



INTRODUCTION

The Medial Compartment Syndrome of the canine elbow is an orthopaedic pathology which is characterized by a **complete erosion of cartilage thickness** of the **medial coronoid process** of the ulna and the **medial part of the humeral condyle**, causing a joint collapse and lameness.

OBJECTIVES

The main objective is to carry out an **updated bibliographic review** on the etiopathogeny, diagnosis and treatment of the syndrome, giving special importance to the latter, comparing the different surgical techniques proposed.

ETIOPATHOGENY

There are two main **hypothesis** about its etiopathogeny

RADIOULNAR INCONGRUENCE (RUI)

RUI → repetitive mechanical overload on the medial compartment of the elbow → subchondral bone lesions → cartilage erosion

KISSING LESIONS

Abrasions due to fragments of the medial coronoid process or cartilage flaps → cartilage erosion

DIAGNOSIS



Figure 1: Physical and orthopaedic exploration:

Non-specific clinical signs of elbow pathology.

Image from: Own source



Figures 2-4: Radiography₍₂₋₃₎ and Computed Tomography₍₄₎:

Typical signs of osteoarthritis (sclerosis of subchondral bone, osteophytes and collapse of the medial compartment); but there may be cases with erosion and no lesions.

Images from: (2) Vilamonte-Chevalier et al. 2015. BMC Vet Res. 11(11):243; (3) Coppieters et al. 2012. Vlaams Diergeneesk Tijdschr. 81(2):88-92; (4) Coppieters et al. 2016. Vet Radiol Ultrasound. 57(6):572-581



Figure 5: Arthroscopy:

Direct exploration of a complete cartilage erosion.

Image from: Coppieters et al. 2016. Vet Surg. 45(2):246-253

TREATMENT

CONSERVATIVE TREATMENT

SURGICAL TREATMENT

Corrective osteotomies which transfer the load-bearing forces from the medial towards the lateral compartment

Sliding Humeral Osteotomy (SHO)

External Rotational Humeral Osteotomy (ERHO)

Proximal Ulnar Rotational Osteotomy (PURO)

Proximal Ulnar Osteotomy (PUO)

Proximal Abduction Ulnar Osteotomy (PAUL)

Elbow prosthesis systems

Total elbow prosthesis

Canine Unicompartamental Elbow (CUE)

Others

Arthrodesis and denervation

Proximal Abduction Ulnar Osteotomy

It is the most recommended technique to date due to its favourable outcomes and to be technically easier than the other proposed techniques.

It consists of a transverse ulnar osteotomy and placement of an abduction plate in the lateral aspect of the ulna, lateralizing the limb and reducing the load borne by the medial compartment.



Figure 6: Representation of lateral displacement of the load obtained with this technique. Adaptation from: Ortiz et al. 2017. Clin Vet Peq Anim. 37(1): 33-41

Figure 7: Abduction plate. From: KYON Pharma 2009. Available in: <http://www.kyon.ch>

Figure 8: Cranio-caudal and lateral post surgical views. From: Vezzoni 2017. XXXIV Congreso Anual de AMVAC Vetmadrid. p. 154-157



CONCLUSIONS

- It is a pathology which is still unknown, and there are still many discrepancies regarding its etiopathogeny, diagnosis and treatment. It is important to continue performing studies in order to clarify all these doubts.
- The main hypothesis of its etiopathogeny is that it is due to a radioulnar incongruence.
- A combination of physical and orthopaedic examination, radiography, computed tomography and arthroscopy is recommended to diagnose the pathology. The latter is the definitive diagnostic technique.
- There are many treatments described but none of them is a curative or ideal treatment, so the prognosis is guarded. Of all the described techniques, PAUL seems to be the best and most used to date. Nevertheless, it is important to perform objective studies which compare all the different techniques in order to be able to objectively define the best one, and to perform long-term studies to evaluate the effect of the techniques on the lateral compartment.