Elektrostimulacija srca putem Hisova snopa – izazov za cijeli tim

His bundle stimulation – a technical challenge for the whole team

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Implantacije elektrostimulatora srca oduvijek su pred kardiološke sestre stavljale kontinuirani izazov učenja i rukovanja novom opremom i elektroničkim uređajima. Rad s privremenim elektrostimulatorima, trajnim jednokomornim, preko dvokomornih pa do multikomornih uređaja i kardioverter defibrilatora ne dozvoljava opuštanje i uljuljanost u dosadu, već od svih očekuju predan rad i napredak. His stimulacija kao nešto novija metoda liječenja elektrostimulacijom uz sve dosadašnje tehničke aspekte uobičajene implantacije elektrostimulatora pruža nam i neke nove, specifične izazove.[1]

Kako se radi o implantaciji elektrode u vrlo uskoj regiji interesa u prvom je redu izrazito važno poznavanje anatomije i fiziologije provodnog sustava srca. Također je poznavanje signala His-ovog potencijala izrazito bitno. A kako bi uspješno implantirali takav sustav potrebni su i specifični materijali za dopremu adekvatne (posebne) stimulacijske elektrode na regiju His-a. Zbog lokacije His-ovog snopa i njegovog sudjelovanja u provodnom sustavu električnog impulsa potrebno je biti iznimno točan kako bi prevenirali razvoj Exit bloka, bilo zbog dislokacije elektrode ili nedovoljne jakosti izlazne struje. Za provođenje uspješnog postupka uz operatera, cijeli tim mora adekvatno pripremiti salu, bolesnika, uređaje (programator, EKG, stanicu za elektrofiziologiju, materijale). Neophodni materijali za ove postupke su adekvatne His elektrode bez lumena, preformirana His uvodnica za lakše postavljanje elektrode u regiju interesa, modifikacija elektrofiziološkog sustava za simultano snimanje unipolarnih, bipolarnih signala His-a te mjerenje parametara stimulacije.

Cilj nam je prikazati izazove u implantaciji His sustava stimulacije srca te kako smo razvili *setup* za implantaciju tog specifičnog sustava.

Pacemaker implants have always posed a continuing challenge to cardiac nurses in learning and handling new equipment and electronic devices. Working with temporary pacemakers, permanent single-chamber, through two-chamber then to multi-chamber devices and implantable cardioverter-defibrillators does not allow us to relax, but dedicated work and progress from all of us. His stimulation as a somewhat newer method of electrostimulation treatment, in addition to all the current technical aspects of the usual implantation of pacemakers, also provides us with some new, specific challenges.[1]

As this is an electrode implantation in a very narrow region of interest, knowledge of the anatomy and physiology of the conduction system of the heart is at most importance. Knowledge of the signal of His potential is also extremely important. And in order to successfully implant such a system, we also need specific materials for the delivery of an adequate (special) electrode to the His region. Due to the location of the His and its participation in the electrical impulse conduction system, it is necessary to be extremely accurate in order to prevent the development of the Exit block, either due to electrode dislocation or insufficient output current. In order to carry out a successful procedure with the operator, the whole team must adequately prepare the room, patient, devices (programmer, ECG, electrophysiology station, materials).

Necessary materials in these procedures are adequate His electrodes without lumens, preformed His introducer for easier placement of the electrode in the region of interest, modification of the electrophysiology system for simultaneous recording of unipolar, bipolar His signals and measurement of stimulation parameters.

Our goal is to show the challenges in the implantation of the His cardiac pacing system, and how we have developed procedure for the implantation of that specific system.

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LITERATURE

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