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CASE REPORT

Aortic Valve Papillary Fibroelastoma in a Cat: Case Report

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ABSTRACT

Cardiac tumors are rare in cats. Usually the diagnosis can be made on echocardiographic examination. Papillary fibroelastoma in this case is a primary cardiac tumor and is histopathologically defined as benign. However, these types of tumors carry the risk of thromboembolism and may cause complications such as stroke or infarction. In these types of the cases the symptoms are not specific and may vary depending on the size or structure of the mass. In the report a case of papillary fibroelastoma identified echocardiographically in a male tabby cat is discussed.

Keywords: Echocardiography, Feline, Fibroelastoma, Cardiac, Tumor.

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Bir Kedide Aort Kapağı Papiller Fibroelastomu: Vaka Raporu

ÖZ

Kardiyak tümörlere kedilerde nadir rastlanır. Teşhis genellikle ekokardiyografik muayene ile yapılır. Sunulan vakadaki papillar fibroelastoma primer bir kalp tümörüdür ve histopatolojik olarak iyi huylu olarak tanımlanır. Bununla birlikte, bu tip tümörler tromboemboli riski taşır, felç ya da enfarktüs gibi komplikasyonlara sebebiyet verebilir. Olgulardaki belirtiler spesifik değildir ve kitlenin boyutu veya yapısı ile bağlantılı olarak değişkenlik gösterebilir. Sunulan raporda tekir ırkı erkek bir kedide ekokardiyografik olarak tanımlanan papiller fibroelastoma olgusu tartışıldı.

Anahtar Kelimeler: Ekokardiyografi, Kedigiller, Fibroelastoma, Kardiyak, Tümör.

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INTRODUCTION

Primary cardiac tumors are rare and can be benign or malignant (Grebenc et al. 2000). The most widest cardiac tumor is myxoma. It occurs in about half of the cases. Other benign primary neoplasms include papillary fibroelastoma which is the most common valve tumor, and also rhabdomyoma, fibroma, hemangioma, lipoma (Burke and Virmani 1996, Behairy and Gouda 2013). Papillary fibroelastomas are benign endocardial tumors that mainly affect the valves and it constitutes about three-quarters of all heart valve tumors (Edwards et al. 1991, Grebenc et al. 2000). The most well-known formation site is on the mitral and aortic valves. Papillary fibroelastomas are often small (<1cm) and appear flower-like with a narrow shaft (Aguilar and Levine 2018). Embolic clot formations may originate from the tumor or from clumps of platelets and fibrin that may form on the tumor surface (Shahian et al. 1995). The treatment of papillary fibroelastoma is not clearly defined. Surgical resection may be recommended in those with a history of embolism. In asymptomatic cases surgical removal may be considered if the mobility of the fibroelastoma is high (Aguilar and Levine 2018).

CASE HISTORY

A 2-year-old male 4.1 kg tabby cat was presented to the Pasteur Veterinary Polyclinic in Kocaeli, Turkey. The owner of the cat said that the cat is started to deep and forced breathing, stagnate and lost appetite in the last 2 days. As a result of the clinical examinations; the body temperature was 39.1 ^{o}C, heart rate was 160 beats/minute, blood pressure was 149 mm/Hg. After this examination the blood sample was taken. Also FIV and FeLV results determined were negative and has S4 degree positive reaction on FCoV. All total blood count, biochemical analyses, and T4 and NT-ProBNP results are shown in Table1 and Table2.

We have taken the X-Ray (Figure 1) and then prepared the patient for echocardiographic examination. The mass was clearly visible on echocardiography (Figure 2, 3). According to echocardiographic evaluation and M mode results also HCM was diagnosed in the cat, and turbulent flow was also observed at the level of the mitral valve. At the same time, a freely moving mass in the left ventricular outflow tract, which appeared to be originating from the aortic root, was found compatible with fibroelastoma, which was connected to the aortic root with a thin stalk, and the mass was flutters with cardiac motion almost like a yo-yo type. No thrombus was detected in the left ventricle or in the left ventricular outflow tract. The cat which was started on medication and a special cardiac diet, continues to live.

