Newly diagnosed NSVT episodes detected in the memory of antibradycardia pacemakers, in the absence of known arrhythmogenic disease.

Gatzoulis KA, Arsenos P, Manakos K, Tsiachris D, Papadopoulos A, Kritikos A, Dilaveris P, Sideris S, Kalikazaros I, Tousoulis D.

Introduction:

Antibradycardia Pacemaker
for disturbances of current generation/propagation

Innovative programs for the detection of tachyarrhythmic episodes (sufficient memory for ECG recordings).

Purpose:

Unexpected Complex Ventricular Ectopy
in the absence of systolic ventricular dysfunction
was observed in Pacemaker's memory.

To investigate further.

Methods:

144 patient's pacemakers interrogated

no-known organic heart disease
no stable coronary disease

normal left ventricular systolic function

♂	62 %
mean age	77±10 years
mean LVEF	55 %
VVI	25 %
DDDR	75 %

The underlying diseases were:

Sinus Node Disease: 68%

2nd Atrio-Ventricular block (AVB): 13 %
3rd degree AVB: 27 %
Bifascicular AVB: 0.7 %
Trifascicular AVB: 1.4 %
Atrial fibrillation: 43 %

During the last year, we interrogated the pacemakers searching for NSVT episodes in their memory

Results:

5.3±6.1 years after the implantation

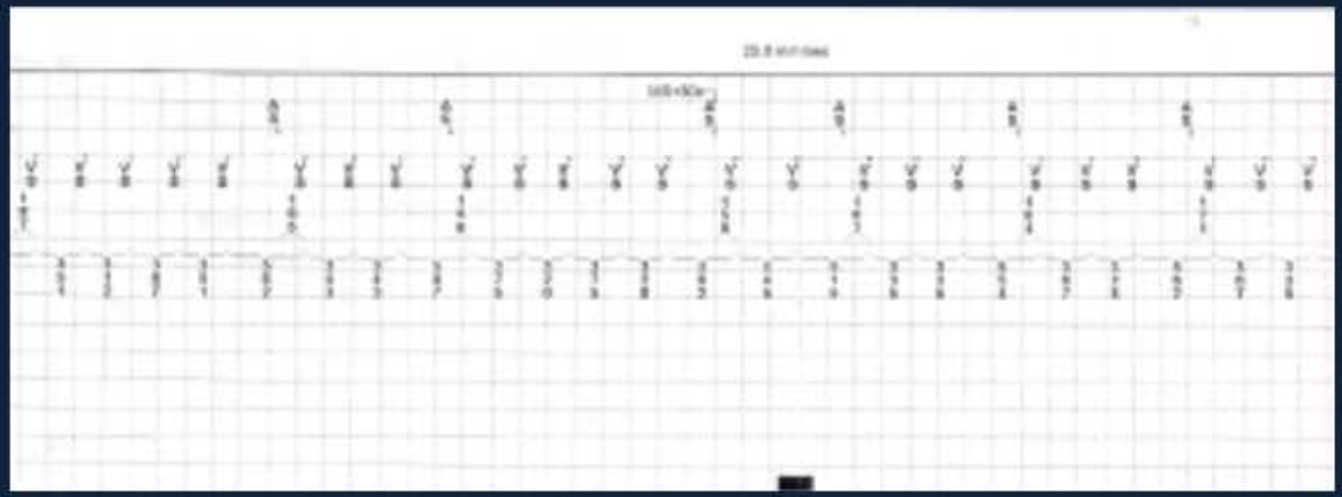
NSVT episodes in 53/144 patients (37%)
(10±5 QRS complexes in a row)

