Post AF ablation blanking period: importance and duration

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What is the meaning of BLANKING Period????

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CASE 1
• 58 yr M, civil pilot, DM T2, HTN presented with persistent AF since 3 ms
• To renew his flying licence He undergoes routine medical check up and ECG every 6 months [SR & no structural heart disease ]

CASE 1
• 1st attack of AF in 2003 converted SR by propafenone

• He was asymptomatic till 2015 when he suffered another attack of AF that needed DC shock He received Amiodarone and NOAC

• In the last 3 months, he suffered frequent attacks of AF that was NOT CARdioverted by DC shocks and was exempted FROM Flying
Given that he is a civil pilot suffering from persistent AF, the decision was made to perform AF ablation after patient counselling and informing him that success rate of AF ablation procedure in the 1st time is 50-70 % and reaches 80% in the 2nd time.
Optima

Pulmonary veins isolation

LAA  LSPV  LA  RSPV
LIPV  RIPV
Disappearance of PVPs
Post-ablation event:
- The patient was discharged on apixaban 5 mg bid and amiodarone 200 mg od
- The patient suffered an AF attack in the 5th day after the ablation
What is the next step?

1- Arrange for another ablation procedure as soon as possible
2- Give IV amiodarone then DC shock to re-establish sinus rhythm
3- Reassure him and change medical
4- Wait and see

What is the next step?

1- Go for another ablation procedure as soon as possible
2- Give IV amiodarone then DC shock to re-establish sinus rhythm as soon as possible
3- Reassure him and change medical
4- Wait and see
IV amiodarone then DC shock

Post-Ablation Management
Anticoagulation & Antiarrhythmic

All patient should receive OAC for at least 8 weeks after catheter ablation IIa

Then continuation of OAC is recommended according to CHA2DS2 VASc score

All patients should continue antiarrhythmic drugs for 3 MONTHS \textbf{BLANKING PERIOD}

Blanking Period

- Protection during the \textit{blanking period} (1 to 3 months post-ablation) is recommended
- Early recurrence of atrial arrhythmias has been reported in up to 45% of patients during the first 3 months post-ablation
- \textbf{Sixty percent} of patients experiencing these arrhythmias will not have any further arrhythmia during long-term Follow up.
Blanking Period

Potential mechanisms of early AF

• Inflammatory response after RF-induced thermal injury or reactive pericarditis

• Transient imbalance of the autonomic nervous system ultimately acting as an arrhythmia trigger

• Changes in fluid and electrolytes balances

Blanking Period

• Because of the potential transient nature of these arrhythmias, their occurrence should not prompt immediate re-ablation attempts.

• This time frame, during which early recurrences of AF may not be indicative of Ablation failure, is being referred to as Blanking Period
Redefining the Blanking Period After Catheter Ablation for Paroxysmal Atrial Fibrillation

Insights From the ADVICE (Adenosine Following Pulmonary Vein Isolation to Target Dormant Conduction Elimination) Trial

Stephan Willems, MD; Paul Khairy, MD, PhD; Jason G. Andrade, MD; Boris A. Hoffmann, MD; Sylvie Levesque, MSc; Atul Verma, MD; Rukshen Weerasooriya, MBBS; Paul Novak, MD; Thomas Arentz, MD; Isabel Deisenhofer, MD; Thomas Rostock, MD; Daniel Steven, MD; Lena Rivard, MD; Peter G. Guerra, MD; Katia Dyrd, MD; Blandine Mondesert, MD; Marc Dubuc, MD; Bernard Thibault, MD; Mario Talajic, MD; Denis Roy, MD; Stanley Nattel, MD; Laurent Macle, MD; for the ADVICE Trial Investigators®

Blanking Period and late AF recurrence after first AF Ablation
Blanking Period Duration

• Early recurrence of AF (3 month) post Ablation is non Specific

• Does the timing of recurrence Make a difference in LATE recurrence ????
  • First month
  • Second month
  • Third month

Does the timing of Early recurrence Make a difference in LATE recurrence ????
Amiodarone reduces Early AF recurrence during 3 month Blanking Period
Amiodarone Did NOT reduce Late recurrence of AF at 6 month Follow UP
Blanking period after Second AF Ablation

40% of early AF recurrence after second AF ablation session will NOT have late AF recurrence.

Mechanism of AF recurrence after second AF ablation session

Increased LA pressure (reflecting increase in LVEDP) measured by increased E/e' by Echo Doppler is an independent predictor of late AF recurrence.
IV hydrocortisone 2 mg Immediately post Ablation

Oral corticosteroid 0.5 mg/kg/day for 3 Days

Significant reduction of Early AF recurrence

Risk factors for atrial fibrillation recurrence after ablation

Age Increased risk of recurrence with advancing age AF duration and type (Longstanding persistent > persistent > paroxysmal)

Cardiac structural changes Left atrial dilatation; left ventricular function; hypertrophic cardiomyopathy; valvular heart disease

Clinical features Hypertension; obesity; obstructive sleep apnea/sleep disordered breathing; metabolic syndrome; thyroid disease
Prediction of very late arrhythmia recurrence after radiofrequency catheter ablation of atrial fibrillation: The MB-LATER clinical score

Nebojša Mujović, Milan Marinković, Nebojša Marković, Alena Shantsila, Gregory Y. H. Lip & Tatjana S. Potpara

Table 2. The MB-LATER score. AF = atrial fibrillation.
Case 2

- A 37 Y M , DM, dyslipedemic and paroxysmal recurrent AF since one year
- Attacks of AF 2 hours, DC shock
- Amiodarone 200mg daily, rosuvastatin 10 mg daily and dabigatran 150 mg twice daily
- ECHO normal LA 37 mm
RESTING ECG

AF
First Ablation session
Case 2
One month after Ablation

• He had recurrent palpitations and was admitted to ER

• He received DC shock

• Amiodarone 200mg daily, rosuvastatin 10 mg daily and dabigatran 150 mg twice daily

ECG
Second Ablation session
Second Ablation Session

THANK YOU