



BMH Medical Journal 2015;2(2):55-56 **Interesting Holter Tracing**

Atrial Ectopics Precipitating Atrial Fibrillation

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Abstract:

Holter monitor tracing showing blocked atrial ectopics and atrial ectopic precipitating atrial fibrillation is being demonstrated. Initially it was coarse atrial fibrillation, which rapidly degenerated into fine atrial fibrillation.

Keywords: atrial ectopics, atrial fibrillation

Introduction

It is well known that premature ventricular complexes (ventricular ectopic beats) can precipitate ventricular tachycardia / fibrillation, especially if they fall on the vulnerable period of ventricular repolarization. This was the rationale for giving prophylactic lignocaine infusions in those with acute myocardial infarction and frequent ventricular ectopy in yester years [1]. Same physiology can apply to the atria which can go into atrial fibrillation if a critically timed atrial (supraventricular) ectopic occurs. This mechanism is important in the genesis of paroxysmal atrial fibrillation with non dilated atria, where foci originating within the pulmonary veins are thought to be important in the genesis of atrial fibrillation [2]. This is the basis of using pulmonary vein isolation by radiofrequency catheter ablation as an important modality for treating paroxysmal atrial fibrillation.

Author has personally seen a patient with dual chamber pacemaker going into an episode of atrial fibrillation when the pacemaker programmer wand with magnet was placed over the pacemaker, on two occasions. The mechanism here is that magnet cuts off the sensing function of the pacemaker which then runs in the asynchronous mode leading to atrial beats which if in the vulnerable period of repolarization of atrial myocardium can precipitate atrial atrial fibrillation. Report of magnet application over pacemaker leading to ventricular fibrillation by the same analogy is available in literature [3].

Holter tracing with atrial ectopics and atrial fibrillation

Holter monitoring done for evaluation of irregular heart beats picked up on routine auscultation, but not documented on 12 lead ECG incidentally picked up multiple blocked atrial ectopics and one atrial ectopic triggering coarse atrial fibrillation which degenerated into fine atrial fibrillation (**Figure 1**).

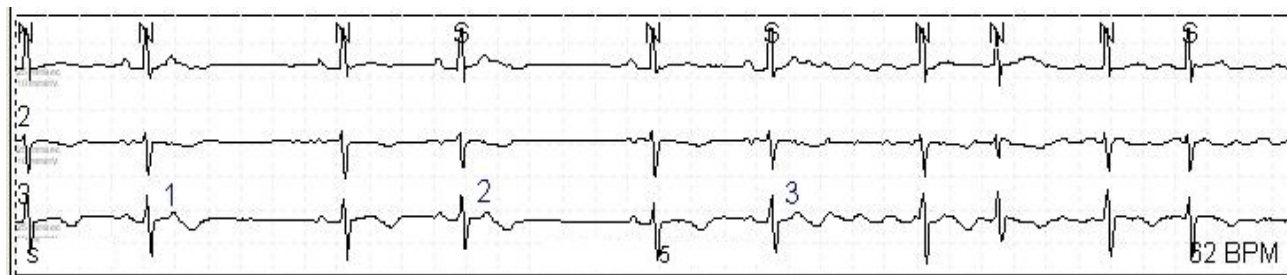


Figure 1: Holter tracing showing blocked atrial ectopics and ectopy precipitating atrial fibrillation. Ectopic P waves labelled 1 and 2 are not conducted down (blocked). Ectopic labelled as 3 precipitates coarse atrial fibrillation which soon degenerates into fine atrial fibrillation

The focus of origin of the atrial ectopic cannot be definitely identified from these three monitor leads alone, though it may be noted that they are well seen in the first and last channel while they are nearly isoelectric in the middle channel. The blocked ectopics cause a short pause in the sinus cycle as they are conducted back into the region of the sinus node and resets the sinus cycle. It is an incomplete compensatory pause typical of supra ventricular ectopy as the cycle including the pause is in less than twice the previous sinus cycle length.

References

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