

Riziko komplikací radiofrekvenční katetrové ablace mitrálního isthmusu v rámci komplexní ablace perzistující fibrilace síní

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2016 ESC Guidelines for the management of atrial fibrillation developed in collaboration with EACTS

The Task Force for the management of atrial fibrillation of the European Society of Cardiology (ESC)

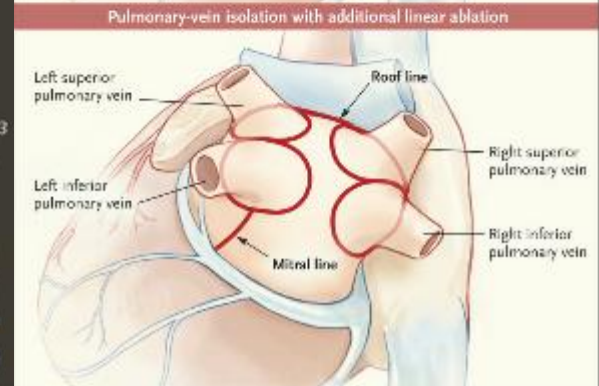
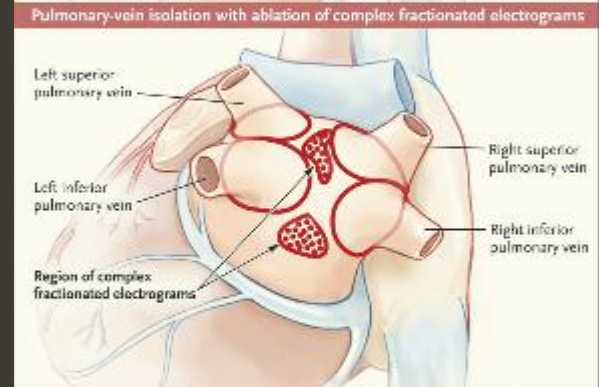
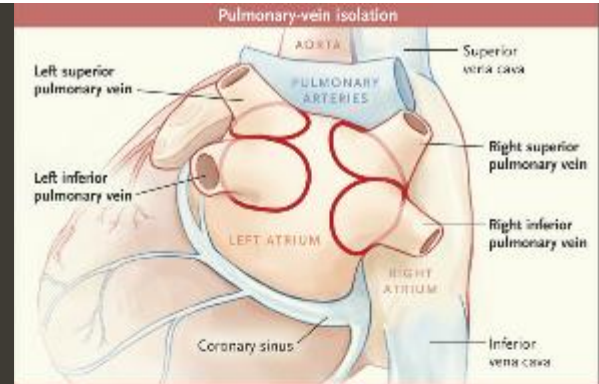
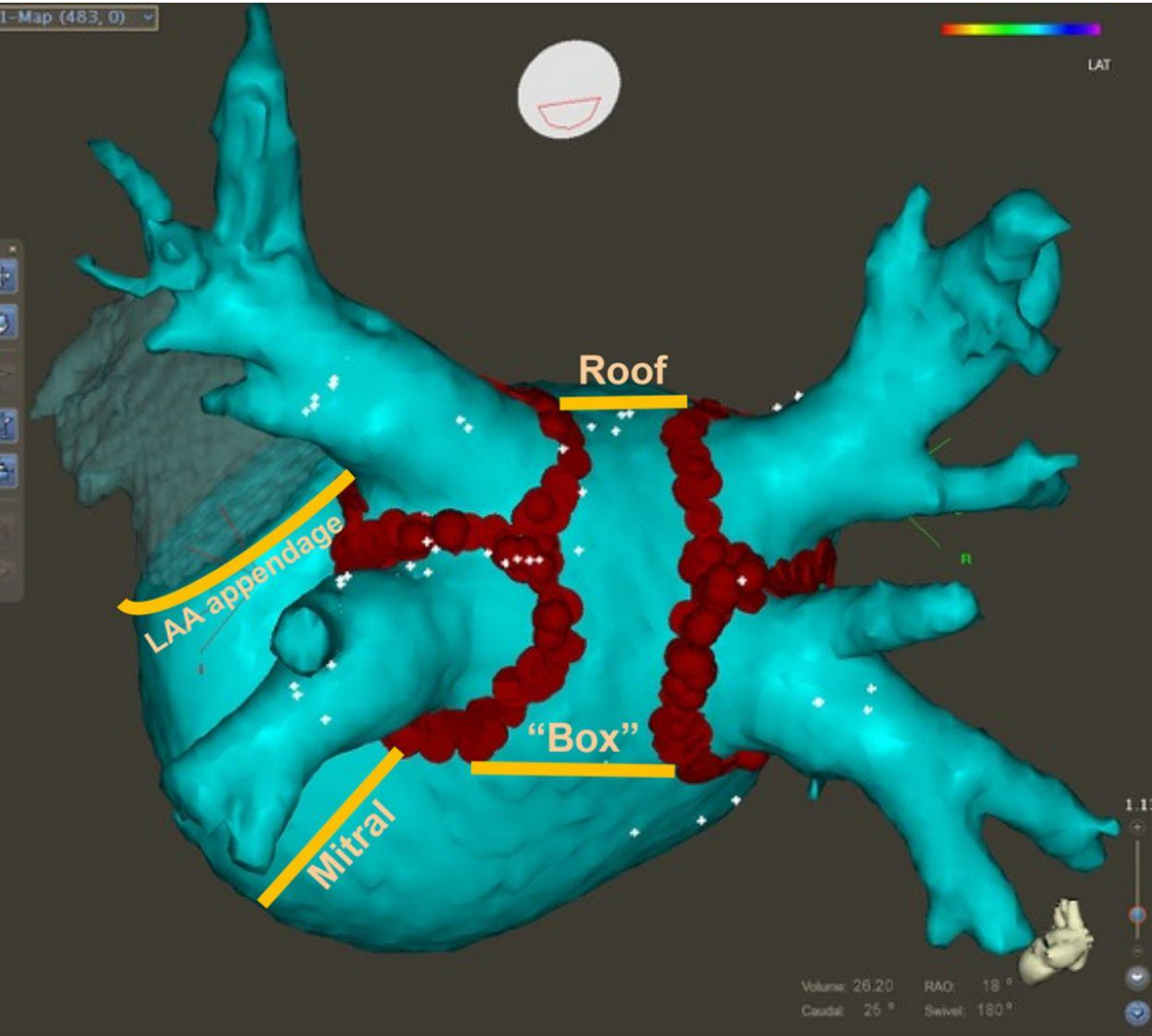
Developed with the special contribution of the European Heart Rhythm Association (EHRA) of the ESC

Catheter ablation should target isolation of the pulmonary veins using radiofrequency ablation or cryotherapy balloon catheters.

IIa

B

perzistující FiSi – stačí jen izolace plicních žil??



... než inkompletní linie, tak raději žádná ...





