



G73 Normal Fat in the Right Ventricle vs. Arrhythmogenic Right Ventricular Cardiomyopathy/Dysplasia

Paul Fornes, PhD, and Dominique Lecomte, MD, Forensic Institute of Paris, Medical School Cochin Port Royal, Paris, France*

Fat is a normal component of the right ventricle. In this presentation, the diagnostic criteria for right ventricular cardiomyopathy are examined. The role of fat *per se* in sudden death is discussed.

Fat is a normal component of the right ventricle. However, in some hearts the proportion of fat is dramatically increased. The question of whether fat infiltration of the right myocardium *per se* can be responsible for sudden death has not yet been answered. In a previous series of sudden cardiac deaths related to arrhythmogenic right ventricular cardiomyopathy, the authors showed that in this disease, fat was constantly associated with fibrosis^[1]. The significance of fat infiltration without fibrosis in the right ventricle was not discussed. In a first part of the present study, the authors examined 30 right ventricles with an increased amount of fat, which was semi-quantitatively evaluated using a score of severity ranging from 1 (minimal increase) to 4 (transmural involvement). These hearts were obtained from persons who died of violent or natural death, but sudden cardiac deaths were excluded. The hearts were compared in blind conditions to those from the authors' previous sudden death series. In the nonsudden death group, the mean age was 62 years (range, 42-97), 80% of victims were female and 20% of right ventricles had grade 4, 45%, grade 3, 30%, grade 2 and 5%, grade 1. Fibrosis was never observed. In a second part of the study, case-reports of the literature were analyzed, in which fat infiltration *per se* was considered the cause of sudden cardiac death. A personal case-report is also reported in which sudden cardiac death occurred in a person who had only fatty replacement of the right ventricle.

Conclusion. Fat is a normal component of the right ventricle, and may be increased in certain persons, especially obese and/or old women. Sudden cardiac death is most likely to occur when fat is associated with fibrosis. Sudden cardiac deaths have rarely been reported to have occurred despite absence of fibrosis. In such cases, additional factors may contribute to the arrhythmogenicity.

[1] Fornès P, Ratel S, Lecomte D. Pathology of arrhythmogenic right ventricular cardiomyopathy/dysplasia. An autopsy study of 20 forensic cases. *J Forensic Sci* 1998 ; 43 : 777-83

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