Atrial Fibrillation with Ventricular Tachycardia Showing "Dressler" Beats*

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The recognition of ventricular tachycardia in the presence of atrial fibrillation can be difficult since this combination may be simulated by aberrant conduction of the fibrillatory impulses,¹ by accelerated conduction,² and by junctional rhythm with aberration.³,⁴ The following electrocardiograms are of interest since fusion beats as described by Dressler and Roesler⁵ have not, to our knowledge, been commonly reported in extrasystolic ventricular tachycardia associated with atrial fibrillation. Such "Dressler" beats still constitute a very important clue to ventricular tachycardia,⁶⁷ although not completely diagnostic as fusion can also occur with abnormally conducted beats.²,⁶ In the present tracings, aberrant conduction can be excluded as unlikely.

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CASE REPORTS
A 64-year-old white man was admitted to the hospital with classic acute inferolateral myocardial infarction. The initial electrocardiogram taken one hour after onset of chest pain showed atrial fibrillation as well as the changes of infarction. Initial therapy consisted of morphine for pain and furosemide (Lasix) and crystalline lanatoside C (Cedilanid) for early congestive failure. Shortly thereafter he developed occasional premature ventricular beats in addition to the atrial fibrillation (Fig 1).

A lidocaine (Xylocaine) drip was started, but five minutes later a short run of ventricular tachycardia was observed on the monitor. Despite the administration of procainamide hydrochloride (Pronestyl) and more lidocaine, there were recurrent runs of ventricular tachycardia (Fig 2) at a rate of approximately 150 beats per minute separated by intervals of the original atrial fibrillation. During these runs the patient's vital signs were well maintained and he was not especially uncomfortable. The entire episode lasted six minutes and several minutes thereafter the atrial fibrillation converted to normal sinus rhythm. Subsequent tracings showed extension of the current of injury to the lateral wall. Two days later Mobitz II block developed, requiring the insertion of a temporary pacemaker. He then made an uneventful recovery.

DISCUSSION
The arrhythmia described is thought to be ventricular tachycardia. Diagnostic points originally described by Robinson and Herrmann,⁸ have been

![Electrocardiogram](image)

**Figure 1.** CCU admission strip of lead 3 showing atrial fibrillation and a PVC. Coupling interval is .38 seconds. Preceding interval (dash) is not long.
fulfilled, namely, that the paroxysmal beats be ectopic in origin and conform in contour to isolated premature ventricular beats observed before the onset of the paroxysms; and that the initial beat of the paroxysm have the same coupling interval as do the isolated beats. Thus, in the present case isolated premature ventricular beats were observed and the initial beats of the paroxysms showed identical coupling intervals. Aberrant conduction seems unlikely for several reasons. The beats are monophasic with the initial vector different from the conducted beats. The beats of the paroxysms are regular, whereas the dominant atrial fibrillation is irregular. The onset of the bizarre beats does not follow a long cycle. Additionally, the paroxysms terminate with pauses, probably due to depression of the conducting system by the ectopic focus, another indication of a ventricular origin for the arrhythmia.

Within these paroxysms, "Dressler" beats are present with frequency of about 12 per minute (Fig 3). The third beat marked in this strip is especially narrow and represents almost complete supraventricular capture. This beat is, however, still a fusion beat because its initial vector is different from the conducted beats.

Thus, during the initial stages of an acute myocardial infarction, paroxysms of ventricular tachycardia are seen in the presence of atrial fibrillation. Numerous “Dressler” beats are present, some showing almost complete supraventricular capture. Although fusion beats have been observed in accelerated ventricular rhythm and slow ventricular parasystolic tachycardia when the supraventricular mechanism is atrial fibrillation, to our knowledge, such “Dressler” beats have not commonly been reported in extrasystolic ventricular tachycardia with atrial fibrillation.

REFERENCES