Clinical update

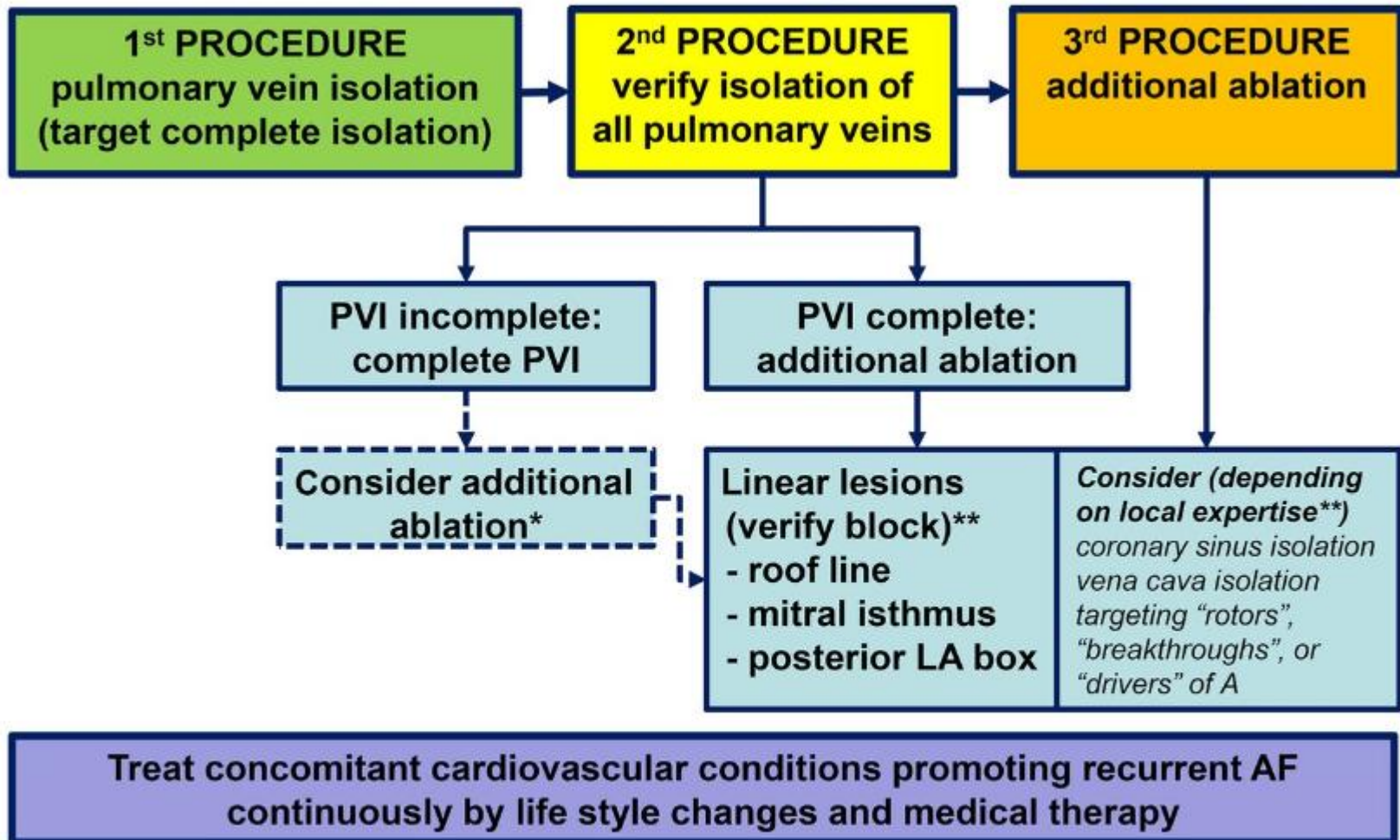
Catheter ablation in patients with persistent atrial fibrillation

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Sequence of ablation targets for persistent AF



*additional linear lesions should be performed in patients with macroreentrant atrial tachycardia / flutter

** there is little data to inform the choice of linear lesions and other additional ablation targets. Local expertise to achieve the desired ablation target (e.g. crossing short lines) should determine the choice.

*** right atrial isthmus ablation should be considered if isthmus-dependent atrial flutter is documented

Current ablation techniques for persistent atrial fibrillation: results of the European Heart Rhythm Association Survey

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Conducted by the Scientific Initiatives Committee, European Heart Rhythm Association

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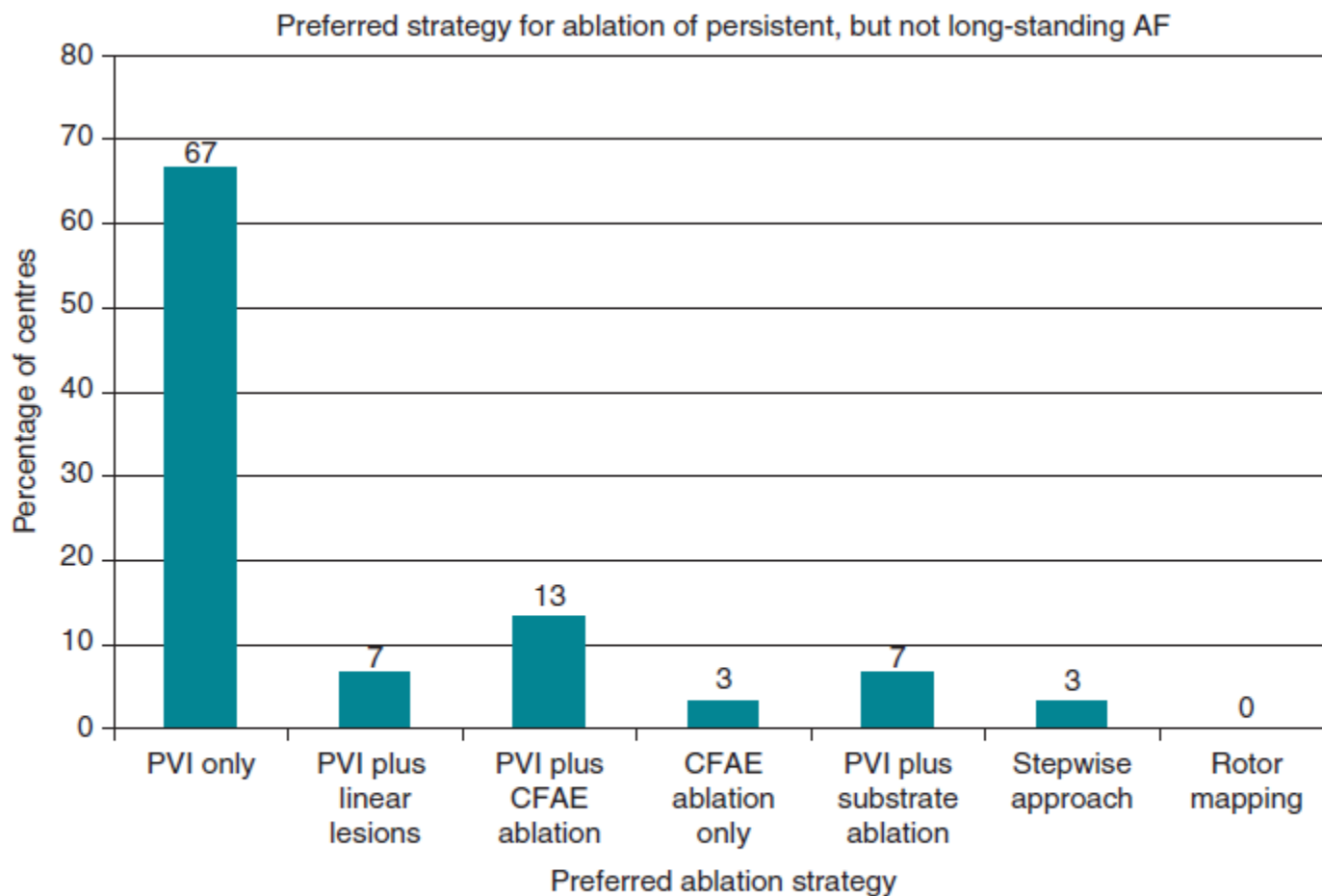


