Novel Corrective Osteotomies: Pfeil Ulna Osteotomy for Medial Compartment Syndrome in Elbow Dysplasia

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Medial compartment syndrome of the elbow

- End result of FCP and OCD of the Elbow
- Due to joint incongruity
- short radius or short ulna
- Cartilage loss and bone eburneation
- Progressive OA
- Friction, heating, pain
Medial compartment syndrome of the elbow

- Collapse of the medial compartment
- Limb adduction
- Increased medial load
- Medial shift of the WB
- Vicious circle
- Any joint treatment is unrewarding
Medial compartment syndrome of the elbow

- Elbow incongruity could be corrected or improved only in the growing dog, before joint modification occurred.
- In the adult dog, shifting of the WB laterally causing limb abduction could decrease the medial loading.
- Palliative treatment
- Sliding Humeral Osteotomy
- Torsional Humeral Osteotomy
- Proximal Ulna Osteotomy
- Other osteotomies?
Medial compartment syndrome of the elbow

- limb abduction

- widening the ground loading contact
Medial compartment syndrome of the elbow

Courtesy of Slobodan Tepic
Medial compartment syndrome of the elbow

RIGHT LEG CRANIAL ASPECT

Courtesy of Slobodan Tepic
Medial compartment syndrome of the elbow

ULNAR PROXIMAL (PFEIL) OSTEOTOMY

CAUDAL ASPECT

MED

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Courtesy of Slobodan Tepic
Medial compartment syndrome of the elbow

ULNAR PROXIMAL (PFEIL) OSTEOTOMY

LATERAL ASPECT

CAUDAL

CRANIAL

Courtesy of Slobodan Tepic
Pfeil Ulna Osteotomy & Plate

- Ingo Pfeil pilot study
- 10 Veterinary Hospitals involved
- Dedicated ALPS 10 plates
- With 2, 3 (and 4) mm step
- Corresponding to 4°, 6° and 8°
- Plus about 5° due to natural ulna curvature
- End lateral shift of 10° to 12°
- Personal experience: 16 dogs, from May 2010
Pfeil Ulna Osteotomy & Plate

- Dogs of any age
- Severe OA developed from FCP-OCD
- Unresponsive to conservative management

Golden, M, 1.5 yrs. Labrador, M, 5 yrs.
Pfeil Ulna Osteotomy & Plate

- Planning:
  - radiographic study and measurements
Planning:

- arthroscopy to check cartilage integrity in the lateral compartment
Planning:

- degrees of correction related to amount of internal limb adduction, limb size

Tobia, Golden Retriever, M, 1.5 yrs.
Pfeil Ulna Osteotomy & Plate

- Surgery:
  - Caudal ulnar approach
  - Minimal soft-tissue elevation
  - Ulna transverse osteotomy
  - Distal to the interosseous adhesion
  - 3.5 - 4.5 cm from radial head
  - Lateral plating
Pfeil Ulna Osteotomy & Plate
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Rottweiler, F, 7 yrs., FU 6 mo.
Pfeil Ulna Osteotomy & Plate

Rottweiler, F, 7 yrs., FU 6 mo.

- Complications:
  - plate breakage
  - implant failure
  - lack of efficacy
Tobia, Golden Retriever, M, 1.5 yrs.
3° chronic left lameness

Pfeil Ulna Osteotomy & Plate

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1 month p.o., limb abduction
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Pfeil Ulna Osteotomy & Plate

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Pfeil Ulna Osteotomy & Plate

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Pfeil Ulna Osteotomy & Plate

pre-op

1 month p.o., limb abduction

Tobia, Golden Retriever, M, 1.5 yrs.

1 mo. post-op

slow motion
DISCUSSION

- Promising preliminary results
- Palliative treatment
- Further evaluations are needed
- Not yet validated
- Similar technique at UF by Antonio Pozzi
Thank you for the attention