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PERICARDITIS CARCINOMATOSA IN DOG- CASE REPORT

Abstract. *Pericardial effusion may be caused by many cardiac or systemic disease. A fluid within the pericardial sac leads to the cardiac tamponade repeatedly. It may be caused weakness, difficulty breathing and even collapse in a patient. Among the many reasons of pericarditis cardiac tumors are the most common. Also metastasis to the pericarium have been reported.*

Key words: *pericarditis carcinomatosa, carcinoma mamme, dog*

Introduction

Many cardiac or systemic disease may cause pericardial effusion (PE), which is abnormal accumulation of fluid within the pericardial sac. Compression of the heart by increasing pericardial contents leads to cardiac tamponade. PE has been described in all animal species. It could occur regardless of race of dog, but is frequently diagnosed in Golden Retrievers.

In most cases, clinical symptoms in dogs with PE are nonspecific and it may be manifested by depression, respiratory difficulty, collapse, reduced appetite, vomiting and abdominal distention. Less common clinical signs are polydipsia, weakness and coughing. When pericardial fluid leads to cardiac tamponade, course of disease may be acute or chronic. Patient is lethargic, mucous membranes and a tongue are pale or occasionally cyanotic, and weak or paradoxus pulse.

PE in dogs is accompanied most commonly with cardiac tumors. It may be due to primary heart tumors e.g.: hemangiosarcoma (the most common of cardiac tumors), chemodectoma, heart base tumors and mesothelioma. Cardiac lymphosarcoma, rhabdomyosarcoma and fibrosarcoma have been also reported in dogs (4, 8).

Metastases of extracardiac neoplasms also can be occurred in the pericardium and pericardial effusion is appeared (1, 9). The metastatic neoplasms are: lymphoma, fibrosarcoma, rhabdomyosarcoma, melanoma, mastocytoma, phaeochromocytoma, disseminated malignant histiocytosis and adenocarcinoma (prostatic, gastric, pulmonary and mammary) (2, 5, 6, 7, 10).

PE occurs most commonly among cases suffering from congestive heart failure. Left atrial perforation is uncommon cause of PE however has been observed in smaller breed of dogs with chronic degerative valve disease (12).

Other rare cases of fluid within the pericardial sac are due to bacterial, fungal or viral infections, uremia, hypothyroidism (cholesterol-based PE), and even pericarditis associated with intrapericardial foreign bodies (for example pellets) (13, 14, 15, 16, 17).

Task, the aim of the article

The aim of the article is to present diagnostic and therapeutic procedures in case of cardiac tamponade.

Material and methods

The diagnostic and therapeutic procedures in case of cardiac tamponade will be discussed on the example of golden retriever, female, 11-years old which was brought to the private veterinary surgery because of significant weakness, dyspnoea and syncope. Clinical examination was carried out, which was based on: 1) observation: kind of breathlessness, the number of breaths per minute, colour of mucous membranes, 2) palpation: estimation of quality of pulse and capillary refill time, through finger pressure on the responsively femoral artery and gingival mucosa, 3) measuring internal temperature of the body, 4) auscultation heart tones and lung sounds. Due to be heard arrhythmia performed nine-lead electrocardiographic study by means of apparatus BTL SD-08 with computer software. At the same time echocardiography was performed by means ultrasound camera Aloka 3500 because dog was very weak. During the examination cardiac tamponade was revealed and pericardiocentesis was performed under control USG and EKG. Pericardial effusion was given to the cytological examination. Also blood was taken to the biochemical and morphological tests to detect other cause of patient's clinical condition. After the death of a patient sample from the modified tumor of the mammary gland were received and given to the histopathological examination.

Results of researches

During the clinical examination patient was very weak, had dyspnoea, pale mucous membranes and cyanosis tongue. Measuring internal temperature of the body revealed increase temperature to 41 degrees Celsius. Finger pressure on the gingival mucosa showed prolonged capillary refill time, which was 4 seconds. Femoral pulse was irregular and slightly perceptible. Arrhythmia was confirmed by electrocardiography. Complex arrhythmias: atrial and ventricular were identified. Heart rate was within the limits 80-110 per minute, middling 95 per minute. Paroxysmal atrial tachycardia was found in the EKG, where heart rate was only slightly greater than primary heart rate and it was 140 per minute. In addition premature supraventricular and ventricular beats and nonspecific disturbances of ventricular conduction were identified.

The ultrasonographic echocardiography was performed due to the symptoms and result of the preliminary clinical examination, which suggested cardiac problem. Pericardial effusion was appeared by two-dimensional echocardiography as an anechoic space surrounding the heart. Heart showed swinging motions within the pericardial fluid. Heart chambers appeared small, the walls showed pseudohypertrophy due to external compression. This examination disclosed massive pericardial effusion, haemodynamic derangement, mainly right atrial and right ventricular wall collapse. Cardiac tamponade was diagnosed and pericardiocentesis was performed. During collection of pericardial effusion patient felt better. Mucous membranes became pink, breath appeared calmer and capillary refill time was normal, below 2 seconds. After

pericardiocentesis heart was precisely showed. Cardiac structure and function looked normal. Electrocardiography remained unchanged.

Blood test were make in the same time. Tests findings included: leucocytosis (WBC 23, 00 $10^9/l$), lymphopenia (0,3 $10^9/l$) and granulocytosis (19,74 $10^9/l$) but biochemical tests (renal and hepatic profil) was normal.

Result of pericardial fluid cytology test revealed cellule carcinomatose. In addition carcinome mamme was indicated by histopathological examination from the modified tumor of the mammary gland.

Above mentioned findings suggest presence pericarditis carcinomatosa, as metastasis from primary tumor, deriving from the mammary gland.

Conclusion/ Summary

Pericarditis carcinomatosa is not common in the dogs. The primary cardiac tumor appear more often than the matastasis to the pericardium, but somethimes may occur (2, 11). Cardiac tamponade may be led by compression of the heart by accumulating pericardial contents. It causes decrease stroke volume and heart contractility. Clinical symptoms of pericardial effusions are nonspecific. Often clinical signs are manifested by weakness, dyspnoe and syncope. However cardiac tamponade may lead to the cardiogenic shock and cardiac arrest. In this situation pericardiocentesis is method of choice. In addition pericardial fluid is given to the cytological examination to find cause of disease.

Pericarditis carcinomatosa may be revealed by diagnostic procedures as: radiology, electrocardiography and echocardiography. Thoracic radiographic features, which support a diagnosis of PE are enlargemend and globoid cardiac silhouette. Electrocardiography may show low voltage QRS comlex. Ventricular and supraventricular arrhythmias may be found. However echocardiography is the most specyfic noninvasive method to confirm the presence of pericardial effusion (3).

Pericarditis carcinomatosa is not common consequence of metastasis. However the correct diagnosis is revealed by precise diagnostic procedures, in particular pericardial fluid cytology test.

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