Miokardijalni bridging kao uzrok kardijalnih tegoba – genetika?

Myocardial bridging as a cause of cardiac ailments – genetics?

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Miokardijalni bridging «intramiokardijalni tijek koronarnih arterija» je anatomska anomalija s kojom se sve više susrećemo koristeći koronarografiju kompjutoriziranom tomografijom (CCTA). Kliničko značenje miokardijalnog bridginga (MB) i dalje je nedovoljno istraženo, tim više što postoje opisi koji taj fenomen povezuju s akutnim koronarnim sindromom, raznim poremećajima ritma i iznenadnom srčanom smrti. Pojavom invazivne koronarografije na kojoj se vidi tzv. «milking effect» najčešće srednjeg segmenta lijeve prednje silazne arterije (LAD), postavljena je *in vivo* dijagnoza, međutim ista je bila u velikoj diskrepanciji s *post mortem* dijagnozom. Prema nekim podacima prevalencija MB-a na CCTA je i do 50 %, slična kao i na obdukcijama, dok se na invazivnoj koronarografiji ovaj fenomen vidi u svega 5-10% slučajeva.

Prikazujemo slučaj obitelji gdje se MB javio kod 56-godišnjeg oca i 26-godišnjeg sina. Oboje su imali recidivirajuću neobjašnjivu torakalnu bol, tj. palpitacije. Tako je sin osjetio oštru bol u desnom prsištu koja se proširila u sredoprsje te desno rame i desnu stranu vrata te parestezije u ekstremitetima tijekom tjelesnog napora. U obiteljskoj anamnezi s majčine strane je bilo srčanih bolesnika. Pacijent je bio urednog općeg statusa, kardiopulmonalno kompenziran s arterijskom tlakom od 140/80 mmHg. Učinjeni 12-kanalni elektrokardiogram bio je uredan. Vrijednosti učinjenih laboratorijskih pretraga, kao i Rtg snimke pluća bile su uredne. Pacijent je obrađivan kardiološki i neurološki s normalnim nalazima. Bolovi u prsnom košu s normalnim nalazom ehokardiografije indicirali su i CCTA kod oca, a posljedično i kod sina. Kod oba je nađen plići bridging srednje i distalne LAD. Dodatno su kod oca registrirani i nesignifikantni plakovi LAD (**slika 1, 2, 3, 4 i 5**). Oba pacijenta su stabilni uz primjenu beta-blokatora. Vjerujemo da je MB bio uzrok tegoba u obojice.

Na temelju dostupnih podataka[1-3] zaključujemo da kod tegoba u području prekordija koje inače nisu objašnjive, treba misliti i na MB. Genetska podloga za miokardijalni bridging kod određenih obitelji ostaje predmet budućih istraživanja.

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Myocardial bridging (MB) is an anatomical anomaly which is increasingly detected using coronary CT angiography (CCTA). The clinical significance of MB has been still insufficiently explored, moreover there are descriptions of this phenomenon in association with acute coronary syndrome, a variety of rhythm disorders and sudden deaths. After the breakthrough of the invasive coronary angiography (ICA), at which the so-called "milking"-effect may be observed, most commonly in the middle segment of the left anterior descending artery (LAD), in vivo diagnosis could be established. However, the ICA diagnosis showed a great discrepancy compared to post mortem diagnosis in this matter. According to some data, MB-prevalence is up to 50% (CCTA), as well as on autopsy studies, while at ICA this phenomenon has been observed in merely 5-10% of all cases.

The presented case refers to a family, with both a father (56) and a son (26) being diagnosed with MB. They both had an unexplained recurrent thoracic pain i.e. palpitations. Thus, the son felt a sharp pain in the right chest whereby the pain spread in the mediastinum, across the right shoulder and the right side of the neck. In addition, he complained of paraesthesia in his extremities during physical activity. As regards his family medical history, on his mother's side there were some cases of heart diseases. Patient's general health status was normal. There were no signs of heart failure with a blood pressure of 140/80 mmHg. The standardized ECG in the emergency room was within normal ranges. Lab tests were within normal ranges, as well as chest X-ray. Both neurological and multiple cardiological examinations and findings were normal. The pain in the chest with a normal echocardiography led also to CCTA of the father and subsequently of the son. Shallow MB of the middle and distal LAD has been found in both patients. Additionally, insignificant plaques have been found in the LAD of the father (**Figures 1, 2, 3, 4 and 5**). Both patients are stable under beta-blockers. In summary, we regard these symptoms to be associated with MB.

