**NATIVE VALVE EMPHYSEMATOUS ENTEROCOCCAL ENDOCARDITIS**

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*Background*: Infective endocarditis (IE) caused by gas forming organisms is extremely rare. Emphysematous endocarditis from Finegoldia magna, Citrobacter, Clostridium and gas producing strains of E coli has been reported but enteroccocal emphysematous IE has never been described. We present infective endocarditis of a native (non myxomatous) mitral valve with gas forming enterococcus fecalis.

*Case report:* 82 -year old man with hypertension, obesity, obstructive sleep apnea and chronic kidney disease presents with fever and rapidly progressing shortness of breath. He was found to be in atrial fibrillation (AF) with rapid ventricular rates. Two-dimensional transthoracic echocardiography demonstrated severe mitral regurgitation (MR). Subsequent two and three dimensional transesophageal echocardiogram revealed a large highly mobile vegetation (9.6 x 6.9mm) on the atrial surface of the anterior mitral leaflet with aneurysmal destruction of the lateral scallop leading to severe MR (figures 1A, 1B and 1C). Given the severity of MR, congestive heart failure and ensuing atrial fibrillation the patient underwent mitral valve replacement with a bioprosthetic valve. The resected valvular specimen showed gram-positive cocci (figure 1D) aggregated at the endocardial surface surrounded by macrophages and Langhans giant cells along with interstitial gas consistent with pneumotosis (figure 1E and 1F). Interestingly his blood cultures remained negative. Genomic sequencing revealed the organism to be enterococcus fecalis. Enterococcus is an anaerobic gram-positive cocci that can infrequently produce gas using a heme dependent catalase. This case is unique as this is the first reported case of culture negative emphysematous enteroccocal endocarditis.

*Conclusion:* Emphysematous IE is a rare but serious infection that can be caused by Enterococcus fecalis. It should be included in the differential diagnosis of valvular vegetations in patients with a rapidly progressing clinical course especially if immunocompromised.