Figure 1 Preferred strategy for first ablation of *persistent, but not long-standing* AF. CFAE, complex fractionated atrial electrogram; PVI, pulmonary vein isolation; stepwise approach, stepwise approach until termination of AF; substrate ablation, substrate mapping and isolation of low-voltage areas.

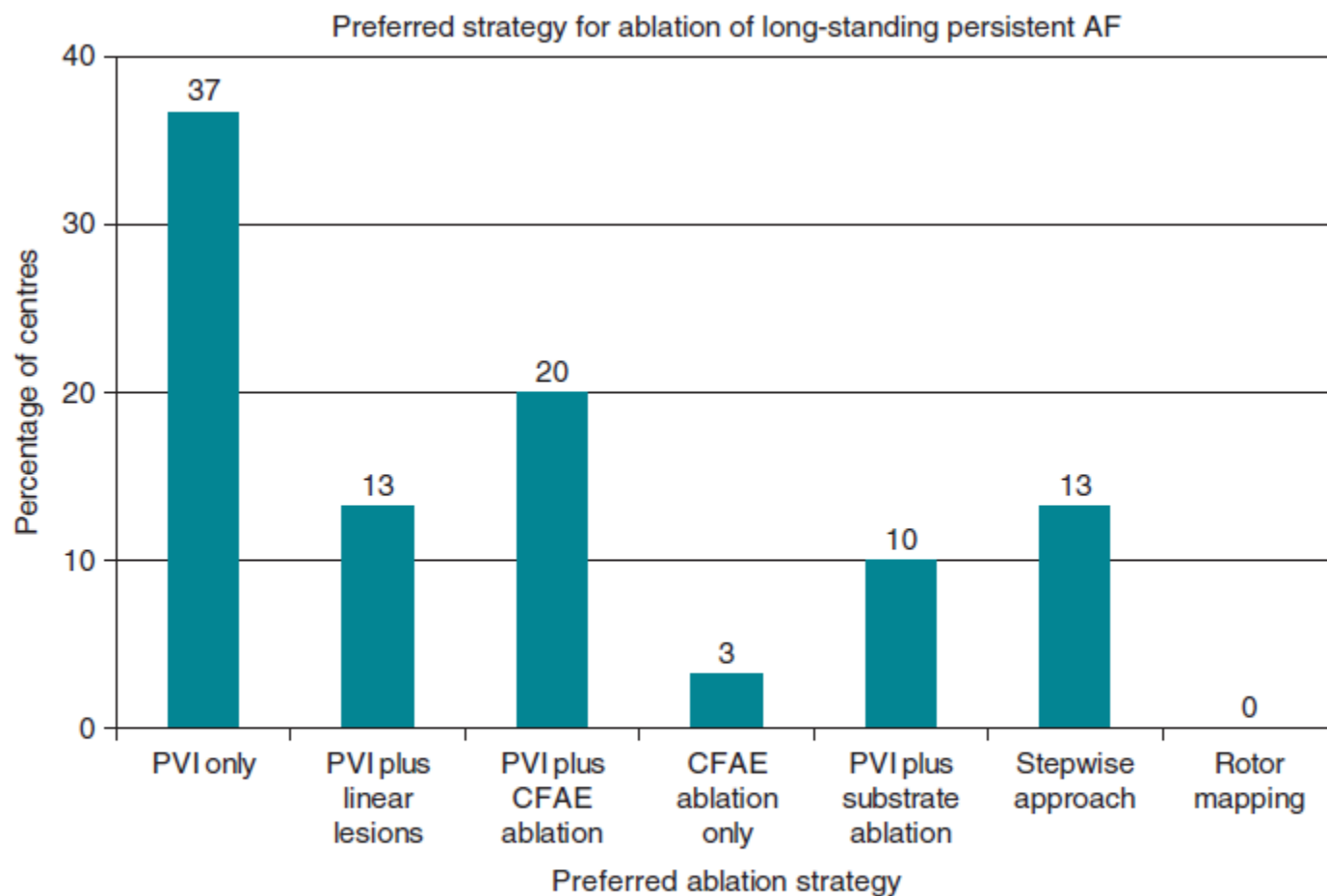
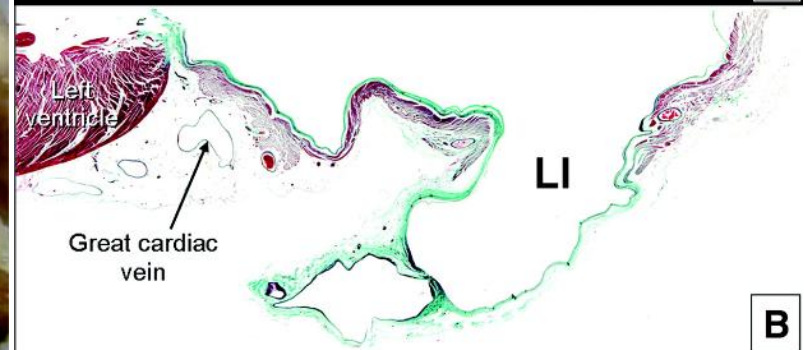
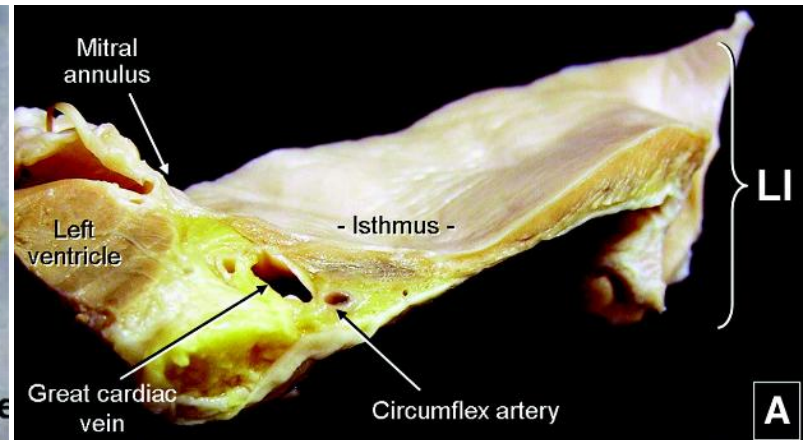
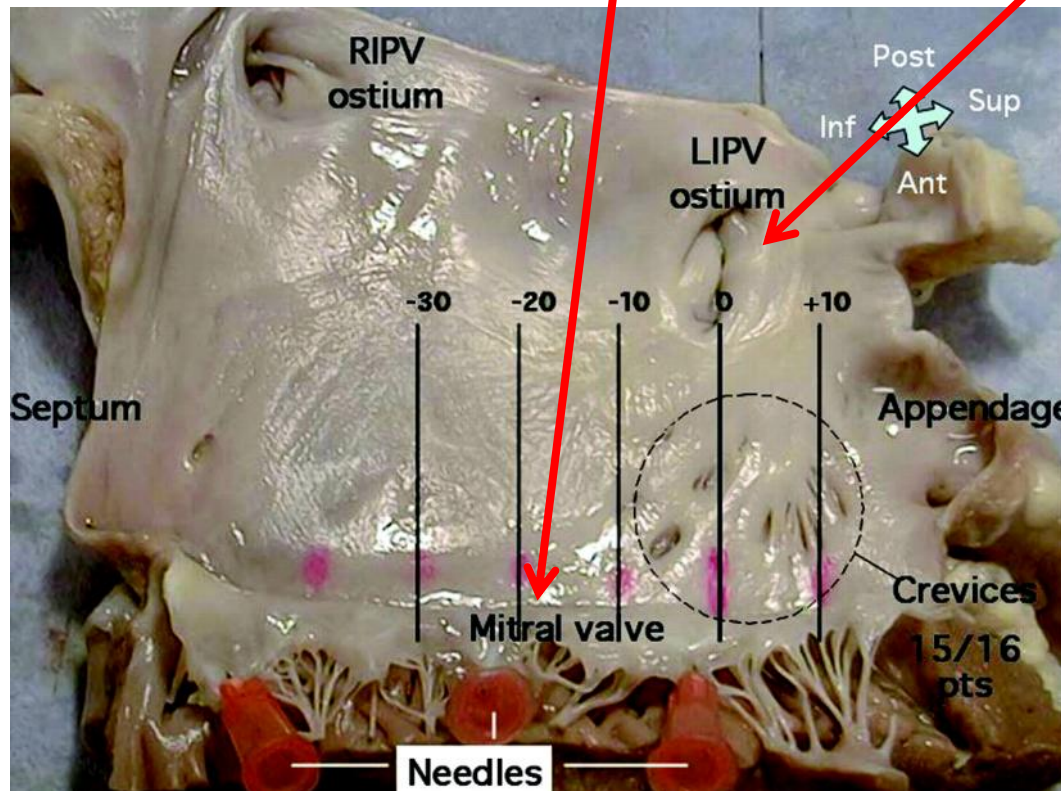


