow unless you use a special kind of crutch splint. The good news is that most fractures are on the lower leg — either from being stepped on or having a chain slip when the calf is being pulled — and those calves heal quickly," Cope says.

Young bones are growing so fast that they can heal quite well even if the ends are somewhat displaced.

"There is a saying in human pediatric orthopedics that if the bone fragments are even just in the same room, they will eventually reach each other. If you get them fairly close together and reasonably straight, they will heal in about three weeks. I like to leave the cast on a little longer, just to be safe, but you also have to allow for growth of the calf — and not have the cast get too tight," Cope explains. "Sometime between two and three weeks, I tranquilize the calf again (so he won't be struggling) and cut the cast down the side. This makes a clam-shell effect so you can open it up a little and provide more room for the growing leg, and then tape it back together with more space for the leg. Give it another couple of weeks before you remove the cast, and the leg is healed."

If you can keep the calf and its mother in a small pen where it doesn't have to travel to follow her around, the leg will heal nicely.

"If the fracture is stabilized, usually the calf can keep up with mom, get up and down, and if he doesn't have to travel long



Producers can create an emergency splint for calves with broken legs by simply wrapping the leg securely between alternating layers of cotton padding or towels and vet wrap or elastic bandage. This will keep the leg secure until a veterinarian can visit the ranch to apply a hard cast.

"The good thing about fractures in young calves is that they heal quickly. Their bones are growing so fast that they can grow new bone very effectively. Calves are also hardy and stoic; they can withstand the pain issues better than a foal, for instance," Lias says, "which helps their chance for recovery."

The location of the fracture dictates how easy or difficult it will be to stabilize. Higher up the

splint. Surprisingly, some of those calves do fine, so I don't give up on them. They sometimes amaze us regarding their ability to heal," Lias says.

Another factor that improves the prognosis of treating fractures in calves is that producers don't require cattle to be athletes; cattlemen just need them to heal and make market weight. It doesn't matter if a leg heals with a blemish. Having the bone perfectly set is not as

Idaho, practice over the last 44 years. "To get the broken bone set correctly so it can heal, it needs to be supported so it's not weight-bearing and then wrapped tightly so there's no movement. It's easier and most successful when we can keep the calf from moving and struggling while we apply the splint or cast. I like to give him a tiny bit of tranquilizer so he's quiet," he says. "I use about 1/12th of a cc of Rompum, which knocks

distances, the leg will heal. He needs to be in a place that's clean and dry," Lias says. You don't want him walking through mud and manure.

"Anything you use for a cast that goes down to the hoof will wick moisture if the calf walks in mud or water," Cope says. "The stockinette gets soggy and pulls moisture up into it." If weather is wet, you'll want that calf and cow in a sheltered place out of the snow or rain, and where the calf can't walk in any water.

Quick splint

If a rancher needs to do emergency splinting to stabilize the leg until the veterinarian can apply a cast, Cope recommends using a lot of cotton and pressure from an elastic bandage.

"Then the important thing is to keep the calf really calm and quiet so he's not trying to move around very much. You don't want him walking around with risk for compounding that fracture (pushing the broken bone or a bone fragment through the skin)," he explains.

The best type of splint is simply layers and layers of padding. While PVC pipe works

well for resolving contracted pasterns in newborn calves, it's harder to make PVC pipe work to splint a fracture. It's hard to find the right size of PVC pipe that fits the leg. Generally, the pipe will be too small or too big — never the right size.

"Unless it's a good fit, it may do more harm than good," Cope says. "Sometimes we use what is called a Robert Jones bandage, and all it consists of is a lot of cotton in a really tight wrap. If you can do that, you can stabilize a fracture pretty well, even better than with a PVC pipe splint. The pipe is awkward to use, whereas the wraps fit perfectly and snugly."

The best padding is roll cotton, but if you don't have any cotton, you can use small soft towels. "The trick is to have a lot of tight padding; it can't be at all loose, and you have to apply it all the way down over the hoof, so you don't cut the blood circulation off at the coronary band. This is why it's helpful to have vet wrap and elastic bandages, applied in layers. If you use a lot of padding, put on one layer and wrap it down tight with the vet wrap or an elastic bandage, and then apply

more padding over that, and then wrap it tight with another elastic bandage or vet wrap," Cope says. "Then it is solid and secure and can't slop around and get loose. If you can use multiple layers with multiple wraps, it will work very well."

It's padded and soft against the leg, but very solid. "You can get this kind of wrap almost as hard/solid as a cast. This will work for a few days, if necessary, but then you really need your vet to apply a cast. It's almost impossible to loosen it (to allow for leg growth) without taking it completely off. If you have to take it clear off to reapply it, the unsupported healing leg is at risk if the calf struggles while you try to do it. Once your vet puts a cast on the leg, you can eventually cut it lengthwise (for enlargement), leaving half of it on, to keep the leg stable while you are doing it," Cope explains.

Fractures above the knee or hock, or above the elbow or stifle, are more difficult to manage because it's harder to stabilize the joint above it — the shoulder or hip. Sometimes a plastic dog splint (for a large dog) will work for a hind leg fracture between hock and stifle; this

splint is shaped to fit the hind leg and can be applied after padding the leg and secured with stretchy tape.

"On a hind leg fracture above the stifle, you need to immobilize the hip joint and that's very difficult to do without an elaborate cast or what we call a Thomas splint," Lias says. "It can be done, but the expense may surpass the value of the calf unless it's a valuable breeding animal."

Often the only thing you can do is keep the calf in a confined area where it doesn't have to move much at all, and sometimes these will heal. **HW**

Editor's Note: Heather Smith Thomas and her husband, Lynn, have ranched near Salmon, Idaho, for more than four decades. She also writes cattle articles that appear in numerous U.S. and Canadian cattle publications, including *Hereford World*. She is the author of numerous books, including "The Cattle Health Handbook."