Table 1. Hemogram results of the cat

Hemogram results	
WBC	9.47
NEU	4.98
LYM	3.74
MON	0.53
EOS	0.21
BAS	0.01
NEU%	52.60
LYM%	39.50
MON%	5.6
EOS%	2.20
BAS%	0.10
RBC	9.01
HGB	11.20
HCT	30.90
MCV	34.30
MCH	12.40
MCHC	36.10
PLT	119.1
PCT	1.30

Table 2. Biochemisty results of the cat

Biochemistry results	
TP (g/dL)	8.00
ALP (U/I)	30.00
GLU (mg/dl)	115.00
ALT (U/I)	74.00
CRE (mg/dl)	0.88
BUN (mg/dl)	27.20
NT-ProBNP ng/mL	1027.4
T4 ug/dl	1.64

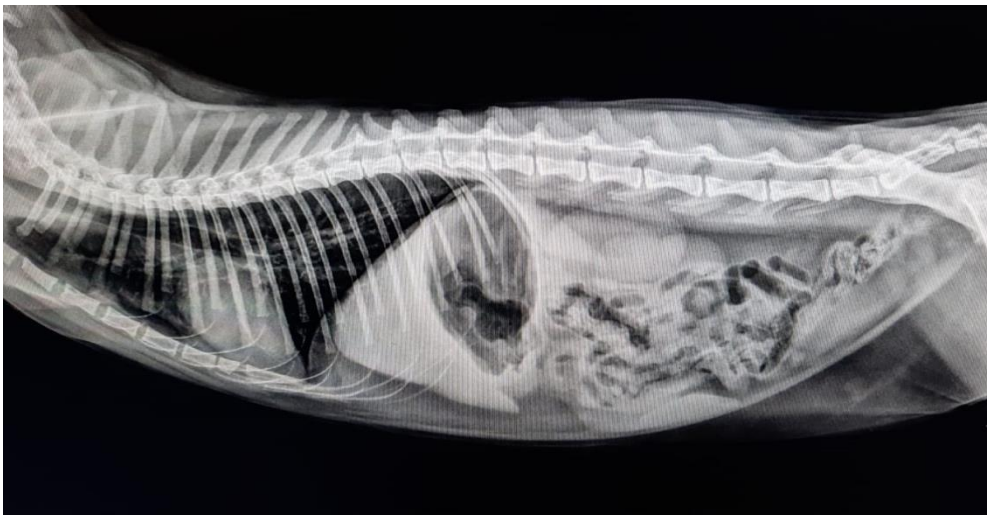

Figure 1: X-ray output of the patient

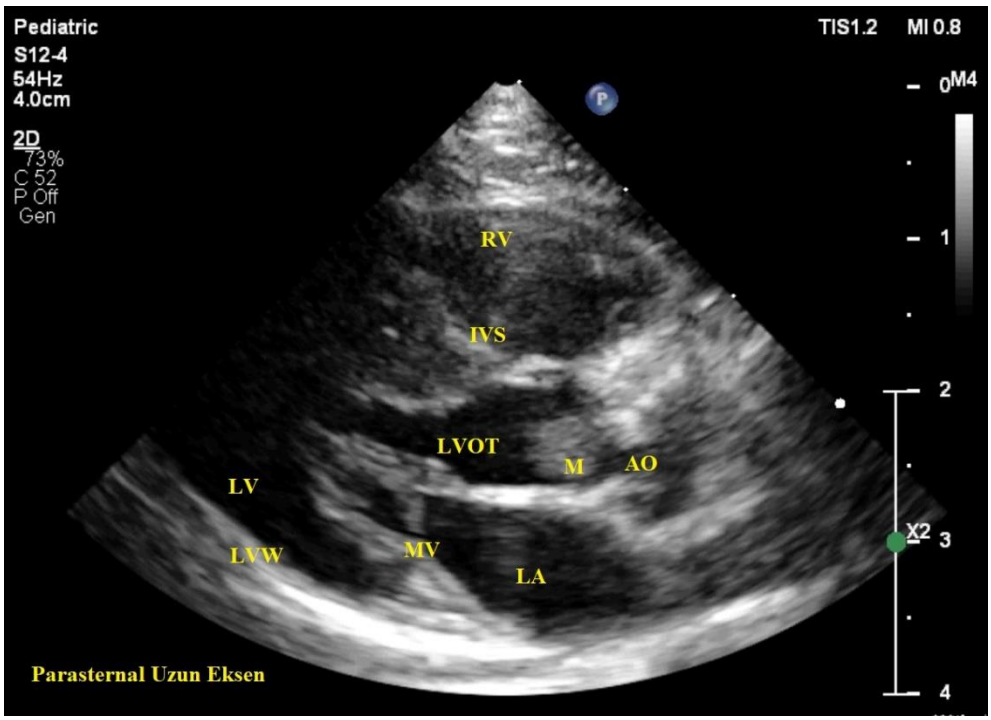

Figure 2: Echocardiographic view of the mass

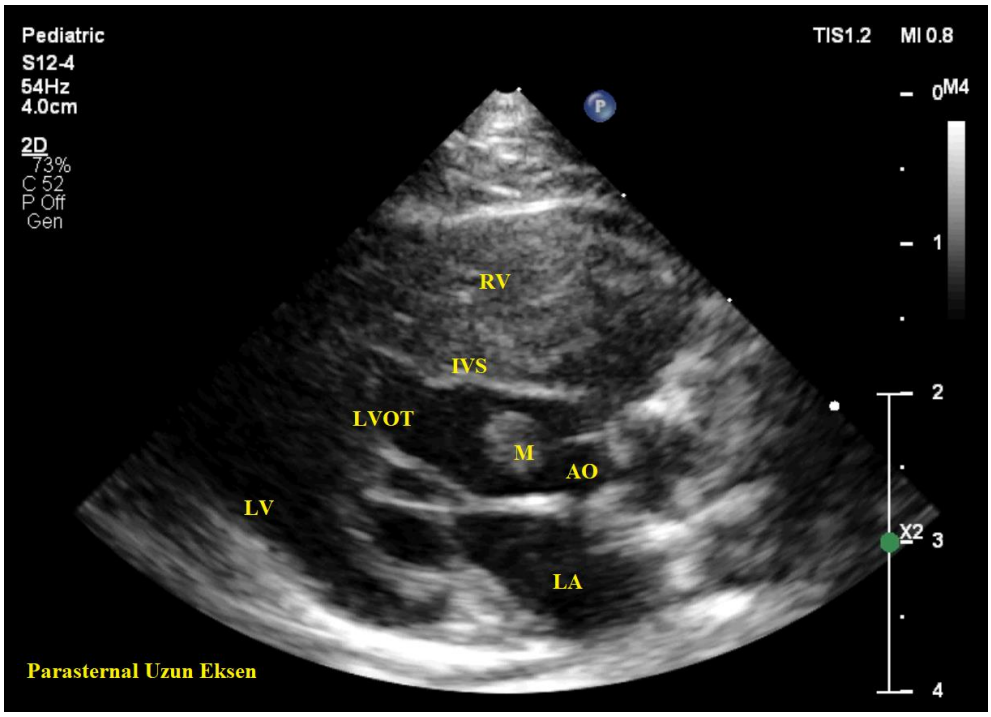

Figure 3: a. Echocardiographic view of the mass and stem

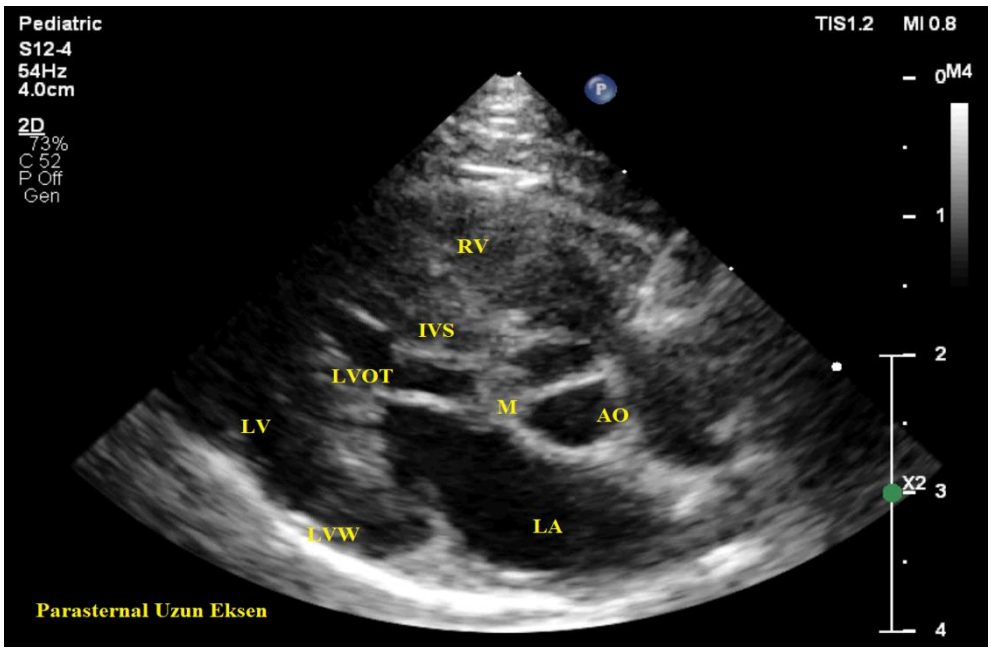

Figure 3: b. Echocardiographic view of the mass and stem

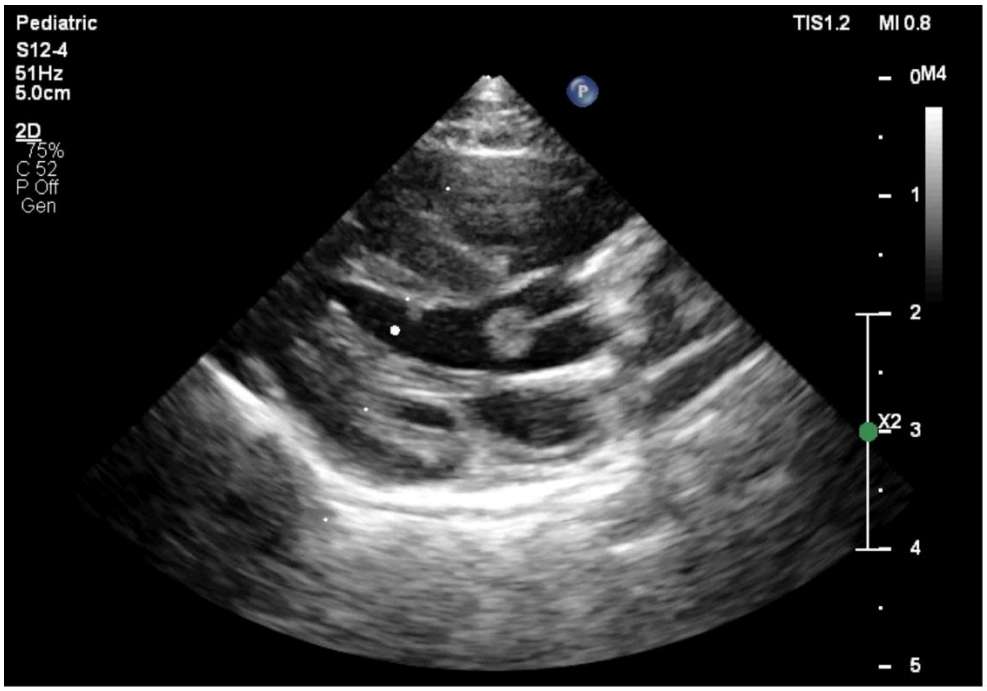

Figure 3: c. Echocardiographic view of the mass and stem

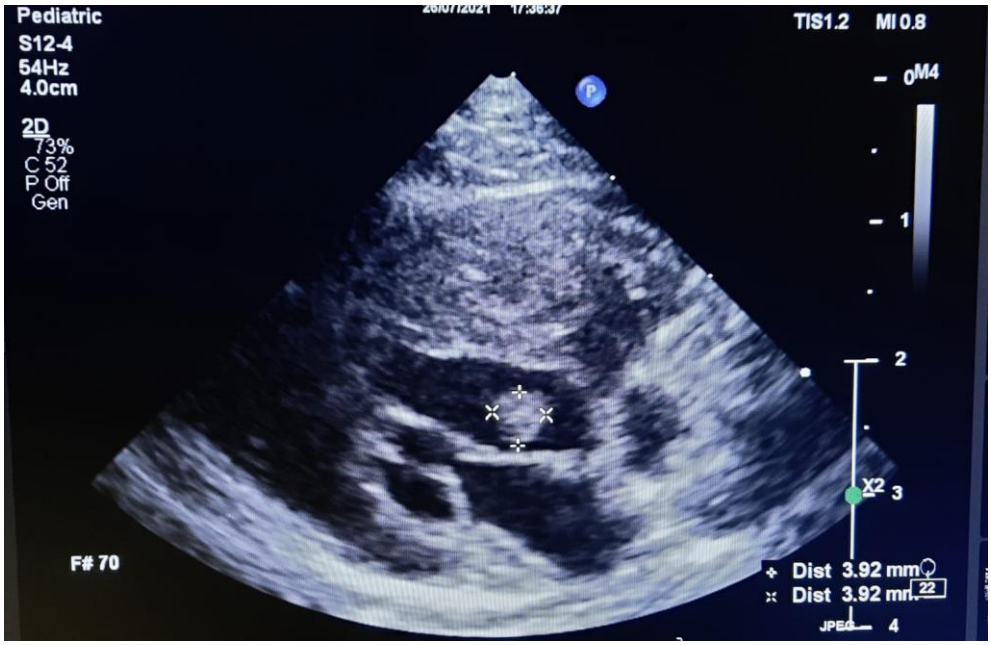

Figure 3: d. Echocardiographic measurement of the mass body

DISCUSSION and CONCLUSION