Figure 2 Preferred strategy for first ablation of *long-standing persistent AF*. CFAE, complex fractionated atrial electrograms; PVI, pulmonary vein isolation; stepwise approach, stepwise approach until termination of AF; substrate ablation, substrate mapping and isolation of low-voltage areas.

trocha anatomie

- **Mitrální isthmus** - struktura mezi levou dolní plicní žilou (LIPV) a mitrálním anulem (MA)

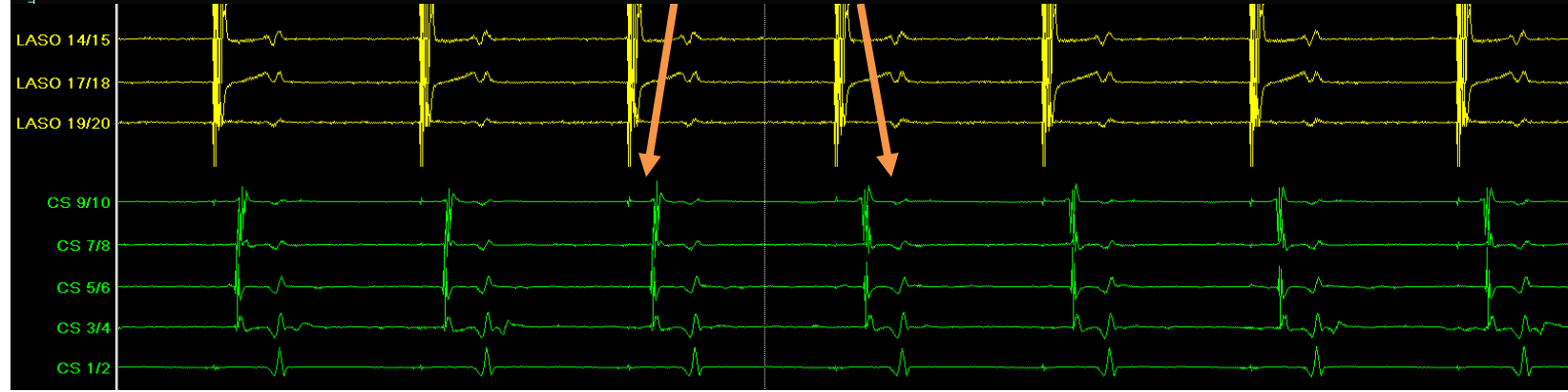
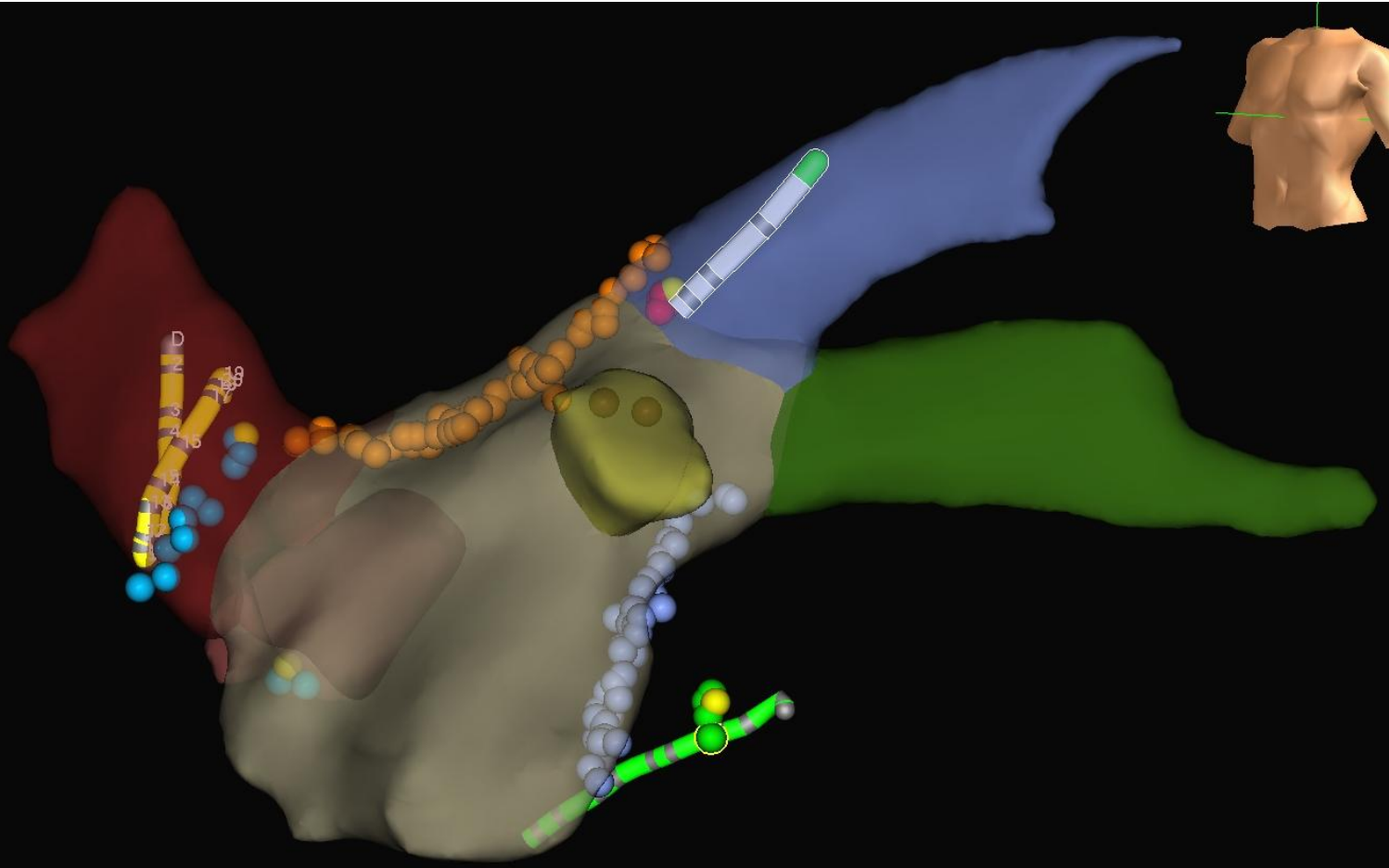
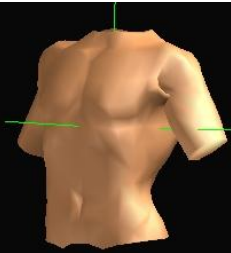


