

# PROGNOSTIC FACTORS IN DOGS SURGICALLY TREATED OF THORACOLUMBAR HANSEN I DISC HERNIATION: A RETROSPECTIVE STUDY

## INTRODUCTION

Thoracolumbar Hansen type I disc herniation is a common cause of paraparesis and paraplegia in dogs, especially in chondrodystrophic breeds. Surgery is the most common treatment, and outcome is variable and depends on several prognostic factors.

## OBJECTIVES

To evaluate prognostic factors that affect recovery of ambulation and time required for recovery after surgery in dogs with thoracolumbar Hansen type I disc herniation.

## MATERIALS AND METHODS

Retrospective study of 122 dogs surgically treated between February 2021 and June 2024 at the Hospital Clínic Veterinari (UAB). Statistical analysis performed consisted of a logistic regression to evaluate recovery, and a general linear model to evaluate speed of recovery.

## RESULTS

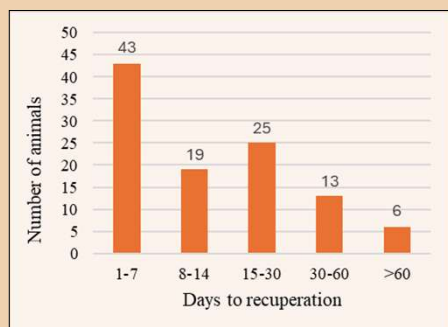


Figure 1. Distribution of dogs based on the time required to recover the ability to walk.

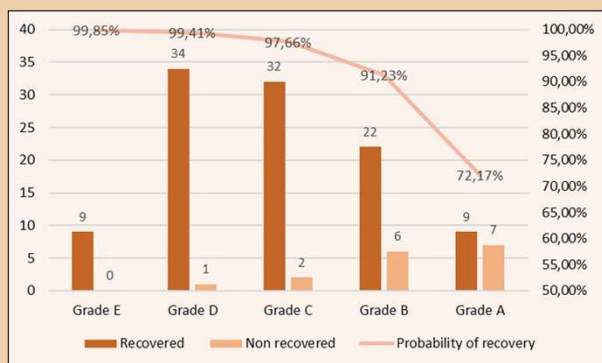


Figure 2. Number of recovered and non-recovered dogs, and probability of post-surgical recovery based on grade of neurological deterioration based on the modified Frankel scale.

In this study 84.62% of dogs regained the ability to walk after surgical treatment. The following table shows which factors were significant for prognosis.

Table 1. p-values obtained in the statistical models performed for each prognostic factor. PreDPP p-values correspond to individually performed statistical analysis. DPP = Deep Pain Perception

	p-value	
	Recovery	Speed of recovery
Age	0.216	0.002**
Weight	0.374	0.301
Breed (chondrodystrophic)	0.788	0.113
Time to surgery	0.375	0.032*
Grade of neurological dysfunction	0.038*	<0.0001***
PreDPP	0.0014**	0.0015**
PostDPP	0.0015**	0.00013***

### → Grade of neurological dysfunction:

- Grade A animals have the lowest chances of recovery (72,17%).
- Time until recovery is 8,81 times longer in Grade A, and 4,13 times longer in Grade B (compared to Grade E).

### → Pre-surgical DPP:

- 6,72 more chances of recovery if present.
- Time until recovery 2,11 times longer if not present.

### → Post-surgical DPP:

- 15,13 more chances of recovery if present.
- Time until recovery 3,94 times longer if not present.

## CONCLUSIONS

Grade of neurological dysfunction before surgery and presence of deep pain perception (both pre- and post-surgically) are the main factors that determine prognosis in dogs with thoracolumbar Hansen type I disc herniation. Paraplegia and absence of deep pain perception are indicators of poor prognosis.