22 patients out of these 53(41%) had

SND ➡ DDDR

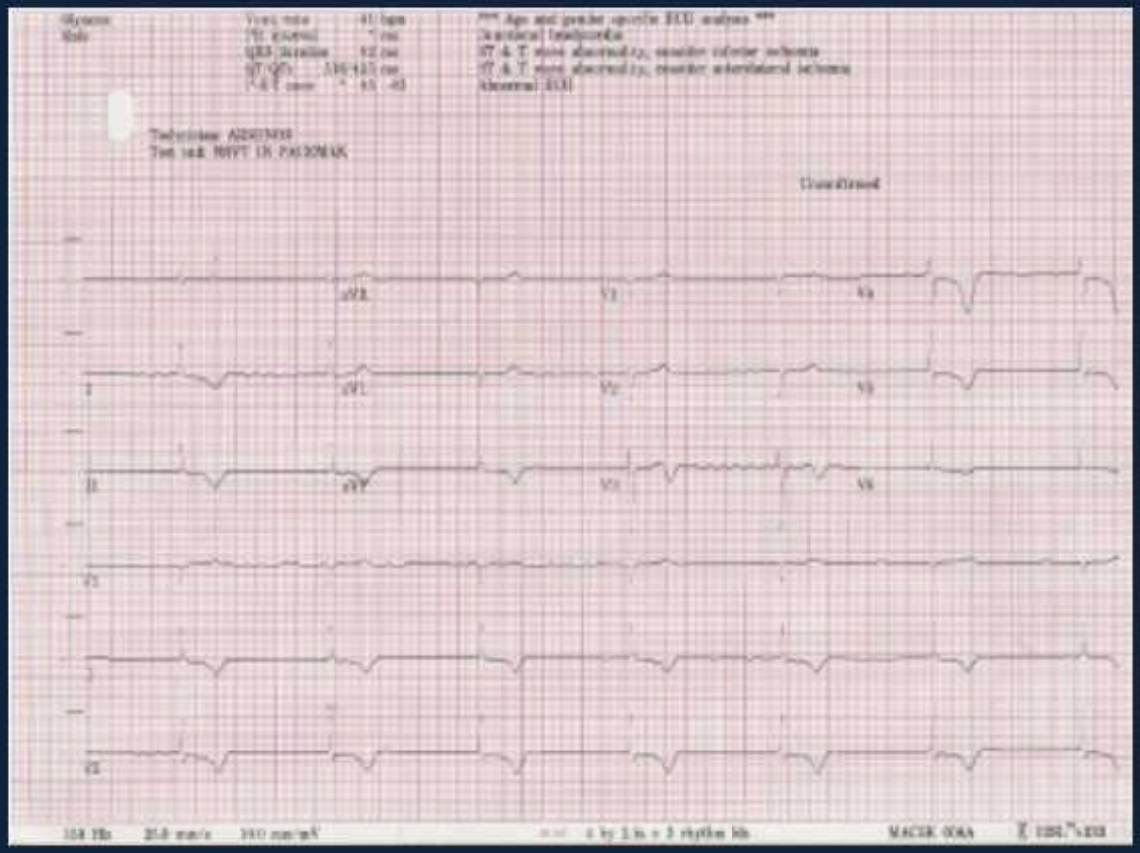
Telemetric detection of VT

Intracardiac ECG A-V dissociation



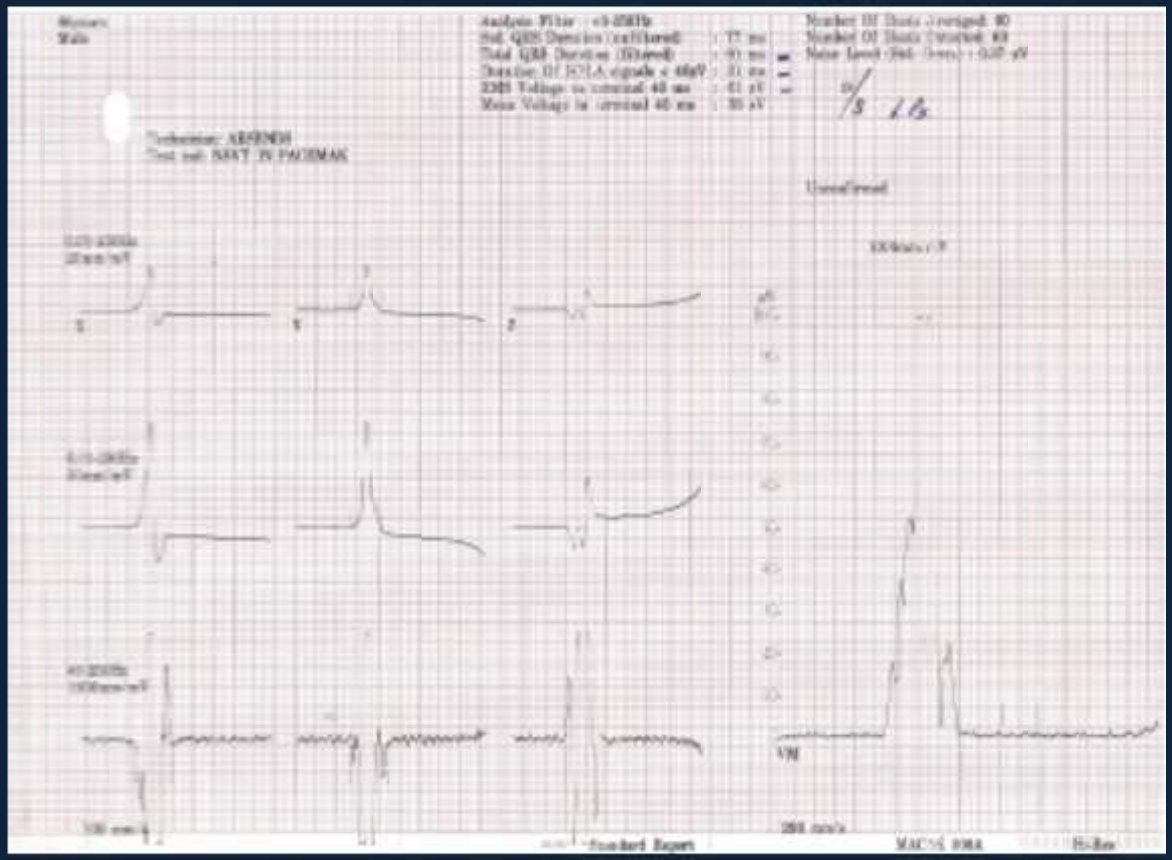
temporary low rate