Kazuistika

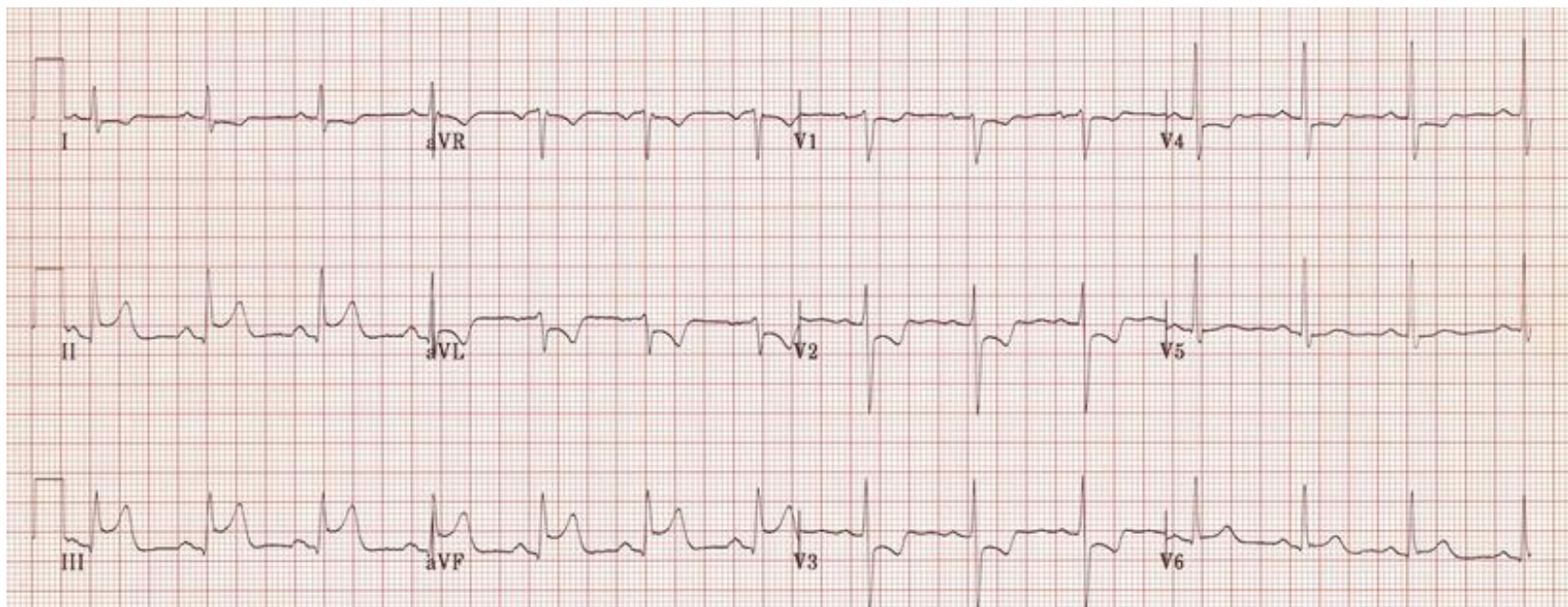
- muž, 68let
- pac. bez KV rizik. faktorů či vážných komorbidit
- dg. FiSi od r.2009 se srdečním selháním, „tachykardická“ KMP s EF LK 25%
- po EKV + AA th postupná normalizace EF LK při sin.r.
- následně selhání AA medikace se symptom. paroxysmy FiSi
- 1. RFA v r. 2012 – izolace plicních žil
- od 5/2015 recidiva FiSi, indikován k **reRFA**

- **před EFV**
 - **Holter ekg 8/2015:** fibrilace síní, fr 48-100/min, pr 68/min, max RR 2.17sec., nevýzn. KES

