Pheochromocytoma in dog and cat: approach to the disease by studying clinical cases.

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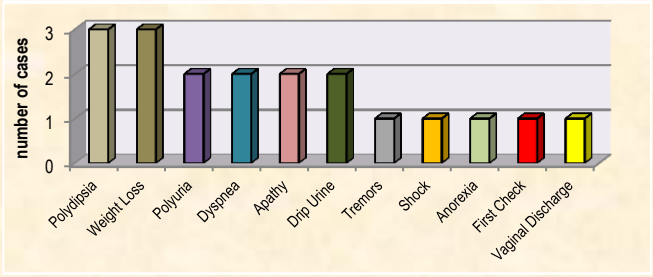
Introduction

The pheochromocytoma tumors are diagnosed at the majority of pets (despite being rare in dogs and extremely rare in cats) and are presented at elderly ages. This neoplasia is mostly detected only in one adrenal gland and is usually functional: the affected chromaffin cells in adrenal medulla segregate catecholamines following either constant or paroxysmal patron so that the patient's clinical signs will normally be shown. Moreover, the effects produced by the adrenergic receptors' answer are frequently nonspecific (**Figure 1**) and often associated with more frequent disorders.

Figure 1. Historical complaint at the day of adrenal mass detection.

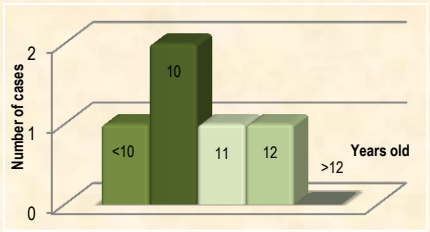


Thus, the aim of this study is to get into the reasons why pheochromocytoma is a *post-mortem* diagnosed disease and, despite not achieving the historical information of all the thirty pheochromocytoma cases recorded at Hospital Clínic de la UAB, it will be gratifying if the study of five (2009-2014) of them is useful to expand that disease knowledge

Results

The average age of presentation is 9,8years old±2.28 (**Figure 2**). As for gender, there are three males and two females diagnosed. The average weight is 20,9kg but with a standard deviation of 12.43.

Figure 2. Age of patients at the day of adrenal mass detection.



In the physical examination there were no pathognomonic findings (**Table 1**) and neither in blood counting nor in biochemistry no relevant abnormalities were found.

Table 1. Physical examination alterations

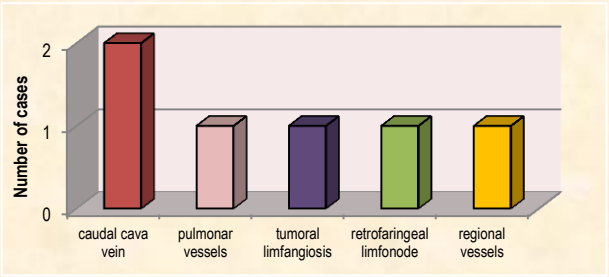
Cardiac murmurs	3/5
Abdominal distention	2/5
Palpable mass in abdomen	2/5
Organomegally	1/5
Elevated Systemic Arterial Pressure	1/5

The most representative sonographic alterations were adrenalomegally observed in all patients diagnosed and prostatomegally in all three males included.

Enter here to view ultrasonology images!

In 3/5 dogs neoplasia was detected in right adrenal gland and metastasis (**Figure 3**) was observed in 3/5 patients: two of them had caudal vena cava affection. Medical treatment was applied to two patients and one did not receive treatment after being diagnosed: these three animals died. The two remaining cases received surgical treatment, both of them are still alive: one has a 26 month survival period and the other it has been 6 years and 11 months since adrenalectomy.

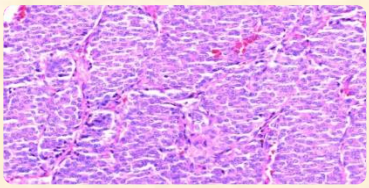
Figure 3. Metastasis found in 3 pheochromocitoma cases.



Discussion

It's believed that the 60% of patients are asymptomatic. That's the reason why, at the 50% of patients, the final diagnosis is emitted through histology (**Figure 4**) after necropsy or adrenalectomy.

Figure 4. Histological image of a canine pheocromocytoma (20x). Cells are displayed like cords.



Nevertheless, the most powerful diagnostic tests *ante mortem* are imaging procedures, especially ultrasonology. Also, the determination of normetinephrine levels in plasma and dexamethasone suppression test provide distinguishing the origin of adrenal mass (**Table 2**) discovered by ultrasonology (either cortex or medulla). More complex imaging techniques such as CT or Magnetic Resonance are useful to accurate the patient prognostic and to plan the surgical approach.

Table 2. Differential diagnosis of an adrenal mass.

1. Adrenal hyperplasia
2. Adrenocortical carcinoma
3. Adrenocortical adenoma
4. Pheochromocytoma

Conclusions

There have been carried out different kind of studies related to pheochromocytoma, although more research is needed primarily to achieve a more effective formula that provides early diagnosis to prevent such serious medical conditions that become irreversible. It's also important to take into account this pathology mainly in elderly patients that show nonspecific clinical signs and no clear results are reveled on biochemistry. So, there is a long way to walk through aiming to find out more clues about pheochromocytoma.