HYDROCEPHALUS IN DOGS

Cristina Fernoaga , M. Codreanu, M. Cornila

Faculty of Veterinary Medicine Bucharest, Romania,
cfernoaga@yahoo.com

Abstract
Anomalous conditions, such as hydrocephalus often result in early fetal or neonatal death. If animals survive birth, they may have significant alterations in consciousness and behavioral development.
Hydrocephalus can result in clinical signs due to loss of neurons or neuronal function alteration in ICP and all of its consequence.
In young dogs, prior to ossification of the cranial sutures, hydrocephalus may contribute to abnormalities of skull development such as a thinning of the bone structure, a dome-shaped or bossed appearance to the head or a persistent fontanelle.

Key words*: hydrocephalus, acetazolamide, dog*

INTRODUCTION

This paper presents the case of one dog that arrived in our clinic with the following symptoms: difficulty walking on the right front leg, loss of balance on the hind limbs. After taking the case history, the clinical and complementary exams, neurological exam, the diagnosis given was hydrocephalus and the appropriate treatment was started.

MATERIALS AND METHODS

These cases were studied and treated at the Medical Clinic of the FMV Bucharest.

For these cases, the steps in diagnosis and treatment were as following: case history, clinical exam, neurological exam, blood exam and biochemistry exam.

RESULTS AND CONCLUSION

Case presentation

The patient is a female, Maltese, 9 months old. The owner came into our practice because he observed that the dog has difficulty walking on the right front limb. At the moment he came this symptom was present for a month.

On the general examination we found that the patient has a normal appetite, normal water intake, urination and defecation is also normal. The blood analyses were in the normal range.

We performed the neurological examination on which we found the following:

- Observation: loss of balance (to the right side), on the hind limbs, hypermetric on both front legs, more visible on the right front leg, tendency to walk on hind limbs like in the circus, as a general view of gait the patient has a “robot walk”.
- Hands on examination: Cranial nerves: no menace response on the right side, and slow response on the left side.
- Spinal reflexes: normal,
- Proprioception: normal except the right front limb which is slow on response.
- Posture: normal,

- Panniculus : normal,
- Perianal: present.
- VITAMIND D – anomalous.
- Neurological localization: forebrain and cerebellum.
- Differential diagnosis: hydrocephalus, herniation of the cerebellum, syringomyelia.

Hydrocephalus is the term used to describe a condition of abnormal dilation of the ventricular system within the cranium due to intracranial disease processes. Hydrocephalus can result in clinical signs due to loss of neurons or neuronal function alterations in ICP and all of its consequences. Occasionally, when hydrocephalus is associated with fourth ventricle enlargement, there may be vestibular dysfunction.

The diagnosis of hydrocephalus is aided by information obtained from **MRI, CT, and ultrasound examination.** In this case the diagnosis of hydrocephalus was confirmed with MRI.

After the diagnosis was established we decided the following:

The choice of treatment is generally dictated by physical status, age of the animal and cause of the hydrocephalus. Medical treatment may include general supportive care and medications

to limit CSF production and reduce intracranial pressure.

Glucocorticoids are used to decrease CSF production, thereby, limiting ICP and

further neurological injury.

Prednisolone at 0.25-0.5 mg/ kg is given orally twice daily, 14 days and continued at half a dose another 6 weeks. The dose is gradually reduced at

weekly intervals to 0.1 mg/ kg every other day. This dose is continued for at least 1 month. Then the medication is discontinued if possible.

We decided to give the prednisolone at 0.5 mg/ kg , orally twice daily, 14 days and continued at half a dose another 6 weeks.

Alternatively, dexamethasone may be given orally at 0.25 mg/ kg every 6 to 8 hours. The dose can be gradually reduced over 2-4 weeks. Acetazolamide a carbonic anhydrase inhibitor is thought to reduce CSF pressure by decreasing CSF production. Mannitol, hypertonic saline and furosemide may be administered to provide temporary decreases in ICP and are reserved for emergency situations.

Acetazolamide was given at 20 mg twice daily, permanent. Furosemide was given at 5mg/day , 20 days and after this period 5mg/48 hours permanent. Panangin : 5mg/48 hours, permanent. GABA – 62, 5 mg twice daily, permanent.

CONCLUSION

Hydrocephalus is considered to be anomalous in VITAMIND

Treatment is permanent

Clinical sings may or may not improve in time depending on the severity of the disease

Prognosis is reserved.

REFERENCES

Codreanu M. – Patologia Medicala a Animalelor Domestice, Ed. Printech 2008;

Ettinger, S.J., Feldman, C.J. – Textbook of veterinary internal medicine, W.B. Saunders Company, Philadelphia 1995;

John D. Bonagura, Twedt C. D. - Kirk's Current Veterinary Therapy, Saunders 2008;

Simon R. Platt, Natasha J . Olby – Bsava Manual of canine and feline neurology