Owing to the collected data[1-3], we may conclude that MB should also be considered in association with cardiac symptoms that otherwise cannot be explained. The genetic basis of MB in certain families remains a topic of future research.

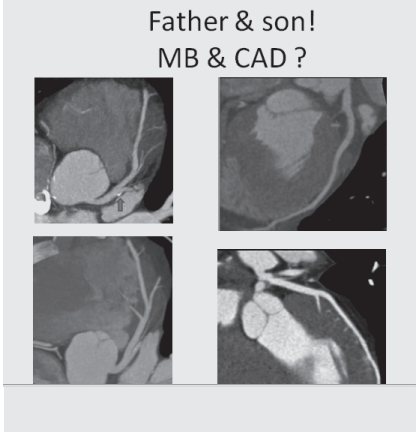

FIGURE 1. Comparison of the myocardial bridging respectively atherosclerotic lesions of father and son.

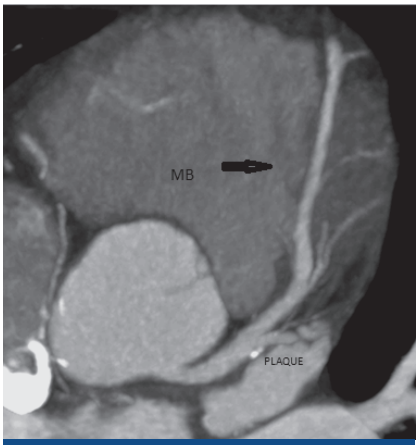

FIGURE 2. Calcified plaques in the proximal segment and myocardial bridging of the middle and distal part of the left anterior descending artery (father).

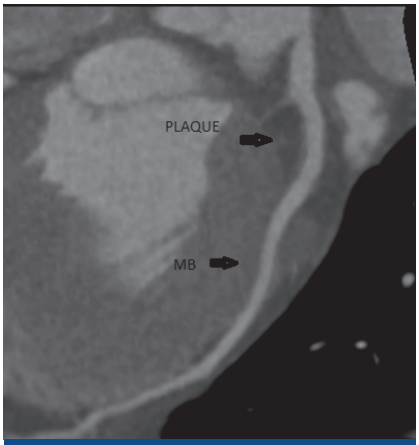

FIGURE 3. Non-calcified plaques in the proximal segment and myocardial bridging of the middle and distal part of the left anterior descending artery (father).

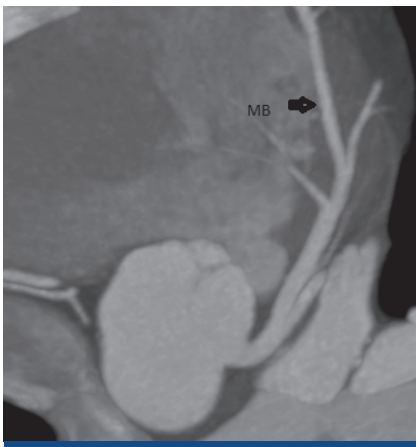

FIGURE 4. Myocardial bridging of the middle and distal part of the left anterior descending artery without atherosclerosis (son).

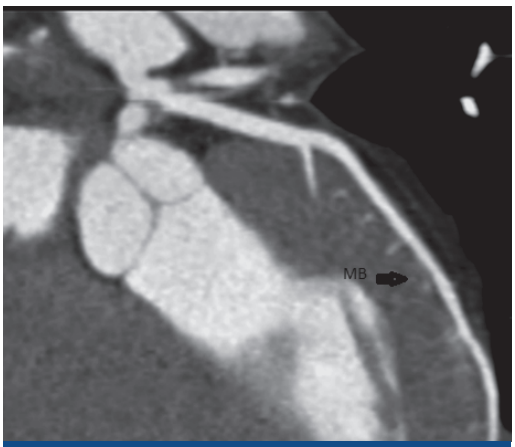

FIGURE 5. Myocardial bridging of the middle and distal part of the left anterior descending artery without atherosclerosis (son).

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