VVI pacing mode
(30 bpm)

endogenous slow
ventricular rate
(41 bpm)
and AF



SAECG Late Potentials

stQRS: 77ms
fQRS: 91ms
LAS: 31ms
RMS: 61 μV



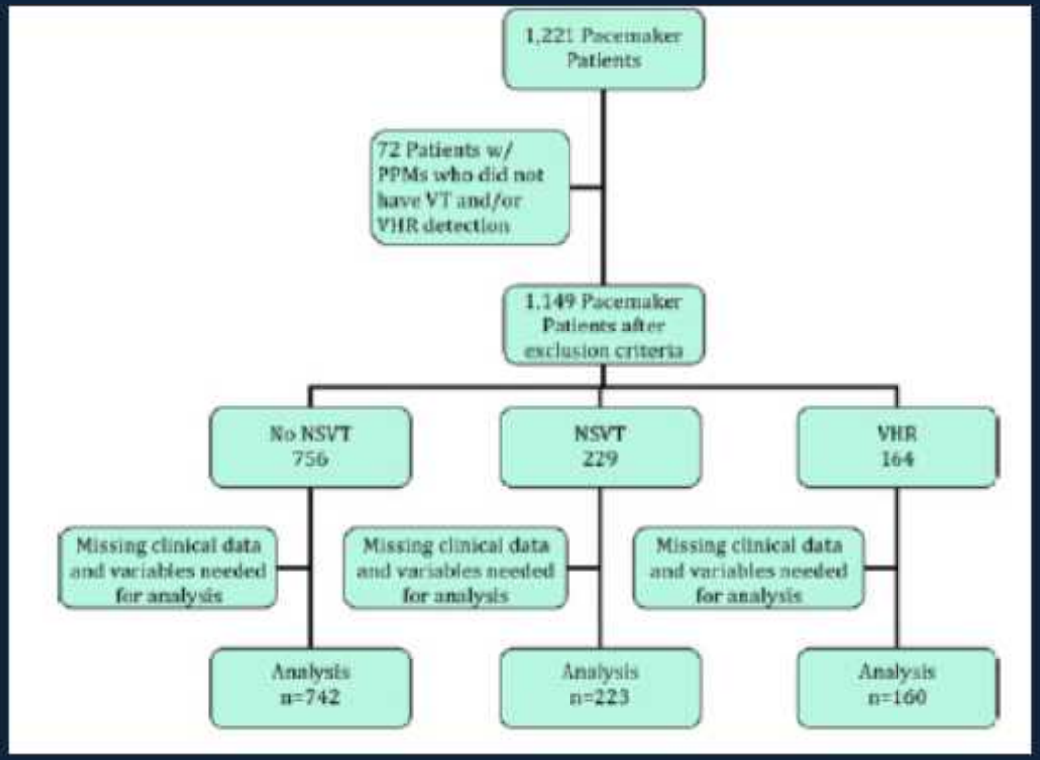
Prevalence of NSVT in pacemaker's memory

