Masna infiltracija desnog srca – histopatološka humana analiza

Fatty infiltration of the right heart – histopathological human analysis

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CILJ: Istraživanja tijekom proteklog desetljeća dokazala su postojanje depozita masnih stanica (MS) u stijenci desne klijetke (DK) u „normalnom“ srcu, kao dio procesa starenja, u ožljuku nakon infarkta miokarda te u različitim patofiziološkim stanjima kao što je aritmogena displazija desne klijetke. U navedenom području brojna su neodgovorena znanstvena i klinička pitanja s obzirom na limitirajuće mogućnosti slikovnih metoda u svakodnevnoj kliničkoj praksi. Cilj istraživanja je utvrditi prisutnost/lokalizaciju epikardijalnog masnog tkiva i MS u slobodnoj stijenci desne preklijetke (DP) i DK u humano postmortalnoj histopatološkoj analizi.

METODE: Pilot istraživanje uključilo je patohistološke uzorke desnog srca oba spola (6 muškaraca, 3 žene) s obdukcijских analiza, u dobi od 25-81 godinu. Uzeti su uzorci iz DP te slobodne stijenke DK: bazalni segment ispod trikuspidalnog zalistka, srednji i apikalni segment. Histopatološki preparati pripremljeni su standardnim protokolom i bojani hemalaun-eozinom. Istraživanje je odobreno od Etičkog povjerenstva Kliničkog bolničkog centra Osijek.

REZULTATI: Preliminarni rezultati ukazuju da su MS prisutne u vanjskoj trećini miokarda DP već u ranoj odrasloj dobi kod osoba koje su umrle od ne-kardiogene smrti, dok su MS brojnije u apikalnom dijelu DK. Kod osoba starije životne dobi uočene su linerane nakupine MS u dva do tri reda unutar stijenke DP, a infiltriraju apikalni segment DK.

ZAKLJUČAK: Masna infiltracija miokarda predstavlja kontinuirani proces koji počinje vjerojatno u ranoj životnoj dobi, potaknuta do sada još nepoznatim trigger faktorima i patofiziološkim procesima te napreduje sa životnom dobi mijenjajući strukturu i funkciju miokarda.

PURPOSE: Research over the last decade with imaging methods showed that right ventricular (RV) intramyocardial fat (MF) deposition was found in „normal“ heart, as age-related process, after myocardial infarction and in pathophysiological condition as arrhythmogenic right ventricular dysplasia. There are numbers of unanswered scientific and clinical questions in this field because of imaging limitations in every day clinical practice. The purpose of this study is to find out presence/location of epicardial adipose tissue and MF in right atrium (RA) and RV free wall in human postmortal histopathologic analysis.

METHODS: This pilot study included histopathologic samples of the right heart of both sexes (6 males, 3 female) from the autopsy, aged 25-81 years. Samples were taken from the RA and RV free wall: basal portion below the tricuspid valve, middle and apical segment. The histopathological samples were prepared by standard protocol and stained with hematoxylin and eosin. The results are interpreted by experienced histologist and pathologist. The study was approved by Ethical Committees of Clinical Hospital Centre Osijek.

RESULTS: Preliminary results show that even in early adulthood in humans who have died from non-cardiac death, there are individual fat cells in the outer third of the myocardium in the RA sample and in the apical part of RV free wall. In elderly persons sample we found linear clusters of two to three layers of fat cells inside of RA wall, while the apical RV myocardium is infiltrate with adipose tissue.

CONCLUSION: MF infiltration is a continuous process that begins probably in early lifetime induced by unknown trigger factor and pathophysiologic processes, progress with ageing with consequent structural and functional changes.

LITERATURE

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