

Orthopedic Emergencies...is there really such a thing? Ya, ya, you betcha! How can you be a joint or a bone's best friend? Read on...

PART 1. JOINT LUXATION

The longer a joint is luxated, the poorer the prognosis for two general reasons. First, hyaline cartilage is very picky when it comes to its environs. It wants joint fluid and only joint fluid. No serum, no blood, no PMNs, and certainly no fresh air. And second, the longer (time) the support structures are discombobulated, the longer (length) the joint structures end up being. Say goodbye to a nice tight joint.

So, when that patient comes in with a luxated hip or elbow or hock, put it back in its happy place **that same day** (if anesthesia can be tolerated.) Most luxations need a high dose of an analgesic and a low dose of an anesthetic to get the work done. Remember that narcotics/opioids are one of the safest drugs we have on several important fronts-- cardiovascular, renal, hepatic. Once that is on-board, a little bump with propofol (followed with intubation/gas anesthesia as needed to lengthen the time interval to work), is all that is needed.

HIP TIPS: (CRANIODORSAL LUXATION)

- Sling a leash/strap thru the groin and have an assistant put counter traction while you pull on the leg.
- Disengage the luxated head with strong, steady traction with the legs together (adducted) and the knee pointed skyward (external rotation).
- Reduce in one sweeping motion maintaining traction, rolling the head in (internal rotation) and spreading the legs apart (abduction).
- Keep one hand on the trochanter to "feel" your way thru that sweeping motion.
- Once it is reduced, apply pressure on the trochanter and spend a good five minutes "grinding" the hip into the socket thru range of motion (this pushes the torn joint capsule, blood clots, etc. out of the acetabulum.)
- Don't just drop the leg and walk away; full adduction will pop it right back out. Keep it held slightly abducted or prop it on a rolled towel while you get sling supplies ready.
- A sling is an option if the head has a tendency to want to stay in...this is an art, so you'll just have to play with a few and see. Remember, you can **always** reluxate it **when testing** it. The question is, does it "want" to stay in?
- Sling it or send it for internal surgical reduction/stabilization as indicated.
- Even small dogs and cats do better with their own hip (versus an FHO). Let's save some hips!

HIP TIPS: (VENTRAL LUXATION)

- This is usually a traction injury, "He got his leg stuck in the leash."
- Their leg is very straight, sometimes the patella is luxated laterally because the leg is so rotated.
- Your technicians will screech and say "something popped when we took the VD." (Congratulate them, cuz they just reduced the luxation!)
- Indeed, reducing these just requires caudal traction, like you are taking an OFA film. (Give the poor dog/cat some pain meds/narcotic first!)

- Stabilization requires **hobbles not a sling**. Hobble the hocks hip-width apart.
- **Learn *The Triangle*** for your routine exams-- very simple. Hip luxations (both kinds) are a physical exam diagnosis...long before xrays are needed. (Check out "hip luxation" in any surgery text; they will talk about *The Triangle* to help diagnose a luxation.)

ELBOW ADVICE:

- These hurt. Get them done quickly and use the narcotics to allow enough relaxation.
- The elbow is *the most unforgiving joint* of all; reduce it!
- Open the book and follow the instructions; seems highly technical, but it really is simple.
- This is a finesse one...no brute force.
- Splint it in extension and send it for surgical evaluation of collateral ligament.

HOCK HINTS:

- Hocks are usually open luxations. Clip and clean well with copious saline/LRS lavage (use a bag or two). Mask and gloves and clean work area; we don't want hospital bugs in there.
- Reducing is pretty easy; nothing technical, no force needed.
- These will need surgical stabilization.
- Splint and manage the wounds actively so they are a good surgical candidate.

A NOTE ON CUSTOM SPLINTS VS. OFF-THE-SHELF SPLINTS:

There are a plethora of splints of various shapes and sizes you can buy and stock, or you can buy one product that "fits all" and actually works much better with fewer bandage complications. All too often, the stuff you have in stock is the wrong size, wrong shape, and difficult to trim (so you don't); and your stock probably takes over 10yrs to cycle thru. So, I'd like to propose an easier option. Buy 3" casting tape from 3M (buy local!). You can make a custom-fit splint in less than 3 minutes with some exam gloves and a dogbowl of warm water. No cast cutter needed, no special supplies, minimal learning curve.

Most splints are either lateral or caudal...well, now that I think about it, 100% fall in those two locations. You'll be right at least 50% of the time-- so, no stress!

