OCT Assessment Of The Differences Between Native Coronary Atherosclerosis And Cardiac Allograft Vasculopathy

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Background: Cardiac allograft vasculopathy (CAV) is an accelerated diffuse fibro-proliferative process that affects the distal coronary segments and side branches in patients after heart transplant (HTx); conversely traditional native atherosclerosis typically tends to involve more the proximal coronary artery segments.

Methods: At the time of routine surveillance coronary angiography, 11 HTx recipients with a history of high grade cellular rejection (HGR: ISHLT 0 or 1A) underwent optical coherence tomography (OCT) imaging of the left anterior descending (LAD) artery and were compared to 22 non-HTx pts with native coronary heart disease. The LAD was divided into proximal, mid, and distal segments; and the minimum lumen area site was analyzed for each segment.

Results: Differences in culprit lesion plaque stability between males and females: A VH-IIVUS Analysis from the ADAPT-DES Study

Differences in Culprit Lesion Plaque Stability between Males and Females: A VH-IIVUS Analysis from the ADAPT-DES Study

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Background: ADAPT-DES study was a prospective multicenter, registry of 8,583 consecutive stable and unstable pts undergoing percutaneous coronary intervention

Results: Due to limitations to OCT penetration, external elastic lamina (EEL) and internal elastic lamina (IEL) were visible in only distal segments in non-HTx pts. In distal LAD segments, pts with HTx HGR had smaller EEL and IEL areas, but sidebranches of HGT pts had smaller diameters and more intimal thickening, especially in small sidebranches (diameter < 1mm).

Conclusions: Using OCT imaging showed that coronary stenotic lesions in patients after HTxs have different morphological characteristics when compared to native atherosclerosis. Pts with HGR had the smallest distal lumen areas. The small lumen dimensions of CAV are the result of negative remodeling or lack of adaptive positive remodeling, and not increased intimal thickening.

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Methods: At the time of routine surveillance coronary angiography, 11 HTx recipients with a history of high grade cellular rejection (HGR: ISHLT 3A) and 23 HTx pts with a history of low grade rejection (LGR: ISHLT 0 or 1A) underwent optical coherence tomography (OCT) imaging of the left anterior descending (LAD) artery and were compared to 22 non-HTx pts with native coronary heart disease. The LAD was divided into proximal, mid, and distal segments; and the minimum lumen area site was analyzed for each segment.

Results: Due to limitations to OCT penetration, external elastic lamina (EEL) and internal elastic lamina (IEL) were visible in only distal segments in non-HTx pts. In distal LAD segments, pts with HTx HGR had smaller EEL and IEL areas, but sidebranches of HGT pts had smaller diameters and more intimal thickening, especially in small sidebranches (diameter < 1mm).

Conclusions: Using OCT imaging showed that coronary stenotic lesions in patients after HTxs have different morphological characteristics when compared to native atherosclerosis. Pts with HGR had the smallest distal lumen areas. The small lumen dimensions of CAV are the result of negative remodeling or lack of adaptive positive remodeling, and not increased intimal thickening.