Present study:
53/144 patients (37%)

Seth's study:
223/1125 (20%)

Clinical Significance of Nonsustained Ventricular Tachycardia on Routine Monitoring of Pacemaker Patients.

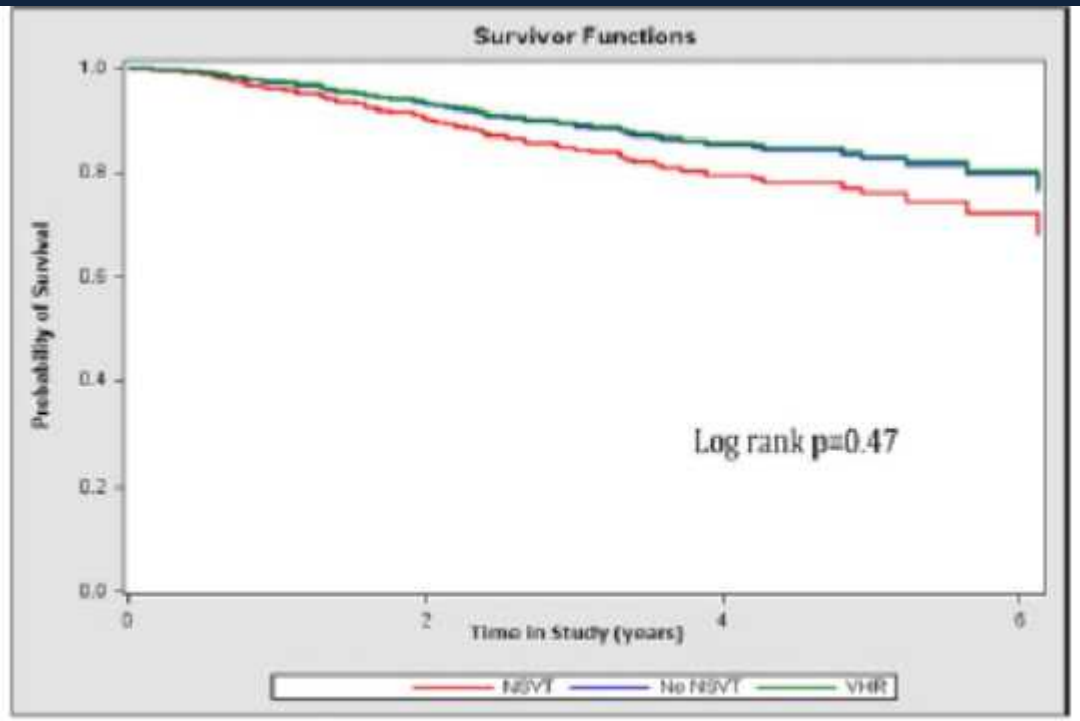
Seth N, Kaplan R, Bustamante E, et al.



Pacing Clin Electrophysiol 2015 Aug;38(8):980-8.

