

# CHARACTERIZATION OF AQUAPORIN-4 EXPRESSION IN THE BRAINS OF DOGS WITH CANINE LEISHMANIASIS

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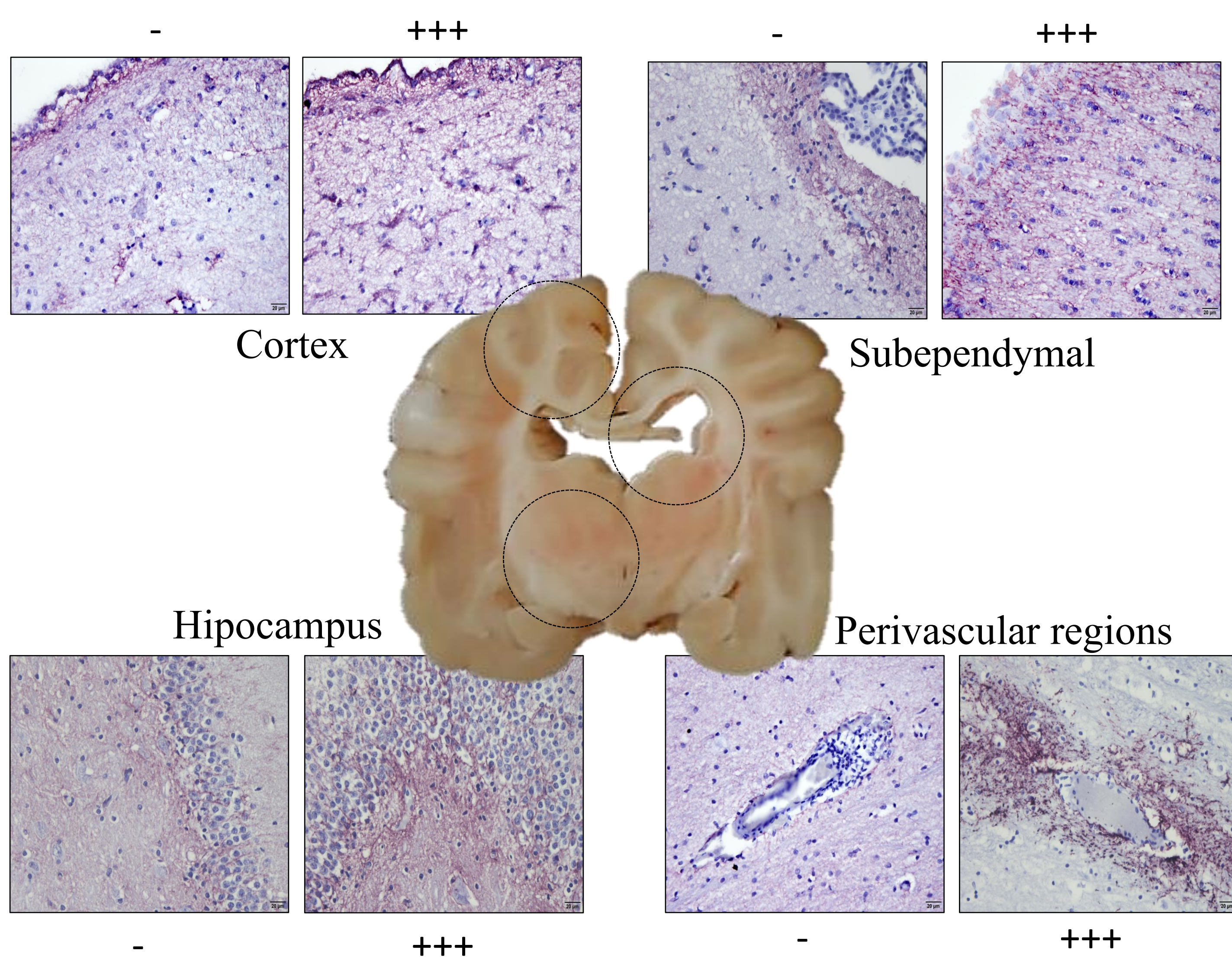
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## Introduction

Aquaporin-4 (AQP4) is a water channel protein expressed in astrocytes that has been associated with several neuroinflammatory conditions. The objective of this study was to assess whether AQP4 expression in astrocytes is affected during canine leishmaniasis (CanL).

## Materials and Methods

- ✓ Immunohistochemistry for AQP4, GFAP and CD3 in 20 brains of dogs with CanL and inflammatory changes in the nervous tissue;
- ✓ Semiquantitative evaluation of the expression and intensity of AQP4 immunoreaction in specific areas of the brain.



## Results

AQP4 immunoeexpression was most intense in the subpial and subependymal regions of all dogs and co-localized with GFAP staining. The intensity of the labeling was gradually fading towards the neuropil. We observed increased perivascular marking particularly in the regions where there were perivascular cuffs, associated with T lymphocytes, but there was no significant correlation between inflammation and AQP4 labeling intensity.

## Conclusions

There are alterations in the blood-brain barrier during CanL. The pattern of increased perivascular AQP4 expression may suggest the participation of astrocytes in the modulation of inflammation in brain leishmaniasis, regulating water homeostasis.