THE ORTHOPEDIC EXAMINATION AND HOW TO GET A DIAGNOSIS QUICKLY

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Key Points:
- Gait evaluation is just as important as palpation; watch the dog walk and trot towards you, away from you, and from the side
- Perform the orthopedic examination the same way every time
- Many issues are subtle so look for spasm, tension or resistance, not just pain
- If something is abnormal focus attention and diagnostics to that particular region

The orthopedic examination can be an intimidating portion of patient evaluation and many times is ignored due to this vary reason. Alternatively, the impression that an orthopedic examination is cumbersome or takes time are other excuses used when not performing the examination. Incorporating the orthopedic examination into your regular wellness examination can be a means to identify potential existing or forthcoming issues. In an otherwise normal healthy animal, the orthopedic examination should take 4 minutes or less. It is only when an abnormality is found that attention should be paid to a particular region and more time spent on correctly identifying the problem.

Common Myths for not performing an orthopedic examination are:
-If a lameness is not present then there is nothing wrong orthopedically
-I have too many other things to worry about and don't have time in a wellness appointment to perform an orthopedic examination
-The orthopedic examination is difficult, and I don't want to cause pain performing it
-I moved the joints through range of motion and didn't find any pain so the animal must be normal

In reality the Truths for performing an examination are:
-Many orthopedic problems start small with minimal lameness and only stiffness/soreness as the initial complaint. In your hospital adrenaline may mask a subtle lameness. Don't rely just on the patient to be lame in your hospital for there to be an issue
-The orthopedic examination in an otherwise healthy animal can be incorporated into your wellness examination and not take up more valuable time
-When performed correctly the orthopedic examination should be easy and not cause the patient any pain or stress
-Rather than relying on pain as an indicator for a problem the motions should bs slowed and controlled to allow for the identification of spasm, tension, or resistance to motion.

Tips to remember:
-Early identification will allow us to take a PRO-active approach to many of the developmental orthopedic diseases rather than a RETRO-active approach. This early identification will allow us to have the most profound effect in creating a great quality of life in our patients

-Don’t become a He-Man with your examination, the motions should be slow, controlled and will little pressure to the patient
-Don’t blow off a client who says their animal is lame when in the examination room the animal is sound. Many owners have videos of animals and if they offer to show it, watch it!
-Focus on the history; many times stiffness/soreness when rising or after heavy play can indicate a problem that needs further attention.
-Subtle signs such as licking the lips, panting, an increasing in breathing, or looking back can indicate discomfort that the dog is trying to hide.

Gait Evaluation:

When evaluating dogs in the clinic get into the habit of watching dogs at the walk and the trot. Don’t do this for just the abnormal dogs, but also get used to watching the normal dogs walk. To accomplish this task more space than just the exam room is needed. Use the hallway, a dedicated room for gait analysis, or even the parking lot. Anytime an owner has a video of their dog walking, watch it!! Many times, the complaint from owners is that their dog is stiff/lame when rising or after heavy play. If all you see is the dog in the clinic there may not be any evidence of lameness, but if the owner has a video of it then you can see what they are describing. I will commonly use my phone to record dogs walking and trotting so I can evaluate it. In many cases it helps to put it in slow motion. For cats I like to watch the move around the room and interact with objects. Many cats love to jump up or off of objects. So, one trick I have do is have the owner place the cat carrier on the floor and place the cat on the examination table or a countertop. Most cats will readily jump down and if they don’t or hesitate this could indicate pain or discomfort of the front limbs. If a cat jumps down and quickly tries to get their hind limbs under them this can be indicative of pain in particular from the elbows. If a cat is reluctant to jump up this can indicate hind limb pain.

Orthopedic Examination:

When approaching the orthopedic examination perform it the same way every time. I will commonly examine the limb that is potentially pathologic last to avoid creating discomfort early in the examination. I like to start at the toes and work my way up. I prefer for the animal to be standing; however, if the practitioner or the animal is more comfortable with the animal in lateral recumbency this is fine. In addition, I like to be in the floor with the animal rather than rely on the examination table. To begin for both the front and hind limbs I evaluate the paw pads for any evidence of abnormal wear and tear, wounds, foreign bodies, etc. I then will flex and extend each digit individually looking for crepitus and pain as well as evaluate for swelling. I will also squeeze each digit for discomfort. After evaluation of each digit I will flex and extend as well as squeeze the paw as a whole. From there I move up the limb checks the metabones for swelling or discomfort.

1. Front Limb:

-Lightly palpate the carpus looking for any evidence of joint effusion (most notable at the radiocarpal joint)