 - **TEE před RFA 11/2015:** EF LK 55%,bez reg. poruchy, MiR 1-2+, TriR 1+, bez trombů, **dilatace levé síně 56x58mm**



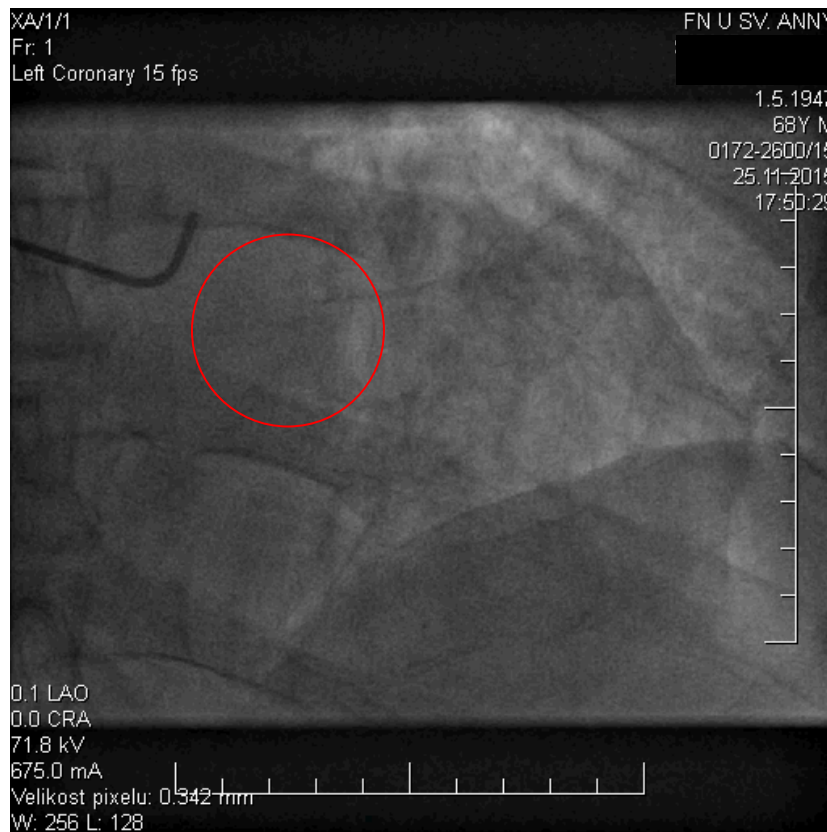
další osud pacienta ...



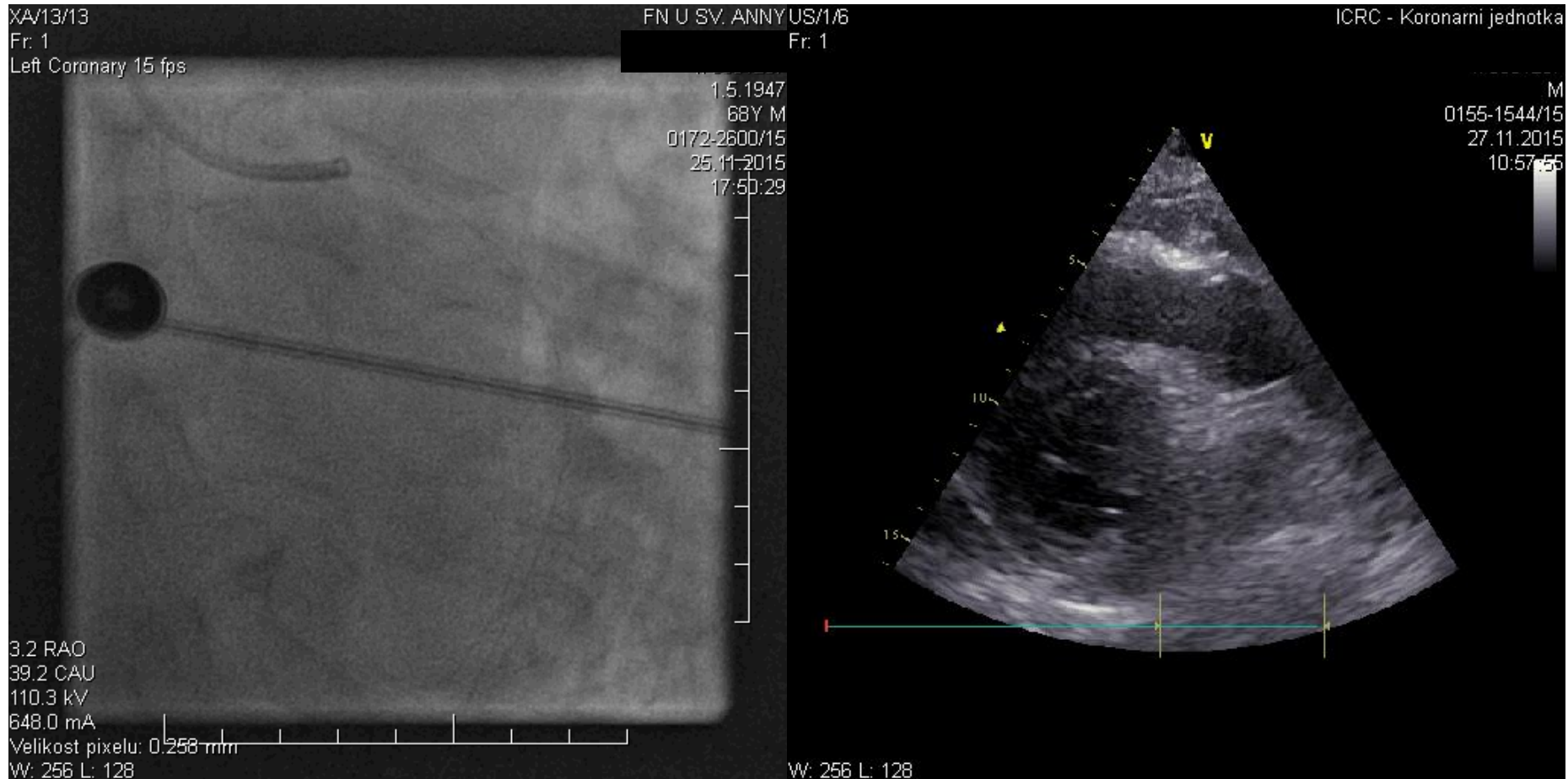
- EKG: ST elevace na dolní stěnou
- podána zvyklá medikace, indikován k dPCI

koronarografie

- **ACS:** kmen bez stenosis, na RIA v bifurkaci s RD plát do 20%. RC uzavřeno v polovině, TIMI 0. RMS s diskretním plátem v odstupu, jinak hladkostěnné
- **ACD:** nonpreponderantní hladkostěnná tepna
- **Ress.:** STEMI IL při uzavěru RC řeš. pPCI s impl. DES.

