

## **Pathological features of arrhythmogenic right ventricular cardiomyopathy in dogs**

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The hearts of five dogs (a 4-year-old Shetland sheepdog, a 4-year-old Labrador retriever, a 5-year-old Bulldog, a 6-year-old Dalmatian, and a 6-year-old Boxer; four males and one female), that had died suddenly and had been clinically diagnosed as having arrhythmogenic right ventricular cardiomyopathy (ARVC), were studied post mortem. At the cut surface, all five hearts showed mild to moderate hypertrophy of the left and right ventricular free walls and ventricular septum, with grayish-white tissue replacement of the myocardium to various degrees. Histologically, all had typical right ventricular features of ARVC and morphological evidence of left ventricular and ventricular septal involvement. Two main histological patterns were identified: a fatty type (two cases) and a fibrofatty type (three cases). With either type, myocardial replacement by fatty or fibrofatty tissue were detected in both ventricles, but were more severe in the right ventricle, where they usually became transmural. Furthermore, the myocardial replacement was more severe in the epimyocardium and midmyocardium; the endomyocardium was less severely affected. Focal or patchy lymphocytic myocarditis, associated with myocyte death and dropout, were identified in both ventricles of the three cases with fibrofatty replacement. The present observation indicates that the pathological findings of canine ARVC causing sudden cardiac death are similar to those of human ARVC. Consequently, spontaneous canine ARVC appears to have substantial value as an animal model of human ARVC.