Putting out the Fire: Stabilization of Aggressive Cardiac Allograft Vasculopathy

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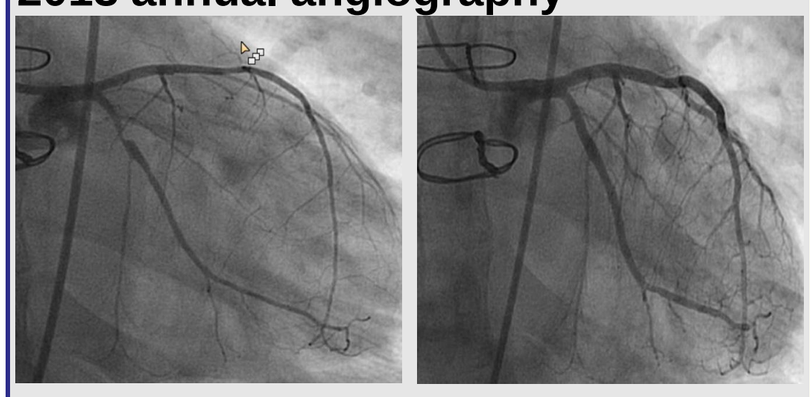
Introduction

- Cardiac allograft vasculopathy (CAV) is a pan-arterial vasculopathy that impacts nearly 50% of patients within ten years after heart transplantation
- Two recent post-mortem studies demonstrated clusters of inflammatory cells surrounding the coronary arteries
- Here we describe a case of aggressive CAV with in vivo demonstration of active coronary inflammation, and its treatment course

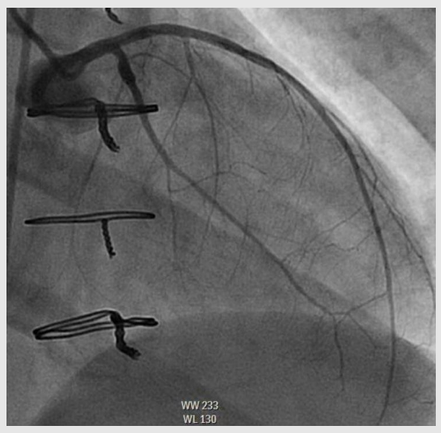
Case Report

- 36 year old gentleman with a familial genetic cardiomyopathy (TTN mutation) underwent heart transplantation in 2008 at age 27
- Post-transplant course was complicated by CMV viremia in 2009 requiring valgancyclovir treatment.
- He was free from rejection (all biopsies ISHLT 0 or 1R/1A, C4d-), though has had frequent Quilty lesions. He had not made donor specific or non-HLA antibodies
- Baseline immunosuppression was tacrolimus and mycophenolate mofetil (MMF)

2013 annual angiography

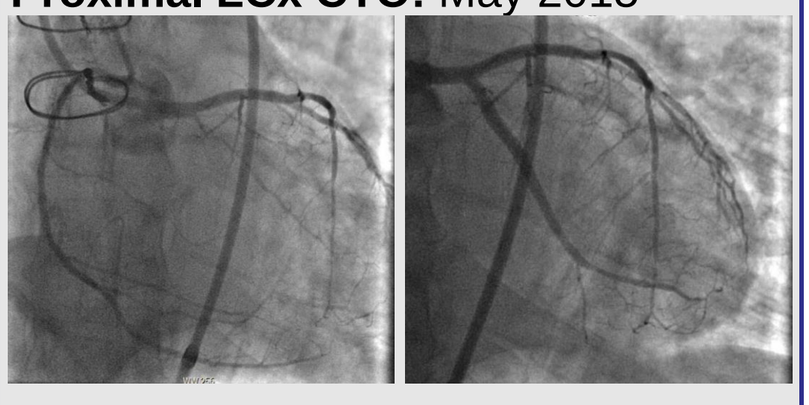


- In 2014 he developed progressive luminal disease CAV1



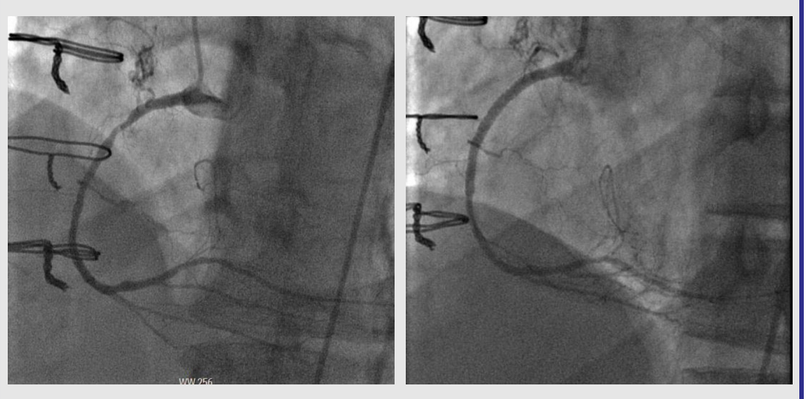
- Between April 2015 and May 2016 he developed CAV 3 necessitating four DES