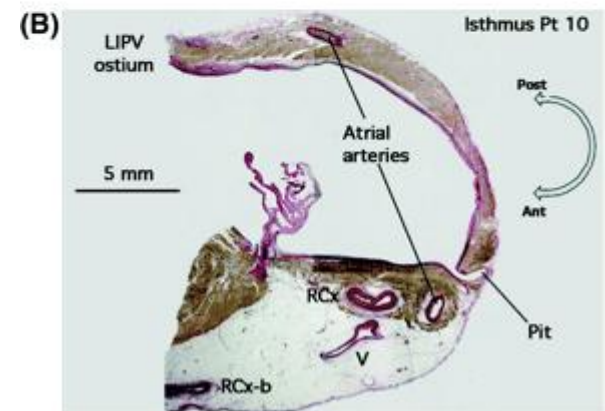
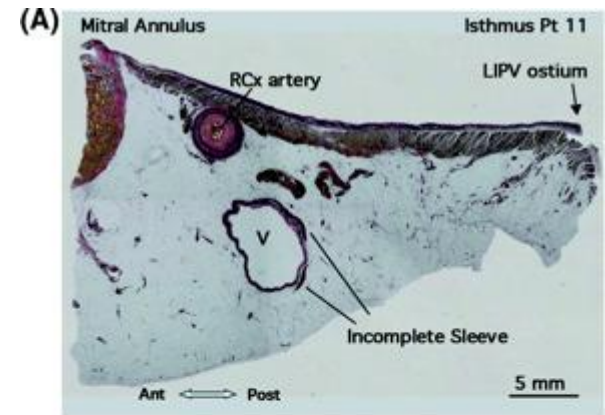
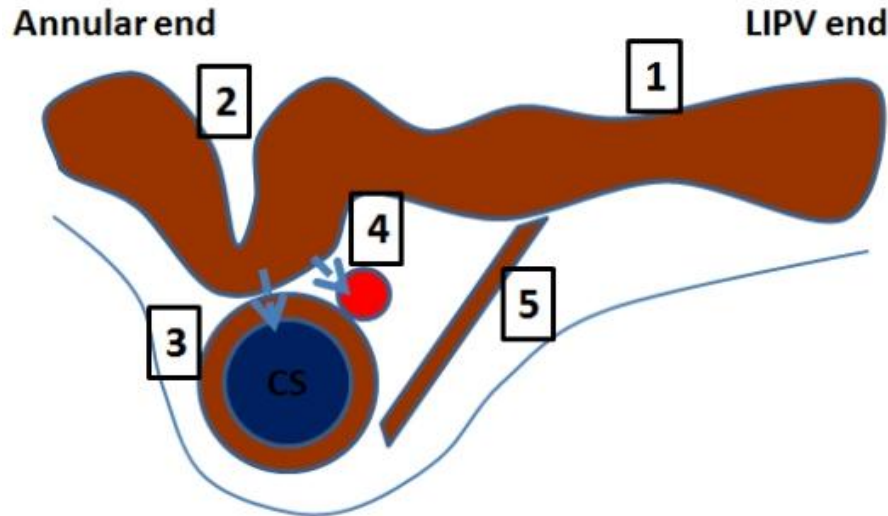


finální efekt PCI + echokg. po výkonu

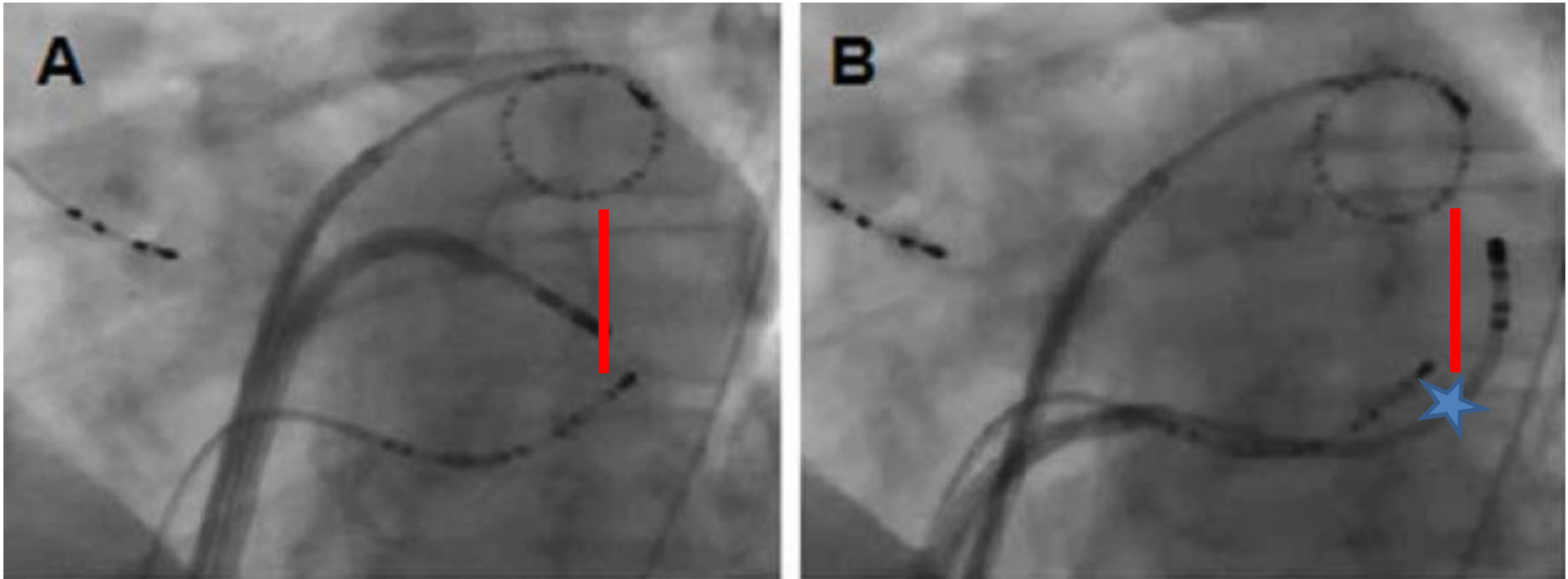


příčina okluze RC?