- Foot-- caudal
- Carpus/antebrachium-- caudal
- Elbow-- lateral
- Hock/stifle-- lateral
- Spica-- lateral

To make a casting tape, custom splint, you will need the product, a bowl of tepid (i.e. lightly warm) water deep enough to submerge the roll, exam gloves to keep the goo off of your fingers and your assistant's fingers, scissors and roll gauze/kling.

Start with a snug cast padding and roll gauze/kling bandage bridging the offending site. Make sure you have read thru this and have the plan in your head and explained to your assistant; time is important here...**no futzing around**.

Don your gloves. Open the casting tape, hold it in one hand and dunk it into the bowl of water. Give it a gentle pinch/squeeze to burp some air out and let the water penetrate-- 5 seconds. Remove it and give a gentle squeeze and shake to remove some water. **Get moving**.

The easiest way to make the splint is NOT on the animal. Use the bandaged leg only to get the length you need...unroll the casting tape to appropriate length, then hold it up and start unrolling and folding the tape-- stacking the folds on themselves to the thickness of layers you desire. (More about this below.) Cut off the excess if appropriate.

Now, simply lay it on the bandage (laterally, or caudally with some fingers gently holding it in place for you). Do NOT poke fingers in the casting tape or make impressions of any kind; these translate as bumps on the inside and pressure sore potentials. **Immediately** start to apply the roll gauze/kling to custom form the splint to the bandaged leg before it hardens. *Remember, NO finger marks/indents.* Support the casting tape broadly with a cupped hand as needed. Snug the roll gauze to conform the soft casting tape as you go.

Once you finish the gauze at the top of the bandage, shape the leg appropriately before it hardens (**flex** the toes/foot a bit, **extend** the carpus a little to a standing angle, **extend** the elbow, **flex** the hock a tad). Remember, NO finger marks; just use the broad surface of your hands to shape and hold while it hardens.

Once it is hard (just tap on it over the next 2-3 minutes until it is hard), allow it to air dry a 2-3 minutes, then apply your vetwrap. I also add a patch or two of elasticon to the walking surface of the foot area to reduce premature wear.

A short commentary on splint rigidity--

Most splints are overkill...inappropriately so. This is especially true in small breeds. The 3# yorkie does NOT need a splint bigger than its leg that weighs more than its body! I hesitate to give a body weight cut off because the rigidity issue is more related to the size of the bones/leg and less concerned with the body weight. So, roughly speaking, dogs/cats weighing less than 10# will be supported sufficiently for joint and fracture issues with a custom tongue depressor splint.

Yes, tongue depressors. You have them in your clinic, they cost next to nothing, and they do not result in overkill complications (stress protection, impaired mobility, pressure sores, etc.) To make a custom tongue depressor splint, you will need one or two tongue depressors (depending on leg size) and 1" white tape.

Caudal splint: For tiny dogs/cats/puppies/kittens, split the tongue depressor in half lengthwise. (Just break it with your fingers; it will split roughly in half.) For regular sized small breeds/large cats, use two whole tongue depressors. In either scenario, tape the two items together (back together, if split) using 1" white tape applied in a smooth spiral with overlapping edges down the length of the tongue depressor(s). Trim the length appropriately with scissors (yes, regular bandage scissors will cut tongue depressors.) Gently bend the splint into a V-shape to accommodate a caudal limb application; apply over a prepared bandage of cast padding/roll gauze using another layer of gauze, then vetwrap.

Lateral splint: Cut lengths of tongue depressor to mimic the length of each segment of the leg (i.e. for rearlimb/hock, cut a length matching the foot, then another matching the crus/shin.) Tape these two together in the shape/angle you want...roughly standing angle. Do not make it a big bulky wad o' tape; do like the hockey players do with their hockey stick tape...nice and tight and smooth.

When making a casting tape splint, do NOT feel compelled to use the entire role of casting tape. Stop when it is thick "enough". Sorry, can't help too much from afar on that one. Start making them and feel how stiff/flexible they are. Adjust and learn from there. The only ones I have had problems with being too wimpy are large/giant breed dogs (approaching/exceeding 100#) when they have had to wear them for extended periods for nasty things like complete carpal hyperextension injury, and the owners have not been compliant with activity restriction. These start to bend at the carpus. Reinforcing with a "rebar" of aluminum rod buried in between casting tape layers works well for these.

Good luck, have fun, and let's go SAVE SOME JOINTS, TEAM!!

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