Je li akcelerirani nodalni ritam nakon radiofrekventne ablacije sporog puta prediktor neinducibilnosti atrioventrikularne nodalne kružne tahikardije?

Can accelerated nodal rhythm after radiofrequent ablation of the slow pathway predict noninducibility of atrioventricular nodal reentry tachycardia?

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UVOD: Osim anatomske pozicije ablaćijskog katetera i adekvatnih elektrograma, spori nodalni ritam tijekom radiofrekventne (RF) ablacije sporog puta predviđa uspjeh postupka.¹ U nekim slučajevima, kada su svi uvjeti zadovoljeni, aritmija se i dalje može izazvati. Ovdje prikazujemo još jedan mogući marker uspješne ablacije.

METODE: Tijekom 2014. kod ukupno 27 bolesnika (19 žena, 8 muškaraca), prosječne dobi od 45 godina (18-70), elektrofiziološkim ispitivanjem (EP Medsystems) utvrdili smo dijagnozu atrioventrikularne nodalne kružne tahikardije (AVNRT). Zabilježeno je 24 tipične slow-fast (89%) te 3 atipične (2 fast-slow i 1 slow-slow) AVNRT. Ehokardiografski je kod svih bolesnika verificirano strukturno zdravo srce, osim kod jedne bolesnice kod koje je prisutna kardiomiopatija (CMP) s teško narušenom funkcijom LV.

REZULTATI: U 26 bolesnika postignuta je neinducibilnost aritmije (96%) dok kod bolesnice s CMP i slow-slow AVNRT ablacija nije uspjela. Kod 26 (96%) bolesnika tijekom RF-ablacije zapažen je spori nodalni ritam (NR), osim kod jednog gdje je neinducibilnost postignuta i bez navedenog fenomena. Kod 9 bolesnika (33%) je nakon ablacije, a tijekom programirane stimulacije atrijske (PES) zabilježen NR sporiji od tahikardije, a uglavnom brži od NR tijekom ablacije. Prosječna "cycle length" (CL) tahikardije u ovoj skupini iznosi 350 ms (270-450), CL nodalnog ritma tijekom ablacije 670 ms (500-800) dok je prosječna CL ubrzanog NR nakon ablacije (tijekom PES) iznosila 570 ms (470-700). Važno je da NR tijekom ablacije nije specifičan za kasniju neinducibilnost AVNRT, no vrlo je senzitiv. Obrnuto, ubrzani NR nakon ablacije nije toliko senzitiv, no vrlo je specifičan. Naime, u svim slučajevima nakon ovog fenomena AVNRT nije više bila inducibilna.

ZAKLJUČAK: Značaj sporog NR tijekom RF-ablacije AVNRT je jasan, no kasnije javljanje nešto bržeg NR (CL između tahikardije i NR tijekom ablacije) nije još razjašnjeno. Navedeni fenomen je vjerojatno posljedica prijašnjeg zagrijavanja sporog puta, a izgleda da može biti specifičan marker uspješne ablacije.

INTRODUCTION: Besides the good anatomic position of the ablation catheter and the adequate electrograms, slow nodal rhythm during radiofrequent (RF) ablation of slow pathway predicts procedure success.¹ In some cases, when all the criteria are fulfilled, arrhythmia is still inducible. Here, we present one more possible marker of successful ablation.

METHODS: During 2014, in 27 patients (19 F, 8 M), aged 18-70 (mean 45), electrophysiologic testing (EP Medsystems) showed AVNRT. There were 24 typical slow-fast (89%) and 3 atypical (2 fast-slow, 1 slow-slow) types of AVNRT. Echocardiography showed structurally normal hearts in all but 1 patient who had cardiomyopathy (CMP) with severely reduced LV function.

RESULTS: In 26 patients we have achieved noninducibility (96%), only one patient with CMP and slow-slow atrioventricular nodal reentry tachycardia (AVNRT) remained inducible. Also, in 26 patients (96%), during RF ablation, slow nodal rhythm (NR) was detected, and in one patient we achieved noninducibility without NR during ablation. In 9 patients (33%) after ablation, during programmed atrial stimulation (PES) we have detected the accelerated nodal rhythm (NR) which is slower than tachycardia but mostly faster than the NR during ablation. Mean tachycardia cycle length (CL) in this group of patients was 250 ms (270-450), mean CL of NR during ablation was 670 ms (500-800), and mean CL of accelerated NR after ablation (during PES) was 570 ms (470-700). It is important that NR during ablation is not specific for later noninducibility of AVNRT, but it is very sensitive. Conversely, accelerated NR after ablation is not so sensitive for successful ablation, but it seems highly specific. Namely, in all cases showing this phenomena, AVNRT remained not inducible.

CONCLUSIONS: The importance of slow NR during RF ablation is very well understood, but the occurrence of somewhat faster NR after the ablation is not yet clarified. This phenomena is probably the result of slow pathway heating and it seems that it could be a good marker of the successful ablation.

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LITERATURE

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