- intimní vzdálenost RC od CS, v anterolaterálním a laterálním segmentu je méně než 2mm
- ablační linie na MI kříží průběh RC



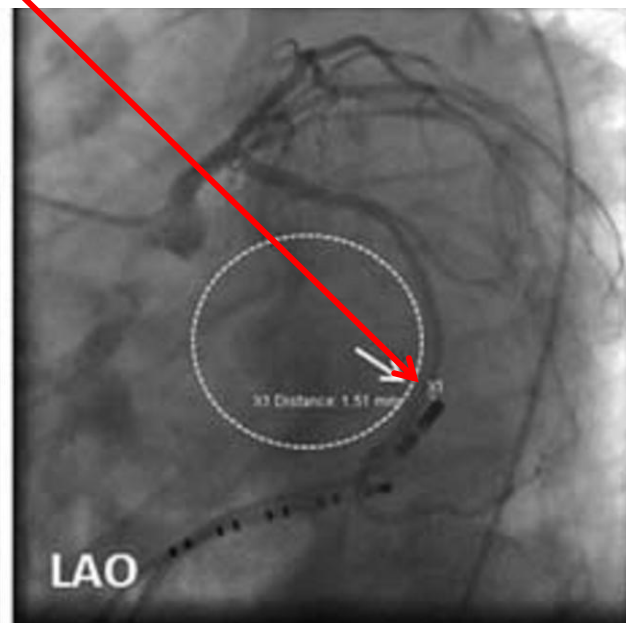
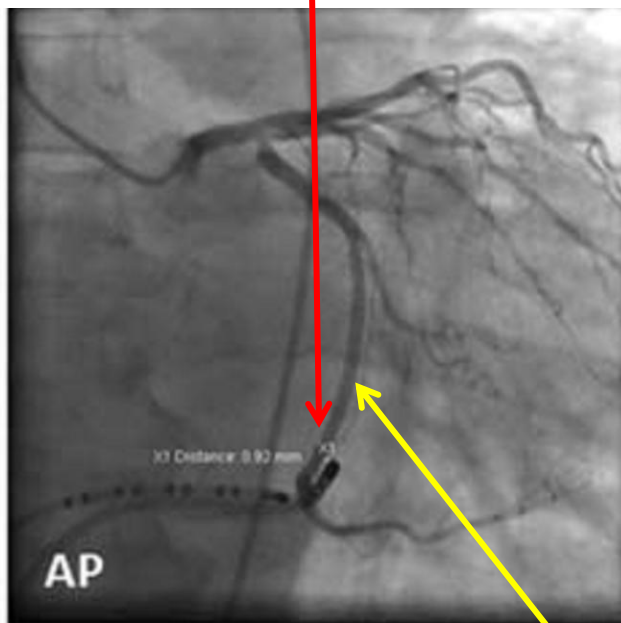
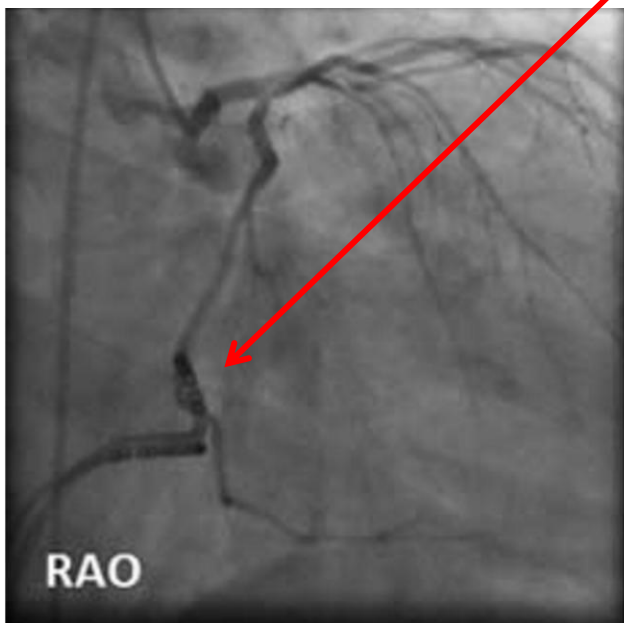
RFA mitrálního isthmu



- A: endokardiální RF linie na MI
- B: epikardiální RFA v místech endokardiální linie na MI

vztah CS a větví ACS

ablační katetr v CS v místě linie na Mi



ramus circumflexus

komplikace v koronárním řečišti

- riziko narůstá při aterosklerose koronárních tepen, možné je i přímé termické poškození nebo reakce na něj (edém, vasospasmus, ruptura plátu?..)
- v literatuře většinou jen jednotlivá kazuistická sdělení či retrospektivní práce
- dle retrospektivních dat je úplná okluze koronární tepny naštěstí vzácná komplikace (0,2 – 1.3%)
- subklinické poškození koronárních tepen je však může být podhodnoceno ..

High incidence of acute sub-clinical circumflex artery 'injury' following mitral isthmus ablation.

Wong KC¹, Lim C, Sadarmin PP, Jones M, Qureshi N, De Bono J, Rajappan K, Bashir Y, Betts TR.

Author information

Abstract

AIMS: Mitral isthmus (MI) ablation is technically challenging, requiring long endocardial ablation times and frequently coronary sinus (CS) ablation. The circumflex artery lies in the epicardium in close proximity to the CS and the mitral annulus and may potentially be injured during radiofrequency ablation.

METHODS AND RESULTS: Fifty-four patients underwent catheter ablation procedures that included MI ablation for treatment of atrial fibrillation. Irrigated ablation catheters were used with the following settings: endocardial surface (max power: 40/50 W at the annular end; max temperature: 48°C); CS (max power: 25/30 W; max temperature: 48°C). Coronary angiography was performed pre- and post-ablation and analysed by two cardiologists with quantitative coronary angiography. Mitral isthmus block was achieved in 89% of patients (60% required CS ablation). Fifteen patients (28%) had angiographic changes following ablation: eight had mid-circumflex narrowing only, one had circumflex and obtuse marginal (OM) artery narrowing, one had OM narrowing only, and five had distal circumflex occlusion/narrowing. Five patients had significant narrowing (50-84%), which resolved with intracoronary glycerine trinitrate. Fourteen (93%) of the patients with circumflex 'injury' had CS ablation and a longer mean CS ablation time (5.0 ± 3.0 vs. 2.6 ± 3.3 min, $P = 0.03$). Patients with distal circumflex occlusion had significantly smaller vessel diameter (1.0 ± 0.1 vs. 2.1 ± 0.2 mm, $P = 0.03$). A shorter distance between the circumflex and the CS was also associated with circumflex 'injury' (3.2 ± 1.9 vs. 5.6 ± 3.2 mm, $P = 0.04$). There were no electrocardiographic or echocardiographic abnormalities and no angina symptoms during follow-up.

CONCLUSION: Acute sub-clinical circumflex 'injury' following MI ablation is not uncommon. Ablation within the CS, proximity of the circumflex and the CS, and a small distal circumflex were risk factors for 'injury'.

naše zkušenosti

- v období 3/2010 - 9/2016 byla 459 pacientů provedena RFA perzistující FiSi technikou izolace plicních žil a lineárních lézí v levé síni
- u 256 z nich při RFA na mitrálním isthmu současně nutnost RFA v distálním CS
- okluze RC se objevila u 1 pacienta (0,39%)

závěr



NEVER GIVE UP



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