Abstract
A 49 years old male on hemodialysis through a right arteriovenous fistula was admitted to the hospital with a 3 – 4 weeks history of fatigue and weight loss. Blood culture grew gram positive bacilli later identified as Corynebacterium jeikeium. An echocardiogram revealed 1.3 cm x 1.6 cm vegetation on the aortic valve, an aortic root ring abscess and he developed a new second degree atrioventricular block. He underwent a composite graft replacement of the aortic valve, aortic root and ascending aorta and was finally discharged on a 6 weeks course of intravenous vancomycin.

ABBREVIATIONS
AV: Arteriovenous

INTRODUCTION
Corynebacteria are gram positive, non-sporing forming, non-motile bacilli that are frequently considered contaminants when they grow in blood culture, as they are found in mucosa and skin of humans. They have been reported as causative agents of infective endocarditis with very high mortality rates. [1] Cases have also been described in hemodialysis patients with catheters and grafts, with high morbidity and mortality [2-5]. We report one such case of Corynebacterium jeikeium endocarditis in a hemodialysis patient with an arteriovenous fistula (AV fistula), complicated by an aortic root ring abscess who required aortic root replacement.

CASE PRESENTATION
A 49 years old male with a history of diabetes mellitus, hypertension, coronary artery disease, coronary artery bypass graft (CABG) procedure in 2010, End Stage Renal Disease (ESRD) on regular in-center hemodialysis through right upper extremity fistula since 2011 was sent to the Emergency Room because of hyperglycemia and generalized weakness and fatigue. He did not have any fever or chills. Six months ago he was treated with a two weeks course of intravenous vancomycin for a furuncle close to his fistula that grew coagulase negative staphylococci, which resulted in complete resolution.

On the second day of admission, he had a blood culture drawn that grew gram positive bacilli, and due to the presence of a murmur, he had a transthoracic echocardiogram done which showed 1.3 cm x 1.6 cm vegetation on the non-coronary cusp of the aortic valve (Figure 1). This was subsequently confirmed by means of a trans-esophageal echocardiogram which not only revealed the vegetation but also revealed an aortic root ring abscess with a new second degree atrioventricular block. His fistula was normal on examination during this admission.

Blood cultures grew Corynebacterium jeikeium and the patient was started on intravenous vancomycin as the organism was sensitive to this antibiotic. Considering the large vegetation with a ring abscess and second degree AV block, the patient required surgery for valve replacement. He underwent a composite graft replacement of the aortic valve, aortic root and ascending aorta (modified Bentall procedure). The aortic valve tissue culture grew Corynebacterium jeikeium as well, and histopathology of the tissue revealed numerous gram positive bacilli, consistent with Corynebacterium. He continued to get dialysis, initially as
continuous veno-venous hemofiltration (CVVH) while he was in the Intensive Care Unit (ICU), followed by intermittent thrice weekly hemodialysis through the right upper extremity fistula once out of the ICU, in the post-operative period. He did well post operatively and was discharged on post-operative day twelve on a six weeks course of intravenous vancomycin. He has been doing well on out-patient intermittent hemodialysis since then and surveillance blood cultures have been negative.

DISCUSSION

Very few cases of endocarditis due to Corynebacterium species have been reported in dialysis patients [2-5]. Most of these patients were being dialyzed through a catheter. Martinez-Vea et al reported a patient who was being dialyzed through a fistula but this patient had a history of splenectomy due to spontaneous splenic rupture and had also received a renal transplant in the past that had failed [4]. Moffie et al reported a case of Corynebacterium JK endocarditis in a patient on hemodialysis that had a Gore-Tex shunt [5]. This makes our patient a very rare case that received dialysis through an AV fistula and developed Corynebacterium endocarditis.

Our patient had diabetes mellitus but had not had a splenectomy and was negative for HIV, hepatitis B and C. Positive blood cultures with Corynebacterium species should prompt an evaluation for endocarditis, starting with a transthoracic echocardiogram, and if the suspicion is still high, a transesophageal echocardiogram should be done. This is because of high mortality associated with endocarditis caused by this organism. [1,6] Endocarditis due to Corynebacterium jeikeium is serious. It is fatal in 41% of the patients and 62% of the patients ended up requiring valve replacement in one review of literature. [6] Hemodialysis was identified as an associated comorbidity factor in 25% of cases in this review of Corynebacterium jeikeium endocarditis. In the same review gentamicin and vancomycin were the two most commonly used antibiotics. The Corynebacterium jeikeium in our case was susceptible only to vancomycin and imipenem and decision was taken to treat the patient with vancomycin for 6 weeks after valve replacement. In conclusion, isolation of Corynebacterium species in hemodialysis patients should not be written off as contaminants. Subtle symptoms like loss of appetite and weight loss should prompt a thorough evaluation, including an echocardiogram when uncommon organisms are isolated.

REFERENCES