REMARKS ON CEPHALIC CLINICAL MANIFESTATIONS AS A RESULT OF MITRAL INSUFFICIENCY IN DOGS

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Abstract

Over February 2007-March 2008, 34 dogs of various breeds, aged between 10 and 14, were examined and studied. They had been diagnosed with mitral insufficiency. The aim of this paper is to reveal the correlation between the cephalic clinical manifestations (xerostomia, pharyngeal constriction, lingual changes, epiphora, the hyperaemia of the conjunctival mucous membrane and ceruminous hypersecretion with auricular hyperkeratosis) and the mitral insufficiency in dogs. Xerostomia, pharyngeal constriction, lingual changes and epiphora were to be found in all the dogs, the hyperaemia of the conjunctival mucous membrane and the ceruminous hypersecretion with auricular hyperkeratosis were found in five dogs only. The x-ray photographs revealed the heart hypertrophy in all subjects, their heart exceeding the size of three intercostal spaces. Following the laboratory tests no specific bacterial or mycotic bacterial pathogenic flora was revealed. The clinical expression of the cephalic manifestations simultaneously with the heart disease and the radiological image and the negative results of the bacteriological or mycological examinations confirm the interdependence between facial manifestations and heart diseases.

***Key words*:** *mitral insufficiency, xerostomia, epiphora, auricular hyperkeratosis, ceruminous hypersecretion, pharyngeal constriction*

Introduction

Theoretical and practical knowledge is useful in getting information about the health or illness of the patient, therefore the diagnosis. And this is so as both the prognosis and the rational treatment plan entirely depend on the diagnosis. The accurate determination of the disease is based on the interpretation of the results of the general clinical examination and of the various organs, implicitly the facial one, the facies offering many clues to the diagnosis.

In most diseases, the facies expresses the condition of the animal due to the connections between the organs and the innervation of the facial region, which makes possible the reflection of numerous sensations at this level, the final result being the face expression [8]. Due to the complexity and variability of the physical and chemical, neuro-vegetative or endocrine reactions, depending on the physiological and/or pathological processes, the facies can express the condition of the animal. The facial expression is rendered either under the form of a physiognomy lacking expression, of an immobile ”mask” or under the form of real contraction (mimics), accompanied by the contraction of the various muscles, blinking movements of the eyeballs, etc. [10]

Veterinary medicine describes the nervous, sad, immobile, mobile, influenza, mitral, wolf-like, hyper-thyroidian and hemiplegic facies as being quite relevant for the diagnosis [11].

The paper wants to go thoroughly into the description of the facial expression accompanying various extra-cephalic diseases, as the information currently available in the Romanian veterinary literature is presented briefly or even telegraphically.

Material and methods

Over February 2007-March 2008, 34 different breeds of dogs, age between 2 and 14, were examined and studied.

With the help of the methods of examination, the cephalic and systemic clinical manifestations were observed, analyzed and monitored. They used the

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main examination procedures (inspection, palpation, percussion, listening, and thermometry) and the complementary ones (radiography).

By using sterile instruments, samples for bacteriological and mycological tests were taken. The samples representing pathological secretions, crusts or hairs were inoculated on culture media (nourishing bullion or horse serum, simple or blood gel, violet lactose agar and Chapmann medium for bacteriological examinations and Czapeck or Sabouraud media for mycological examinations). The media were incubated at 37° C for 24 to 48 hours for bacteriological examinations, for 3 to 5 days at 25° C for mycological examinations. The culture examinations characterized the types of colonies obtained on the culture media. Colour smears were made by means of Gram's Method and methylene blue for fungi.

Results and discussions

Thirty-four dogs were diagnosed with mitral fibrosis, the clinical picture being outlined by the seriousness of the pathological process. Following the anamnetic investigation and the clinical examination, extra-cephalic manifestations materialized in apathy, whimsical appetite, intolerance to effort, night-time cough, pulmonary oedema, vertigo and tachypnea. By indirectly listening, a double endo-cardiac onomatopoeic breath was detected, translated as "fff-dup". With the help of radiograms the cardiac area was established, which was actually enlarged, in 32 subjects, (figs. 1 and 2). Cephalic manifestations consisted of dry mouth, pharyngeal constriction (the sensation of a lump in the throat), soft or dry coated tongue, epiphora, hyperaemia of the conjunctival mucous membrane and ceruminous hypersecretion accompanied by auricular hyperkeratosis [8].

