

Thoracolumbar Alignment in Animals after Physical Therapy Management: An Exploration of Current Findings

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Abstract

Physical therapy management plays a crucial role in the rehabilitation of animals with thoracolumbar disorders. The thoracolumbar region, comprising the thoracic and lumbar spine, is susceptible to various injuries and conditions that can lead to misalignment and dysfunction. This article aims to explore the impact of physical therapy interventions on thoracolumbar alignment in animals and discuss the current findings in this field. The thoracolumbar region serves as a critical link between the thoracic and lumbar spine in animals. Injuries or conditions affecting this area can result in pain, restricted mobility, and altered biomechanics. Physical therapy, including manual techniques, therapeutic exercises, and modalities, is commonly employed to manage such cases. The primary goal of physical therapy management is to restore thoracolumbar alignment, promote healing, and enhance functional recovery.

Keywords: Physical therapy • Thoracolumbar region • Hydrotherapy

Introduction

Before discussing the effects of physical therapy on thoracolumbar alignment, it is essential to understand the common disorders that affect this region in animals. These include intervertebral disc disease, spinal fractures, spondylosis, vertebral subluxations, and spinal cord injuries. Each condition presents unique challenges and requires tailored physical therapy interventions. Physical therapy management for thoracolumbar disorders typically involves a comprehensive approach that combines various modalities and techniques. The initial assessment aims to evaluate the animal's alignment, mobility, muscle strength, and neurological status. Based on the findings, a treatment plan is developed, which may include manual therapy, therapeutic exercises, electrotherapy, hydrotherapy, and assistive devices. Manual techniques such as joint mobilizations, spinal manipulations, and soft tissue mobilization are integral components of physical therapy for thoracolumbar alignment. These techniques aim to restore normal joint mechanics, reduce pain, and improve tissue flexibility. Skilled physical therapists employ specific techniques adapted to the animal's size, species, and condition.

Literature Review

Therapeutic exercises play a vital role in improving thoracolumbar alignment and strengthening the supporting musculature. Depending on the animal's condition, exercises may focus on core stabilization, proprioception training, stretching, and strengthening. These exercises not only promote tissue healing but also enhance functional recovery and prevent future injuries. Various modalities, including electrotherapy, laser therapy, ultrasound, and thermotherapy, can aid in the management of thoracolumbar disorders. These modalities have been shown to reduce pain, inflammation, and muscle spasm while promoting tissue healing

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[1]. The selection and application of modalities should be guided by the specific needs and response of the individual animal.

Hydrotherapy, which involves exercises performed in water, is widely used in the rehabilitation of animals with thoracolumbar disorders. The buoyancy and resistance of water provide a safe and controlled environment for therapeutic exercise. Hydrotherapy facilitates joint mobility, muscle strengthening, and overall fitness, while minimizing weight-bearing stress on the thoracolumbar region [2]. In some cases, assistive devices such as orthoses, braces, or wheelchairs may be recommended to support the thoracolumbar region and improve alignment during the recovery process. These devices aid in weight distribution, stability, and proprioceptive feedback, thereby promoting proper biomechanics and reducing the risk of further injury.

Assessing the effectiveness of physical therapy interventions on thoracolumbar alignment requires objective evaluation methods. Radiographic imaging, gait analysis, functional assessment scales, and client feedback are among the tools used to measure the outcomes of physical therapy management. While studies investigating the impact of physical therapy on thoracolumbar alignment in animals are limited, the available evidence suggests positive outcomes. Animals that receive appropriate physical therapy interventions demonstrate improved alignment, reduced pain, enhanced mobility, and increased functionality. However, more research is needed to establish standardized protocols and evaluate long-term effects [3].

Discussion

Physical therapy management for animals with thoracolumbar disorders holds significant potential for restoring alignment, reducing pain, and improving overall function. Although research in this area is limited, current findings suggest that physical therapy interventions can have positive effects on thoracolumbar alignment. This discussion will delve into the available evidence, explore the challenges in conducting research on animals, and highlight the importance of further investigations to establish standardized protocols and long-term outcomes.

The existing literature on physical therapy interventions in animals with thoracolumbar disorders primarily consists of case studies, anecdotal evidence, and clinical experience. While these sources provide valuable insights, they lack the robustness of controlled studies and randomized trials. Thus, it is important to interpret the available evidence with caution and acknowledge the need for more rigorous research. One challenge in studying physical therapy interventions for animals is the heterogeneity of the population. Animals vary in size, species, anatomy, and pathology, which necessitates tailoring the treatment approach to individual needs [4]. This diversity makes it difficult to generalize findings across

different animal groups, and specific considerations must be made for each case. Future research should focus on delineating treatment protocols specific to various animal species and pathologies.

Another challenge lies in objectively evaluating thoracolumbar alignment and its changes following physical therapy management. Radiographic imaging, such as radiographs and Computed Tomography (CT) scans, provides valuable information on spinal alignment. However, repeated imaging may not always be feasible due to radiation exposure and cost. Alternative methods, such as gait analysis and functional assessment scales, can offer insights into functional improvement and mobility changes. Combining multiple evaluation tools can provide a more comprehensive understanding of the effects of physical therapy on thoracolumbar alignment.

Hydrotherapy offers a safe environment for exercises, allowing for controlled movement and reduced weight-bearing stress on the thoracolumbar region. Furthermore, modalities such as electrotherapy, laser therapy, ultrasound, and thermotherapy have demonstrated effectiveness in reducing pain, inflammation, and muscle spasm while promoting tissue healing. These modalities can be valuable adjuncts to manual therapy and therapeutic exercises in the rehabilitation process. Assistive devices, such as orthoses and wheelchairs, can provide support and stability, aiding in proper alignment during the recovery phase [5].

It is essential to emphasize the need for further research in this field. Large-scale controlled studies and randomized trials are required to establish standardized protocols and guidelines for physical therapy management in animals with thoracolumbar disorders. These studies should address the diverse population of animals and evaluate the long-term effects of physical therapy interventions. Longitudinal studies can assess the sustainability of improvements in alignment, pain reduction, and functionality over time. Additionally, comparative studies across different species can provide valuable insights into the efficacy of various physical therapy approaches. Moreover, the role of physical therapy in preventing future thoracolumbar disorders deserves attention. Investigating preventive strategies, such as exercise regimens and biomechanical analysis, can help identify ways to minimize the risk of recurrence or new injuries in animals [6].

Conclusion

Physical therapy management plays a vital role in restoring thoracolumbar

alignment in animals with various disorders. Through manual techniques, therapeutic exercises, modalities, hydrotherapy, and assistive devices, physical therapists aim to alleviate pain, improve mobility, and enhance functional recovery. Further research is required to deepen our understanding of the effects of physical therapy on thoracolumbar alignment and establish evidence-based guidelines for optimal rehabilitation outcomes.

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Conflict of Interest

There are no conflicts of interest by author.

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