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Comparison of two cold compression therapy protocols after tibial plateau leveling osteotomy in dogs

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Objective: To evaluate two different protocols of cold compression therapy (CCT) for pain management and functional recovery in dogs undergoing tibial plateau leveling osteotomy (TPLO).

Materials/Methods: A total of 27 adult dogs (n = 30 stifles; staged bilateral procedures: n = 3) undergoing routine TPLO were randomly allocated to three groups (n = 10/group). Dogs of group I received CCT once before and immediately after surgery. In dogs of group II CCT was performed postoperatively four times at 6-hour intervals. Dogs of the control group did not receive CCT. Circumference of the stifle joint and the following pain-related parameters were measured by a single blinded observer before surgery and 1, 10 and 42 days after surgery: stifle joint range of motion (ROM), subjective degree of lameness, and score of a modified Glasgow Pain Scale (GPS).

Results: Both CCT groups showed significantly greater ROM and lower GPS scores 24 hours after surgery compared to the control group. Ten days after surgery there was a significantly lower degree of lameness in both CCT groups compared to the control group. Fourty-two days after surgery a significantly greater ROM was observed in both CCT groups compared to the control group. Group II also showed a significant improvement in the degree of lameness and GPS. There were no significant differences in any of the parameters between the two CCT groups at any time point.

Discussion/Conclusion: CCT applied preoperatively and immediately postoperatively showed similar short- and long-term beneficial results compared to a previously established protocol of applying CCT four times postoperatively. This protocol may be more suitable for practical use.

Clinical Significance: The reported data can be used to establish the new protocol of CCT in a clinical surrounding and to support postoperative rehabilitation of the canine patient.