Clinical Significance of Nonsustained Ventricular Tachycardia on Routine Monitoring of Pacemaker Patients.
Seth N, Kaplan R, Bustamante E, et al.

Median FU 2.8 years



	Baseline	2 Years	4 Years	6 Years
NSVT	223	175	55	11
No NSVT	742	356	73	11
VHR	160	107	35	5

No difference in survival among groups

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Pathophysiology of Fibrotic Remodeling

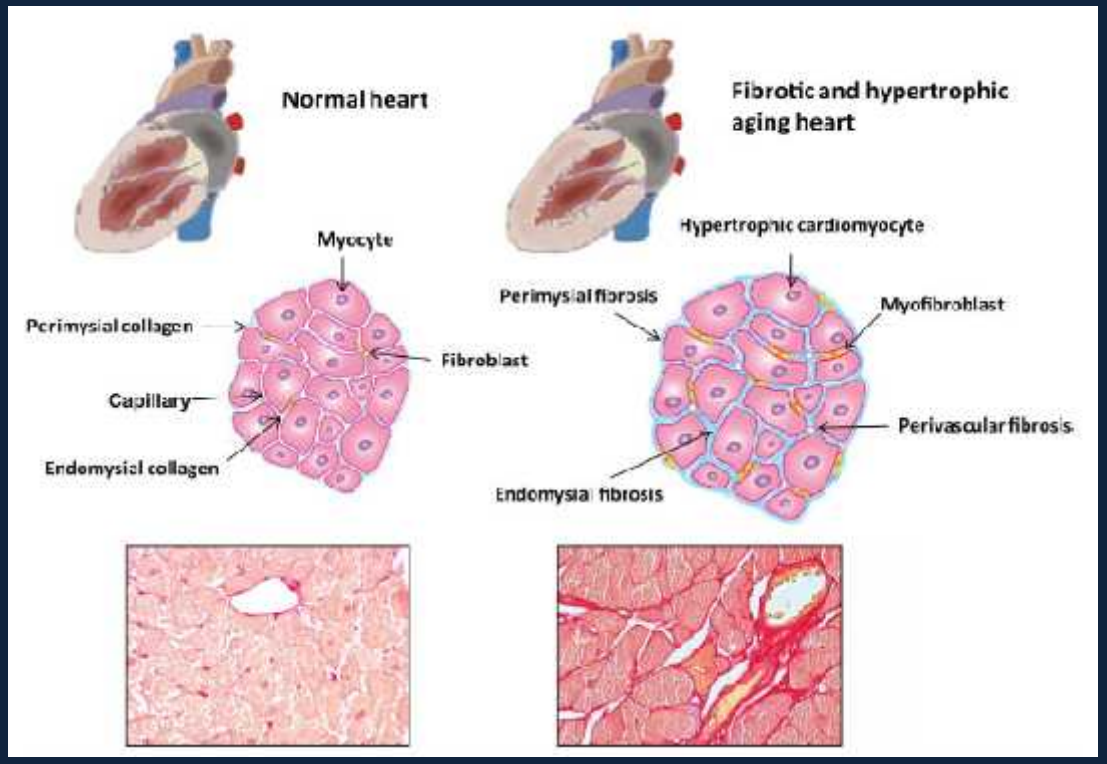
Hypertrophy of cardiomyocytes
Fibroblasts -> Myofibroblasts
↑ Extacellular matrix proteins

Perivascular Fb.
Endomysial Fb.
Perimysial Fb.

Aging and Cardiac Fibrosis

Anna Biernacka and Nikolaos G Frangogiannis*

Division of Cardiology, Albert Einstein College of Medicine, Bronx NY, USA



Aging and Disease Volume 2, Number 2, 158-173, April 2011

Conclusions:

In elderly treated with an antibradycardia pacemaker a significant proportion of them presented with

subclinical NSVT

despite the absence of any systolic

Conclusions:
Senile ventricular fibrosis
could explain such findings.

The clinical impact of the observed complex ventricular arrhythmia in this elderly population without any evidence of systolic ventricular dysfunction remains unknown.