

# Parasellar syndrome in dog and cat

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## AIMS & INTRODUCTION

The aim of the present work is to know the current state of knowledge about the parasellar syndrome.

Direct or indirect injuries in selar or parasellar region may origin the parasellar syndrome (PSS), also known as the cavernous sinus syndrome. It is characterised by the affection of the cranial nerves III, IV VI and oftalmic and maxillary branches of the V. Also, there can be affection of the III nerve's parasympathetic preganglionic fibers and sympathetic postganglionic fibers that travel close to the ophthalmic nerve to innervate intraocular smooth muscles and periorbita.

## ANATOMY

Selar and parasellar regions are made of bone, vascular and nervous (autonomic and somatic) tissues. Hypophysis and related meninges are also included in this regions.

Selar region is determined by the components of the Sella turcica, while parasellar region includes the vascular and nervous structures that surround selar region.

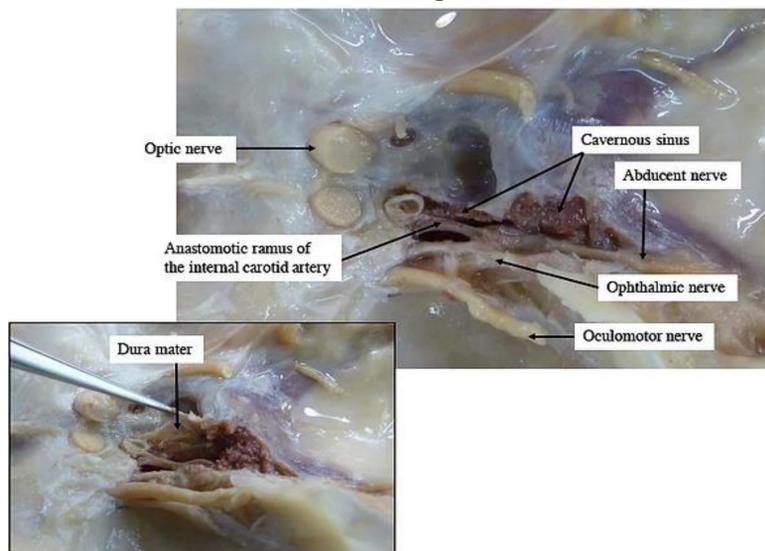


Figure 1: dorsal view of the selar and parasellar regions in a dog.

Source: <https://www.neuroanatomyofthedog.com>

## ETIOLOGY

<b>Vascular</b>	Aneurisma Arteriovenous fistula Internal carotid artery and cavernous sinuses malformation	
<b>Inflamatory Infectious</b>	Granuloma Abscess Vasculitis Meningitis	<i>Toxoplasma</i> <i>Cryptococcus</i> FIP
<b>Trauma</b>	Intracranial injuries affecting parasellar region	
<b>Neoplasm</b>	Meningioma Pituitary adenoma Craniopharyngioma Others	

## SIGNS

These nerves' somatic and visceral components affection, along with the sympathetic fibers' present the next symptoms: **inner and/or external ophthalmoparesia/ophthalmoplegia, altered corneal and vestibuloocular reflexes** and, eventually, **Horner disease**. The sensory deficits that most commonly are seen are: **decreased or absent corneal sensitivity** and **nasofacial and periorbital hypalgesia**.



Figure 3: adult cat presenting accused anisocoria, with midriasis and external ophthalmoplegia on the right eye. Source: Guevar J, Gutierrez-Quintana R, Peplinski G, Helm JR, Penderis J. 2014. Cavernous sinus syndrome secondary to intracranial lymphoma in a cat. J. Feline Med. Surg. 16:513-516

## DIAGNOSIS

Usually, it is used magnetic resonance (MR) as first choice to evaluate anatomy and pathology of these regions.

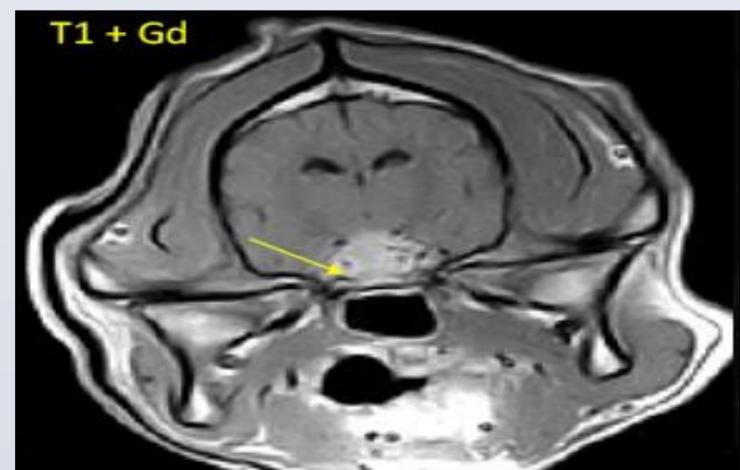


Figure 4 : MR image, in T1, after contrast administration. It is possible to see bilateral extra axial neoformation, with origin in the selar and parasellar regions, thus affecting the hypothalamic region, cavernous sinuses and related structures. Source: Courtesy Professor Vicente Aige

## TREATMENT & PROGNOSIS

The majority of PSS diagnosed cases end up with eutanasia, due to the bad prognosis of this disease. This is because current therapies are not ready yet to treat patients satisfactorily.

## CONCLUSIONS

- It is an infrequent disease in dogs and cats.
- Its main etiology is neoplasm.
- Definitive diagnosis is very hard to reach.
- Bad prognosis due to its etiology and inaccessibility of the region affected.