This case report was to evaluate the diagnosis and management of a cat with aortic valve fibroelastoma. Cardiac tumors have prevalence of 0.02% so they are not common (Hoffmeier et al. 2014). 75% of cardiac neoplasms are benign and %5 of these are fibroelastomas (McAllister and Fenoglio 1978). Even though fibroelastoma benign is a dangerous due to the potential for cerebral or coronary embolization (Sousa-Uva and Cardim 2018). Most papillary fibroelastoma cases are asymptomatic and the lesion is usually finds incidentally (Ikegami et al. 2015). Its etiology is unknown. They are generally with adherent thrombus thats why tends to embolize (Sousa-Uva and Cardim 2018). Papillary fibroelastomas are usually diagnosed by echocardiography. It generally exhibits a small (<1.5 cm), pedunculated, homogeneous valvular or endocardial mass, which moves with cardiac motion (Grebenc et al. 2000). In the treatment, it is recommended to treat symptomatic patients surgically. It can be said that the postoperative prognosis in these patients is very good in long-term observation. Asymptomatic patients with immobile fibroelastoma should be evaluated periodically and it can be followed closely whether the tumor has become mobile echocardiographically, surgical intervention may be considered (Gowda et al. 2003). In this case, after diagnosis mentioned above, heparin at a dose of 100 U/kg every other day, and 1 mg/kg furosemide (Diüril®, Vetaş), and 10 U interferon (Roferon®-A, Roche) for against coronavirus infection, and cardiac supplement feed additive (CardioVet®, VetExpert) for the cat, and specific cardiac diet were started. The cat continues to live asymptomatically and is routinely followed. To give more details; in the treatment, daily antibiotics (Ceftriaxone; 15mg/kg) and fluid therapy were applied and the general condition was followed. On the 3rd day, atenolol was started to be used at a dose of 2 mg/kg once a day. On the 4th day of the treatment, she started to eat dry cardiac diet. In the presence of repeated echocardiographic examinations, the treatment of the fibroelastoma, due to the fact that the mass did not become free, was continued with atenolol and antiplatelet (Plavix®, Sanofi) twice a day. In addition, heparin was used every other day for 1 more week. Because the mass did not become free and partly due to the fact that the mass is more immobile at follow-up and also general condition was much better in our patient, cardiac medications were continued and surgical intervention was not considered.

No previously reported fibroelastoma cases in cats were found in the literature review (Web of Sci.; key words: fibroelastoma, cat, cats; 29.12.2021). Therefore, this case report is important as it guides veterinarians and describes the case in detail.

Ethical Approval: This study is not subject to the permission of HADYEK in accordance with the "Regulation on Working Procedures and Principles of Animal Experiments Ethics Committees" 8 (k). The data, information and documents presented in this article were obtained within the framework of academic and ethical rules.

Conflict of Interest: The authors declared that there is no conflict of interest.

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