Translocation Procedure of Implanted Devices Due to Radiation Therapy for Malignancy

Kaoru Komatsu1,2, Gaku Sekita1, Hidemori Hayashi1, Yuji Nakazato2, Hiroyuki Daida1

1Department of Cardiology, Juntendo University School of Medicine, Japan, 2Department of Cardiology, Juntendo University Urayasu Hospital

Case 1: A 73 years-old male had a prior myocardial infarction with ventricular tachycardia (VT). An implantable cardioverter defibrillator (ICD; Medtronic VIRTUOSO) was implanted on his left anterior chest at the age of 71 years. It worked appropriately for VT by anti-tachy programming over 2 years. However, under the diagnosis of malignant lymphoma, he had to be done 60Gy mediastinal and bilateral axillary radiation therapy. We displaced his device 13cm lower from the original position, which was enough distance to avoid the radiation-induced trouble. No malfunctions were observed during radiation therapy.

Case 2: A 79 years-old male was implanted a pacemaker (Medtronic Adapta) on his right anterior chest 5 years ago due to atrial fibrillation with brady ventricular response. He had to receive 60Gy radiation therapy on his mediastinum and right upper lung field because of lung and esophageal double cancer. We displaced his device about 10cm downward and outward to avoid the radiation induced failures. Radiation therapy was successfully performed without any trouble.

Conclusion: The number of patients with implanted devices is increasing in aging society. In addition, the incidence of malignancy requiring radiation therapy is also increasing in these population. When implantable devices are within the field of radiation, to avoid the various malfunctions of the devices, translocation procedure is sometimes required.

Keywords: implanted devices, radiation therapy