Proximal LCx CTO: May 2015

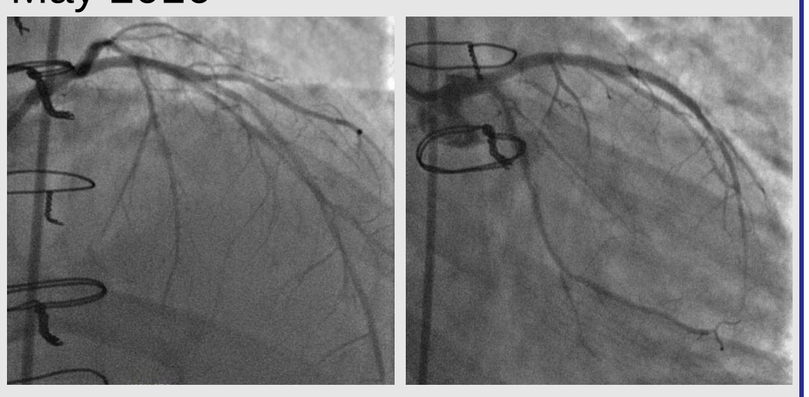


- Everolimus replaced MMF and prednisone was restarted

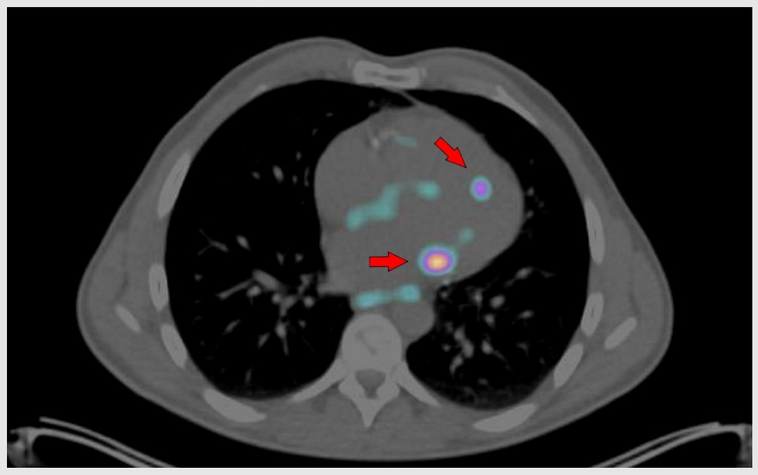
Proximal RCA: March 2016



Mid LAD and Proximal LCx ISR: May 2016

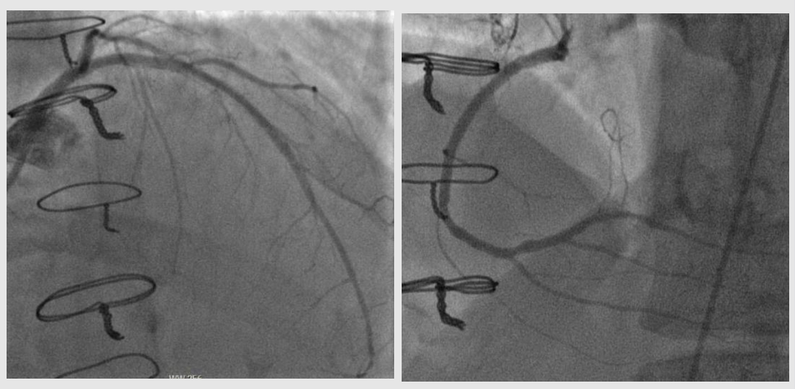


- A July 2016 FDG-PET demonstrated active inflammation surrounding the mLAD and pLCx

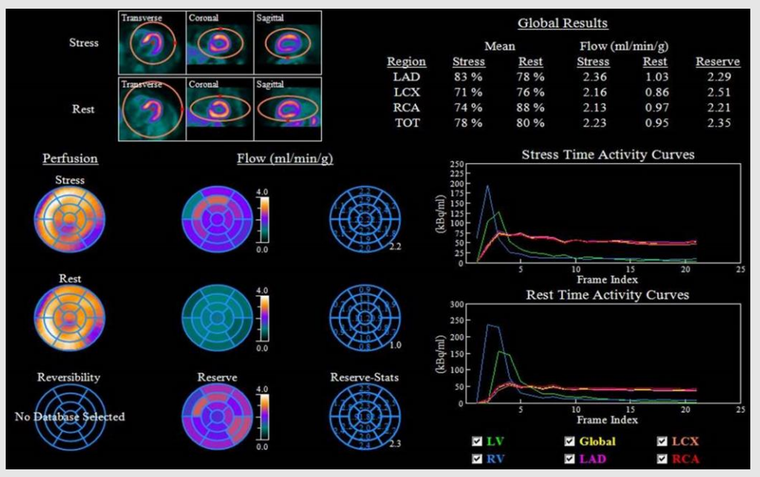


- Immunosuppression was again intensified: everolimus (target 3-5 ng/mL→6) and tacrolimus goal (8-10 ng/mL) with Immuknow decreasing 350 → 167 ng/mL

November 2016



PET with normal perfusion and coronary flow reserve: July 2017



Summary

- Here we describe a case of aggressive CAV with in vivo imaging of active coronary inflammation that stabilized with an intensification of immunosuppression, including the addition of everolimus eight years post-transplant
- We also demonstrate the use of PET to demonstrate active inflammation and then to evaluate for flow limiting lesions.

We do not discuss off label use and/or investigational use of drugs or devices. None of the authors have relevant financial relationships related to this presentation