





Elektrostimulacija srca putem Hisova snopa u bolesnice s kongenitalnim totalnim atrioventrikulskim blokom – nova metoda elektrostimulacije

His bundle pacing in a patient with congenital total atrioventricular block – a new method of pacing

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Uvod: Uobičajeno se ventrikulska elektroda postavlja u apeks desne klijetke. Ovaj pristup ima nekoliko prednosti. Ponaoprije, apeks desne klijetke se lako lokalizira fluoroskopijom i elektroda se u većini slučajeva lako postavlja. Rizik pomaka elektrode je minimalan i dobiju se pouzdani parametri. Ali budući da impuls elektrostimulatora srca započinje od apeksa desne klijetke, nastaje jatrogeni kompletni blok lijeve grane. Posljedica je nastanak interventrikulske i intraventrikulske disinhronije (rana aktivacija desne klijetke i interventrikulskog septuma i kasna aktivacija lateralne stijenke lijeve klijetke. Većina bolesnika navedeno podnosi dosta dobro određeno vrijeme. Kod nekih bolesnika i pogotovo onih koji zahtijevaju stalnu stimulaciju klijetki, mogu nastati dilatacija i remodeliranje lijeve klijetke, pad ejekejske frakcije lijevog klijetke pa čak i kongestivno srčano popuštanje^{1,2}. Stimulacija putem Hisovog snopa, aktivira klijetke putem nativnog His-Purkinje sustava što dovodi do prirodnije elektrostimulacije srca. Budući da aktivacija nastaje putem normalnog provodnog sustava srca, nema ni intraventrikulske ni interventrikulske disinhronije. Zbog toga nema negativnih učinaka na dimenzije i funkciji klijetki³.

Prikaz slučaja: 15-godišnja bolesnica s kongenitalnim totalnim atrioventrikulskim blokom je prikazana radi ugradnje elektrostimulatora srca u svrhu prevencije iznenadne smrti i zbog neadekvatne kronotropne sposobnosti. Uspješno smo ugradili dvokomorni elektrostimulator srca s ventrikulskom elektrodom postavljenom u Hisov snop. Rezultat je uski QRS kompleks.

Zaključak: Tehnička ograničenja i visok prag podražaja na Hisovom snopu su ograničavala elektrostimulaciju putem Hisova snopa u prošlosti, ali zadnjih godina napredak tehnologije je učinio to mogućim kod većine pacijenata.

Introduction: Traditionally, ventricular pacing leads are placed at right ventricular (RV) apex. This approach has several advantages. First of all, RV apex is easily identified under fluoroscopy and most of the time lead can be easily placed. There is minimal risk of lead dislodgement and reliable parameters are obtained. However, since pacing stimulus starts at the RV apex, iatrogenic left bundle branch block pattern is created. This results in interventricular and intraventricular dyssynchrony (early activation of the right ventricle and interventricular septum and delayed activation of the LV lateral wall). Most of the patients tolerate this very well for some time. In some patients and especially those who require constant ventricular pacing, dilatation, and remodeling of the left ventricle, a decline in left ventricular ejection fraction and even congestive heart failure can occur^{1,2}. His bundle pacing activates the ventricles through the native His-Purkinje system, resulting in more physiological pacing. Since activation occurs through the normal conduction system of the heart, there is no intraventricular or interventricular dyssynchrony. Because of that, there are no deleterious effects on ventricular dimensions and functions³.

Case report: 15-year-old female patient with congenital total atrioventricular block has been referred for pacemaker therapy to prevent sudden death and insufficient chronotropy. We have successfully implanted dual chamber pacemaker with the ventricular lead placed at the His bundle. This resulted in a narrow QRS complex.

Conclusion: Technical limitations and higher thresholds at His bundle pacing have restricted use of His pacing in the past but, in recent years development of dedicated tools has made His pacing feasible in most patients.

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