J Clin Exp Cardiolog 2016, 7:10(Suppl)
http://dx.doi.org/10.4172/2155-9880.C1.054

Role of positron emission tomography and magnetic resonance imaging in cardiac sarcoidosis: Retrospective analysis

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Retrospective analysis was performed on patients who presented to Advance Heart Failure and Cardiac Transplant Unit at The Prince Charles Hospital during 2015-16. 68 patients were identified with a diagnosis of cardiac sarcoidosis. 57 patients met the Japanese Ministry Guidelines. Out of the 50 patients who underwent ^{18}FDG Positron Emission Tomography (^{18}FDG-PET), 23 patients had evidence of increased FDG uptake consistent with active cardiac sarcoidosis (sensitivity 53%, specificity-100%). 13 patients had follow up ^{18}FDG-PET imaging, and all showed improvement in scan appearance post treatment with corticosteroids. 15 patients had a ^{18}FDG-PET scan, were treated with steroids, and had follow up echocardiography. There was a non-significant improvement in left ventricular ejection fraction (LVEF) following treatment with corticosteroids (42.6 to 44.4%, p 0.24). Presence of atrioventricular conduction delay (p-0.01, odds ratio (OR) 6.33, 95% CI 1.4 to 27.7) and LVEF <50% (p-0.01, OR 6.06 95% CI 1.4 to 24) are found to be strong predictors of abnormal FDG uptake on PET scan. Of the study population, 48 patients had cardiac magnetic resonance imaging (CMRI) and 31 showed evidence of late gadolinium enhancement (LGE); (Sensitivity-67%, Specificity-50%). Our study reinforces the promising potential of ^{18}FDG-PET in diagnosing and managing patients with cardiac sarcoidosis. Corticosteroids improved ^{18}FDG-PET appearance and it coincided with improvement in LVEF. Larger, more rigorous studies are warranted to assess the role of ^{18}FDG-PET in guiding the treatment of cardiac sarcoidosis.

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Permanent pacing in a premature infant with isolated congenital complete atrioventricular block: A case report

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Congenital complete atrioventricular block (CCAVB) is a rare and potentially lethal disease with an estimated incidence of 1 in 15,000 to 20,000 live born infants. Most of the patients with CCAVB have structurally normal hearts, referred to as an 'isolated' CCAVB. We present the case of a premature infant with CCAVB who underwent implantation of a permanent pacemaker. The male infant was born at 33 weeks of gestation and weighed 2150 g. Repeat fetal ultrasound assessment before demonstrated fetal cardiomegaly increased at 30 weeks gestation. The decision was made to deliver the baby by Cesarean section at 33 0/7 weeks gestation. After birth, the infant showed respiratory distress despite antenatal corticosteroid therapy. There were no clinical signs of hydrops fetalis. The heart rate ranged between 40 and 50bpm. An electrocardiogram showed that the rate of P wave was 120bpm and the rate of QRS wave was 50bpm. The chest X-ray demonstrated dilated heart and echocardiogram showed dilated chambers, small non significant PDA with left to right shunt, no ASD or VSD and satisfactory contracted ventricles. Respiratory problem was resolved after supportive treatment with temporary pacing. He underwent successful implantation of a permanent transepicardial pacemaker (VVIR mode, stimulation rate 120bpm, output 1.5 mV and sensitivity 2.6mA). A unipolar epicardial lead was used and the pulse generator was implanted in a pocket made under at the anterior rectus sheath. Surgery was performed without any complications. There was no respiratory problem associated with pacemaker implantations in the abdominal wall. He was discharged at the age of 31 days with a weight of 2350 g. At the 1-year follow up he remains in well condition without any complications. We have reported a case of a CCAVB with successful implantation of permanent pacemaker.

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