

OSTEOCHONDROSIS AND OSTEOCHONDritis DESSICANS (SHOULDER):

Yes, there IS more than an academic difference.

**Synopsis-- Anatomy and the Disease**

Osteochondrosis in the dog shoulder starts in the bone underlying the humeral head cartilage. The bone dies or doesn't develop, and a weak spot results. The overlying hyaline cartilage is not supported physically or nutritionally; a "blister" results (The skin blister concept is the best analogy I have to explain to clients what is happening inside.) Depending on the size of the bone defect, the location and the activity of the dog, this blister may pop. Up until that moment, *osteochondrosis* was not painful, did not cause a limp, went undiagnosed (unless you happened to be radiographing these youngsters prophylactically or incidentally), and does not need surgical attention.

Once the blister pops, you have *osteochondritis dessicans*. The "-itis" is the key...inflammation = pain.

Once the blister pops, there is a flap that bangs around on the crater site and doesn't let it go about its business of filling in with fibrocartilage (thus stopping the pain from exposed subchondral bone). The flap could get nuts and break loose and go looking for trouble up on the biceps tendon sheath (a problem to manifest later in life). Or it could get chewed up into little pieces physically (I hear tell the profession used to advise "run around like crazy" therapy to break these up) and then the joint macrophages would microscopically do the rest (thus avoiding the need for the veterinary profession whatsoever).

The difference mentioned in the title is that one is a painful condition, and one is just a radiographic finding. It is really nice to know this difference when advising owners and treating patients with these conditions.

Surgical debridement of free cartilage flaps is generally recommended. This removal prevents future problems associated with a large free-floating flap acting like a rock in your shoe (or in your biceps tendon sheath.) While degenerative joint disease/osteoarthritis is a literal outcome of OCD (surgically treated or not), the clinical impact long-term of DJD/OA in the shoulder is most commonly mild; the shoulder is a forgiving joint relative to historical cartilage defects.

The "why" of this pathophysiology is likely unknowable, but there is enough data to support a strong genetic contribution and the owners of parent breeding stock should be made aware of a puppy's condition. Nutrition and activity probably have some contribution as well.

Surgical Overview:

There are two surgical approaches for flap removal—arthrotomy and arthroscopy. The shoulder can be a challenge to scope and flaps are often large, so the theoretical benefit of minimally invasive arthroscopy is often whittled away with much longer anesthesia times and equivalent sized overall incisions compared to arthrotomy. In my hands, a caudal approach to the shoulder affords a good look and a small but large enough incision to handle flap removal. No tendons or bone insertions are transected, so functional recovery is rapid.

This condition is commonly bilateral; operating both shoulders in one stage is reasonable given the quick return to function. Aggressive pain management and a high level of owner preparedness are essential to successful bilateral treatment.

Healing of the cartilage defect is by in-fill of fibrocartilage (“bandaid cartilage”); the faster this fills in, the quicker the inflammation/pain subsides. Postoperative activity restriction is intended to reduce the mechanical debridement of developing fibrocartilage.

The **indications & rationale** for surgical treatment are:

- History of forelimb lameness in large breed puppy, 6-12 months of age
- Physical exam finding of shoulder pain on forced flexion
- Absence of exam and radiographic abnormalities supporting a different diagnosis (medial coronoid disease, ununited anconeal process, elbow incongruity, panosteitis)

Other options for treatment (besides surgery) are:

- Pain management and passage of time

Supportive/ancillary options with surgical treatment are:

- Forequarter harness for liberal support/assistance with mobility (strongly recommended if bilateral surgery)

The **perioperative experience** for pet and owner includes:

- Rigorous assistance to ambulate for 2-3wks.
- Confinement area with easy access to outdoors ideal.
- Activity restriction to leash, no exercise x 6wks; gradual return to activity subsequent 4wks

Expectations for outcome are:

- Return to normal activity following 2-3mo restricted activities.
- No lifestyle limitations.

Complications that may arise with this procedure are:

- Seroma (minor-moderate, common; rarely requiring percutaneous drainage)
- Free flap not identified (minor-moderate, rare; theoretically suggests potential future flap-related problem)

Postoperative **outcomes may be poor** due to the above complications, and/or:

- Poor patient/owner compliance with restrictions

What a **surgeon needs** prior to surgery:

- Physical exam finding of shoulder pain on forced flexion (to confirm which or both leg treatment)

- Affected leg/body part “**marked**” by owner for confirmation (wax “costume makeup” works well)
- Skin near the surgery site **CLEAR of infection** (papules, pustules, crusts, collarettes, etc.) If urgent surgery, owner must be alerted to *increased risk* of incisional or deep infections.

General considerations and complications for all surgery/anesthesia procedures are:

- *Difficult and/or painful anesthetic recovery (variable; may require additional medications or re-hospitalization)*
- *Incisional infections (rare, minor; usually require oral antibiotics)*
- *Incisional dehiscence (rare, minor or major; may require surgical revision)*
- *Adverse anesthetic event (rare, major; may result in serious impairment or death)*

Proper owner expectations are important to a successful experience and patient outcomes. Please discuss this information with your clients while assisting them with decision-making for **Shoulder OCD**.

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