

# TREATMENT OF NECK CONTUSION SIGNS IN A DOG WITH MONOPOLAR RADIOFREQUENCY AT 448 kHz



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## BACKGROUND

A 13-year-old, non-sterilised male Yorkshire terrier (Hércules) weighing 3 kg was referred to the Rehabilitation Department following left femoral head arthroplasty due to traumatic luxation caused by a traffic accident (Image 1).



**Image 1.** Patient arrival at the Rehabilitation Department after femoral surgery.

The patient was only able to rest in sternal decubitus, without being able to stand up unassisted.

In the absence of specific tests, the presumed diagnosis was cervical damage due to contusion of spinal cord segment C1-C5, with clear left lateralisation (the side of trauma).

The use of radiofrequency in human rehabilitation is widely spread and recognized (1). Its main effects are based on its ability to increase the temperature of the tissues on which it is applied (2). Among the main indications of hyperthermia, it is worth mentioning the treatment of pain (3), the increase of tissue flexibility and the

reduction of muscle contractures (4). Another effect of special interest is the anti-inflammatory effect of the current at 448 kHz when it is applied at low powers that are not capable of significantly increasing the local temperature of the tissues (5). This set of properties has been proposed as the main therapy in the present case.

## OBJECTIVE

To lessen the pain and neck stiffness, and stimulate re-absorption of the presumed contusion in order to limit the neurological damage.

At left hind limb level: control of post-surgical pain and recovery of muscle mass.

## MATERIAL AND METHODS

A monopolar radiofrequency current emitting system operating at 448 kHz (INDIBA® Animal Health [VET 705]) was used. The treatment was applied using two types of electrodes: capacitive (CAP) and resistive (RES), which in turn closed the circuit by means of a return plate.

### Treatment protocol:



**Image 2.** Application of radiofrequency therapy in RES mode at 448kHz in the neck region.

Two weekly 9-minute sessions were scheduled, treating the sartorius, quadriceps and iliopsoas muscles, and gentle joint mobilisation. The neck region was also treated for a further 9 minutes in the same sessions.

## RESULTS

After the third session, the patient was able to get up and remain standing, and could walk with the help of a weight-bearing harness (Image 3). After 6 sessions, the patient was able to walk without help and get past

obstacles. Proprioception and the rest of postural reactions have improved notoriously (Image 4). The spinal reflexes remain slightly incremented. The neck muscle stiffness has also improved markedly.

This clinical case shows that the small size of the patient was no problem for applying the radiofrequency therapy, thanks to the versatility of the electrodes used, allowing the patient to feel comfortable at all times.



**Image 3.** After the third session, the patient was able to get up and remain standing. A weight-bearing harness was needed for walking.



**Image 4.** After 6 sessions, the patient could walk without help and get past obstacles.

## CONCLUSION

The results of this case suggest that the application of radiofrequency therapy at 448 kHz in dogs can accelerate tissue healing in the same way as in humans. Further studies are needed to corroborate these results.

## REFERENCES

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