Pacemaker Lead Endocarditis

Paramdeep Singh¹, Rohit Tandon², Shailender Kumbkarni³, Sarju Ralhan⁴, Bishav Mohan⁵, GS Wander⁶

Abstract
A case of permanent pacemaker lead endocarditis staphylococcal aureus related is described and management is discussed.

Introduction
There has been rapid progress in cardiac devices implantation. Their local complications are well recognized but life threatening complications like endocarditis are usually under diagnosed in routine clinical practice and various trials. Here we discuss a case of 63 years old male who presented with staphylococcal aureus related pacemaker lead endocarditis.

Case Report
63 years old male presented with moderate grade, intermittent fever for past 2 months. Past history- Sick Sinus Syndrome in 1992 and dual chamber Pacemaker implanted. In 2003 for EOL generator and bipolar lead replacement was done but previous unipolar lead could not be removed percutaneously so was left in place and new lead implanted.

On examination, patient was febrile, hemodynamically stable, with mild pallor. Cardiovascular examination showed normal heart sounds with no murmur/ S3.

Investigations
Showed Leucocytosis, mild anemia with raised ESR. Electro cardiogram showed normal pacing. Chest X-ray showed normal lung parenchyma with two pacing leads in normal position. TTE showed mildly dilated right heart chambers with multilobed mobile vegetation on tricuspid leaflets, mild PAH also noted. TEE confirmed large mass, consistent with vegetation attached to ATL of Tricuspid Valve and Right Atrial pacing lead, moderate Tricuspid Regurgitation with RVSP 45 mmHg Figures 1,2,3. Subsequently two blood cultures grew Staph Aureus (MRSA).
Patient was started on vancomycin and aminoglycosides but after 5 days he developed mild renal insufficiency so shifted to teicoplanin.

Patient did not improve even after 10 days of antibiotic treatment so it was decided to remove the infected pacing leads. Fluoroscopy guided percutaneous removal was attempted but failed. So patient was taken up for removal by surgical exploration.

The whole pacing system was removed during the surgery and patient was kept on antibiotics for another 6 weeks. Patient was discharged with implantation of new pacing system after complete resolution of septicemia.

**Discussion**

0.4 to 1.1% of patients having Permanent Pacemaker Implantation suffer serious infections leading to endocarditis.1,2,3 This complication carries high risk of mortality if left untreated. Most frequent causative organisms are staph. aureus and staph. epidermitidis.

Sole medical therapy is not advocated as it usually results in recurrence of septicemic symptoms and sequel. Percutaneous lead extraction can also be dangerous as it carries risk of dislodgement of vegetation to pulmonary circulation.4,5

Surgical extraction of lead under direct vision appears to be safer way as mechanical injury to valve and adjacent structures and embolization is avoided.

We advocate prompt removal of whole pacemaker system as compared to conservative antibiotic treatment.6,7,8 Therefore this case highlights the emerging menace of Cardiac Device related endocarditis and need for formulation of standard guidelines for managing such cases.

**Abbreviations**

EOL-End of Life, TTE- Trans Thoracic Echocardiography, TEE- Trans Esophageal Echocardiography

**References**