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IMPORTANCE OF HYPERTROPHIC CARDIOMYOPATHY (HCM) AND ITS DIAGNOSIS IN CATS

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INTRODUCTION

Heart diseases have a high prevalence in veterinary medicine and stand out as one of the main causes of death in cats, ranking among the ten most common etiologies of mortality in the species.[2]. Cardiomyopathies are a diverse group of cardiovascular pathologies that affect the myocardium, with Hypertrophic Cardiomyopathy (HCM) being the most common in domestic cats. [1].

In 2020, the American College of Veterinary Internal Medicine (ACVIM) proposed an updated classification of cardiomyopathies that affect the feline class, based on the phenotypic characteristics observed on echocardiography, this technique being the gold standard for their diagnosis.[2].

In clinical routine, Hypertrophic Cardiomyopathy is the predominant phenotypic presentation in cats. [1] and is estimated to affect around 15% of the species [2], thus becoming the main focus of this work. Cats diagnosed with the HCM phenotype often show signs of congestive heart failure, arterial thromboembolism and, in most cases, sudden death, making their diagnosis important.[1,2].

Therefore, the present work aims to present Hypertrophic Cardiomyopathy in cats and the echocardiogram as the gold standard for its diagnosis, highlighting the importance of identifying this pathology in practice, since late diagnosis can compromise the prognosis and treatment of the animal.[6].

MATERIAL

This work was prepared through searches on Google Scholar, aiming to collect information from articles, magazines and dissertations on cardiomyopathies in cats, published in the period between 2020 and 2023.

THEME SUMMARY

Hypertrophic Cardiomyopathy (HCM) is a pathology of genetic origin that is characterized by an increase in the thickness of the wall of the left heart ventricle and the portion of the adjacent interventricular septum.[3], and can be identified on echocardiography (Fig 1). The thickness of the wall occurs due to the accumulation of fibrous tissue within the heart muscle, which makes the myocardium rigid and, as it progresses, alters the structure and function of the heart.[1].

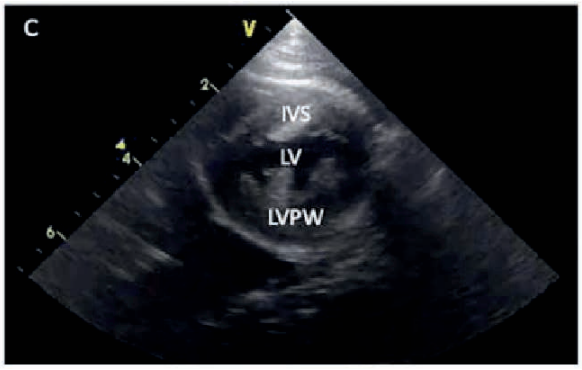

Figure 1: Echocardiographic image demonstrating thickening of the left ventricular wall of a cat with ventricular hypertrophy (LV: left ventricle; IVS: interventricular septum; LVPW: proximal wall of the left ventricle)

Source: Sukumolanan and Petchdee (2020)

Cats with HCM may present tachycardia in an attempt to maintain cardiac output, due to a decrease in stroke volume resulting from the reduction in the volume of the ventricular chamber. [3]. Furthermore, the literature reports that an important complication of this pathology is the development of thromboembolism, especially in the region of the aortic trifurcation.[8].

HCM can affect cats of all age groups, although the diagnosis is more common in cats with an average age of 5 to 7 years. In some breeds, such as Ragdoll, Maine Coon and Sphynx, the disease can manifest itself more seriously and start at an earlier age [1,4]. Echocardiography is the gold standard for diagnosing cardiomyopathies in felines,

however, identifying and distinguishing the different phenotypes of these pathologies represents a significant challenge in veterinary medicine.[6]. Its diagnosis is based on determining the phenotypes and clinical signs displayed, and may vary according to the stage of the disease, presenting similarities with other forms of cardiomyopathies. [7]. To ensure best results, it is recommended to perform the echocardiogram on non-sedated cats, in a quiet environment, with minimal restrictions during the exam. [2]. This method consists of creating images of the heart through the use of sound waves [1]. In more advanced cases of HCM, the echocardiogram reveals notable changes in the structure of the heart, such as a significant increase in the papillary muscles, enlargement of the left atrium, among others.[1].

In echocardiography, M mode guided by a two-dimensional view is used to measure the thickness of the left ventricular (LV) wall and papillary muscles2. It is recommended to measure end-diastolic thickness after at least three cardiac cycles2. Additionally, it is possible to observe enlargement of the left atrium on echocardiography, and its measurement is important to assess the severity of the condition in cats.[5]. Therefore, HCM is identified on echocardiography when end-diastolic measurements of ventricular wall thickness equal or exceed 6 mm, considering a hypertrophied ventricular wall.[3].

FINAL CONSIDERATIONS

Hypertrophic Cardiomyopathy (HCM) in cats demands special attention due to the variation in severity and clinical presentation of the disease, affecting the animals' quality of life1.

Echocardiography is the gold standard for diagnosing HCM, and is also used to monitor the progression of the disease and provide treatment according to the needs of each animal5.

Therefore, HCM is a pathology that deserves greater attention in veterinary routine due to its greater frequency in cats, with early diagnosis generally favorable when diagnosed and treated appropriately.

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