-Slowly flex and extend the carpus for normal range of motion, crepitus, or pain. After checking for normal range of motion try to hyperflex the carpus and hyperextend. In patients with carpal hyperextension injuries they will have a reduction in carpal flexion and have an increase in carpal extension. Be sure to check for excessive valgus and varus of the carpus to check the integrity of the medial and lateral collateral ligaments
-Palpate the flexor carpi ulnaris as it inserts onto the accessory carpal bone for evidence of swelling and discomfort
-Palpate up the radius and ulna applying pressure along the diaphysis (to rule in/out panosteitis in the skeletally immature dog
-The elbow is a HUGE source of lameness in both the young and old dog. First begin by lightly palpating the elbow for effusion. This can be done by palpating cranial and caudal to the epicondyles. Following, SLOWLY place the elbow through range of motion. In a puppy this should be like "a loose noodle" where there is minimal to no resistance to flexion. If there is resistance this should be a huge red flag for elbow pathology. Once this is completed take the elbow to full extension with a slight hyperextension checking for discomfort (if present this can indicate caudal elbow compartment pathology such as an un-united anconeal process). Next, take the elbow to a slight hyper flexion checking for discomfort (if present this can indicate cranial elbow compartment pathology such as medial coronoid disease). Lastly, hold the elbow at 90 degrees of flexion and apply pressure just cranial and distal to the medial epicondyle in the region of the medial coronoid process while pronating and supinating the elbow checking for pain. In older animals with elbow osteoarthritis, rarely will there be pain on palpation due to the degree of periarticular fibrosis present.
-Move up the limb palpating along the humerus
-Isolate the shoulder and slowly take the shoulder into a normal flexion looking for tension, spasm, or resistance. If resistance or spasm is noted this can indicate a supraspinatus tendinopathy. Once at normal flexion then attempt hyperflexion of the shoulder looking for discomfort. In some younger dogs with shoulder osteochondritis dissecans (OCD) lesions there can be discomfort on hyperflexion as the lesion is pushed up into the glenoid cavity. After shoulder hyperflexion keep the shoulder flexed but begin to extend the elbow to perform a biceps stretch test. One should be able to hold the shoulder flexed and extend the elbow. If you are not able to achieve this it can indicate a biceps tendinopathy; however, if you are able to go past the normal point of a biceps stretch test and there is a "loss of end feel" this can indicate a biceps tear. Next, extend the shoulder looking for resistance or discomfort. In younger dogs with an OCD lesion there can be discomfort at full extension. Lastly, hold the shoulder around 45 degrees of extension and place one hand on the acromion process to hold the scapula to the body wall. Slowly abduct the humerus be careful not to pull the scapula always from the body. The goal is to check for discomfort on abduction of the shoulder checking for medial shoulder pathology.
-Don't forget to palpate the axillary region for nerve pain!!

2. Hind Limb:
-Lightly palpate the hock for evidence of effusion; this is best accomplished by palpating just cranial and just caudal to the medial and lateral malleoli. Varus and valgus stress

should be applied checking the integrity of the medial and collateral ligaments. Remember the dog has both short and long components of the collateral ligaments so varus and valgus should be checked in both flexion and extension.
-Palpate up the tibia applying pressure along the diaphysis (to rule in/out panosteitis in the skeletally immature dog

-The stifle is a HUGE cause of lameness in the dog; in particular with cranial cruciate ligament (CrCL) pathology. First begin by palpating for effusion by lightly feeling on either side of the patellar ligament. Normally, the borders of the ligament can be readily palpated, and if absent this can indicate effusion. Instability of the stifle due to CrCL pathology is usually checked by the cranial drawer test or tibial compression test. The cranial drawer test is more of a passive test and does not mimic weight bearing. To perform the test one hand is placed on the distal femur with the thumb behind the lateral condyle. The other hand is placed on the proximal tibia with the thumb behind the fabella. The goal is to move the proximal tibia cranially in relation to the femur. Always check cranial drawer in flexion and extension. When checking for partial tears the CrCL has two bands, the craniomedial which remains taut in both flexion and extension and the caudolateral, which is taut in extension but lax in flexion. For example, if the craniomedial band is torn and the caudolateral band is intact cranial drawer is only present in flexion because in extension the caudolateral band is taut. If the caudolateral band is torn and the craniomedial band is intact no cranial drawer is present because the craniomedial band is taut in both flexion and extension. Cranial tibial thrust is a test meant to mimic active weight bearing. The goal is to hold the stifle at a standing angle (approximately 135 degrees) and while holding the stifle still flex the hock. If the CrCL is ruptured there should be a cranial displacement of the tibia. If no instability is noted, then place the stifle in hyperextension checking for joint pain. Following evaluation of the CrCL check the integrity of the collateral ligaments with varus/valgus stress testing. Lastly, evaluate the stifle for a medial patella luxation to determine if the dog has a medial or lateral patella luxation and the grade (I-IV). The integrity of the patella should be evaluated in flexion, extension, internal rotation, and external rotation.
-Move up the limb to the hip and first put the hip through a light normal range of motion starting with flexion and slowly extending the hip. If there is pain on hip flexion this could indicate a femoral head or neck fracture and not hip dysplasia. Dysplastic hips are painful in extension. If normal extension can be achieved, then slowly push the hip into hyperextension and hold to see if this can be achieved. In the skeletally immature dog hip laxity can be checked via the Ortolani test. The Ortolani is performed with the patient in either lateral or dorsal recumbency. The first part of the Ortolani is the Barlow test where a force is directed through the femur through the dorsum to subluxate the hip. The Barlow test is considered a provocative test in that it creates subluxation in a lax hip. The second part of the Ortolani test is the true Ortolani maneuver where the limb is abducted, and a click or clunk can be heard as reduction of the hip occurs. The clunk is considered a positive Ortolani and indicative of coxofemoral laxity.
-Lastly palpate in the groin region for iliopsoas pain. Lightly palpate into the groin to apply pressure on the lesser trochanter where the iliopsoas inserts. In addition, in patients with iliopsoas pain hip extension with abduction and internal rotation can cause pain. The “poor man’s iliopsoas test” involves picking the dog up in the flank region and seeing if they turn their head in the direction of which side may be painful.