Cardiac palpitations in menopausal women due to non sustained right atrial tachycardia

> Sclarovsky S M.D. Sclarovsky E M.D.

4th International Meeting Ibero-American Forum for Arrhythmias Buenos Aires 2011 The microstructure of the female right atrium (RA) is under estrogen control During mammals pregnancy the RA and the vena cava annulus must be dilated to increase the input of cardiac flow

The fibroblast of RA has the same morphology and physiology as the skin one Cardiac fibroblast The renaissance cell Circ Res 105;1164;2009

The longitudinal anisotropic conduction in the RA is due to intercalated fibrosis mostly in the elderly

Spach SM; Evidence of electrical un coupling of side to side fiber connection with increasing age Cir Res 58 336 1986



In postmenopausal female accumulate fibrotic tissue in the RA and vena cava annulus

Non sustained atrial tachycardia

The concept is taken from- non sustained ventricular tachycardia

This is a self limited, fast atrial tachycardia with 3-60 consecutive beats

BACKGROUND

Non sustained atrial tachycardia in patients without Stractural heart disease



Sclarovsky et al, Maturitas 2005

NON-SUSTAINED ATRIAL TACHYCARDIA

A self limited atrial tachycardia HR >100 bpm >3, <60 consecutive atrial beats





To study the electrocardiographic characteristics of non sustained atrial tachycardia as manifested in women without structural heart disease



> 12 leads Mortara Holter system recording during 24 consecutive hours.

> All arrhythmias were recorded.

Three groups: # Menopause # fertile # Pregnant

NSAT- Ectopic type

ECG characteristics:

➤ P'-P' irregular (beat to beat T deformation)

➢ P'-P' similar morphology

> P'-R' changes in distance from beat to beat

most ectopic P' are similar to the sinus P indicating its origin from the high right atrium (para-sinus area)

Non- sustained atrial tachycardia Ectopic type (para-sinus)



NSAT- re-entry type

ECG characteristics

- > P'-P' regular rate
- >> P'-P' similar morphology
- > P-R interval is constant

Most of P' waves morphology is inverted in L₂,V₅₋₆, and positive in AVR indicating low right atrial or left atrial origin



➤ NSAT- re entry type ♀ 55 yo

>3 consecutive low right atrium





NSAT ectopic type inducing complicated <u>atrial arrhythmia</u>:

> Re-entry- 5/56 (8,1%)

> Atrial flutter- 3/56 (5,3%)

Paroxysmal atrial fibrillation16 /56 (28,3%)



Limb and precordial leads are from the same 4-second segment.

<u>CONCLUSIONS</u>

NSAT- ectopic type, is frequently found in menopausal women with palpitations.

The morphology of the P' waves on NSAT- ectopic type, suggests that, in most pts, the focus of the arrhythmia is located in the superior part of the right atrium.

NSAT- ectopic type could be the inducer of complicated atrial arrhythmiasthis observation has clinical and therapeutic implications.