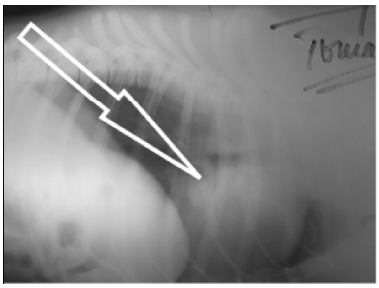

Fig. 1. Cardiac hypertrophy in mitral insufficiency
in dogs (French bulldog, 8 years old)

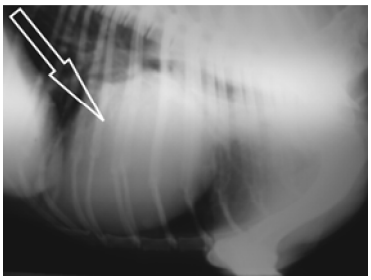

Fig. 2. Cardiac hypertrophy and pulmonary fibrosis
in mitral insufficiency in dogs (Tackle, 10 years old)

The apathy and the whimsical appetite were correlated with the help of xerostomia, pharyngeal constriction and dry or soft tongue in 20 dogs, while the intolerance to effort, tachypnea or the pulmonary oedema were cephalically represented by the coated tongue, the hyperaemia of the conjunctival mucous membrane and epiphora in 14 dogs. In most cases, the dry mouth and the sensation of a lump in the throat (pharyngeal constriction) were reported in the compensated phase of the mitral insufficiency [9]. These manifestations would account for the cephalic mechanisms and vegetative neuro-reflexes accompanying the mitral insufficiency [2, 3]. The tongue and peri-ophthalmic congestion accompanied the decompensated phase (increase in the time necessary for emptying the left ventricle and the maximum pressure) of the heart disease and were consecutive to the pressure and the lung venous stasis [5, 10].

The ceruminous hypersecretion accompanied by the auricular hyperkeratosis was reported in four dogs diagnosed with decompensated mitral insufficiency. Before the emergence of the heart insufficiency, according to anamnetic data, the subjects did not show pathology with auricular expression (otitis, allergic reaction, food poisoning dermatosis, dermatitis under the form of eczema, nutritional-metabolic or endocrine disorders). The results of the bacteriological and mycological tests did not reveal auricular pathogenic microbial flora. As a rule the development of the pathogenic microbial flora at an auricular level (staphylococcus, streptococcus, and pseudomonas) is favoured and maintained by the alkaline pH of the ceruminous secretion [6]. In the cases under consideration, the pH of the ceruminous secretion was acid (5.0-6.8), the possibility of the development of the pathogenic microbial flora being quite low. The explanation of maintaining the acid pH at an auricular level would be due, on the one hand, to the presence of the cerumen and, on the other hand, to the lower speed of the venous blood circulation and the hypoxia generated valvular insufficiency at this level [1]. The auricular hyperkeratosis was more evident in dogs that showed stasis and pulmonary oedema, a phase in which the metabolic acidosis is much more intense. The thickening of the auricular horn-like layer could be due to the ceruminous hypersecretion.

Fig. 3. Ceruminous hypersecretion accompaniedby auricular hyperkeratosis in mitral insufficiency in dogs (mongrel, 18 kg, 12 years old)

The clinical cephalic evolving dynamics was accounted for by blood disorders and pulmonary complications (stasis and pulmonary oedema) [11]. In this respect, we think that the cephalic manifestations were expressed depending on the cardiovascular adapting capacity and the blood redistribution (opening of the arteriovenous shunting to reduce resistance or peripheral blood storage in organs, which limits the mechanical working condition of the heart).

Conclusions

1. The cephalic manifestations in the mitral insufficiency are represented by xerostomia, soft or dry coated tongue, epiphora, hyperaemia of the conjunctival mucous membrane, ceruminous hypersecretion accompanied by the hyperkeratosis of the auricular conchea and retromandibular ganglionic hypertrophy.

2. Xerostomia was reported in the compensated phase of the mitral insufficiency. The blood tongue and peri-ophthalmic accumulation accompanied the decompensated phase of the heart disease.

3. The auricular hyperkeratosis is evident in dogs suffering from pulmonary oedema.

4. The retromandibular ganglionic hypertrophy accompanies cough, dyspnoea or the faulty lymphatic draining. Regional adenopathy is more evident during crises of night-time cough.

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