

# Computed tomography diagnosis of pituitary abscess in a dairy cow



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## BACKGROUND

Pituitary abscess syndrome (PAS) is an uncommon condition of ruminants that results from seeding of the pituitary area with bacteria from another site of infection. The syndrome is always fatal. The diagnosis is difficult, especially when alteration of nerves VII and VIII is present, because it can be confounded with encephalitic listeriosis or otitis media/interna. The final diagnosis is generally confirmed at necropsy. **The aim of this study was to evaluate computed tomography (CT) as an aid to confirm PAS.**

## CASE REPORT

### > Patient

⇒ **Holstein cow**, 3 years-old, 700 kg, 1<sup>st</sup> lactation, 180 DIM, 3 months pregnancy (Fig. 1).

### > History

⇒ The patient was referred for neurologic disorders presented 1 month earlier. The cow was treated on the field with enrofloxacin (7 days) and flunixin meglumine (3 days). Treatment improved general state of animal but clinical signs, including neurologic symptoms, re-occurred.

### > Clinical examination

⇒ **General examination:** weakness, hypermetry, ataxia, circling, head oriented in the left side, frequent falling, head pressing (Fig. 2), muco-purulent nasal discharge and congestive mucous membranes.

⇒ **Neurologic examination:** Bilateral affection of nerves III (corneal and palpebral reflexes absent); V (decreased facial sensitivity); VII (facial paralysis); VIII (audition and balance troubles). Others: threat and pupillary (direct/indirect) reflexes absent (Fig. 3).



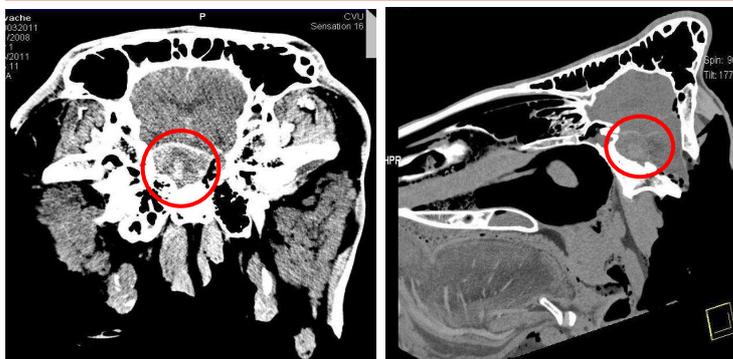
↑ Fig 1: Patient laying



← Fig 3: absence of direct and indirect pupillary and corneal reflexes



↑ Fig 2: head pressing



↑ Fig 4-5: CT with evidence of mass (circle)



↑ Fig 6-7: Hypophysal abscess at necropsy (circle)

## ANCILLARY EXAMS

### ⇒ Clinical Pathology:

- ⇒ Haematology: slight mature neutrophilia
- ⇒ Biochemistry: no sign of inflammation although moderate increase in total protein (due to dehydration), ↑ hepatic enzymes (GLDH, LDH, GGT), pituitary hormones (ACTH, cortisol) unremarkable.
- ⇒ Clinical pathology diagnosis: marked hepatitis and cholestasis.

### ⇒ Medical Imaging post-mortem (CT):

- ⇒ 52 mm X 36 mm cerebral mass located on the hypophysal fossa, with fistulisation through left maxillary sinuses (Fig. 4 & 5). Light bone reaction in left sphenoidal area.
- ⇒ CT diagnosis: extra-dural mass in the hypophysal fossa compatible with abscess or neoplasm.

### ⇒ Necropsy findings:

- ⇒ Chronic extra-dural abscess in continuation with nasal cavity (left side) (Fig 6 & 7).
- ⇒ Necrotic hepatitis

## DISCUSSION / CONCLUSIONS

The differential diagnosis for such clinical signs included listeriosis, polioencephalomalacy, NaCl intoxication, encephalitis, meningitis, cerebral tumour and pituitary abscess. Due to the poor prognosis, the cow was euthanized. CT and necropsy findings confirmed the diagnosis of PAS. The sinusitis seemed to be the *primum movens* of this PAS. CT was able to confirm PAS in euthanized cattle but should be tested in anesthetized patients. This exam has an interest in doubtful cases. In highly valuable animals, it can be helpful in determining prognosis and treatment.

## Recommended literature

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