

epicardial-endocardial delay gradient was observed in patients with CRT response or not. However lateral epi-endo gradient contraction is highly independently associated with CRT response. Finally this gradient was homogenizing one year after CRT for responders.

*The author hereby declares no conflict of interest*

## 0328

### Assessment of radiation exposure during cardiac device implantation: lessons learned from a multicenter registry

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**Background** Few data exist about radiation exposure during implantation of cardiac electrical device. No dose reference levels (DRLs) were reported.

**Purpose** to define DRLs and to analyze factors related to an increased radiation dose delivered to patients and medical staff.

**Methods** the Raypace study is a multicenter, prospective observational registry. Using a national database, patient demographic, procedural and radiation data were collected. Fluoroscopy time (FT) and dose-area product (DAP) were registered. Physician/staff exposure was measured using 2 real-time personal dosimeters, one worn under the lead apron and the other one worn outside the apron. Statistical analysis used log-transformation of DAP, FT and DAP/FT ratio.

**Results** A total of 657 procedures from 9 institutions were reviewed. Pacemaker (PM) and cardioverter-defibrillator (ICD) implantation was performed in 481 and 176 patients, respectively. A cardiac resynchronization device was implanted in 153 patients. Fluoroscopy time was similar for PM and ICD implantations. Median fluoroscopy time was 836, 117 and 101 second and median DAP was 1410, 150 and 129 cGy.cm<sup>2</sup> for biventricular, dual chamber and ventricular device implantation, respectively. LAO projection, in addition to AP projection, was used in 47% of the procedures. Five centers out of 9 used collimation. The median Hp (10) effective dose measured outside the lead apron was 4.6 µSv and 0.1 µSv under the lead apron.

Regarding CRT implant procedures, four systems out of 6 were responsible for an increased exposure (p<0.001). DRLs were 2600, 338 and 332 cGy.cm<sup>2</sup> for biventricular, dual chamber and ventricular device implantation, respectively.

**Conclusions** DAP reduction was improved with the use of latest generators but needed customized settings. Biventricular device implantation was responsible for the highest radiation exposure. However, radiation exposure during those procedures have decreased as compared to previously reported values.

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## 0168

### Occlusion of superior vena cava due to a pacing lead after an electrification

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**Introduction** Transvenous pacing is a relatively safe treatment with a low complication rate, but serious thromboembolic complications have been reported to occur in 0.6% to 3.5% of cases. Superior vena cava obstruction syndrome is generally an uncommon but serious complication occurring in <0.1% of patients.

**Case report description** A 28-year-old lady with history of DDD permanent pacemaker implantation secondary to a cardiac surgery (mitral and aortic

valves replacements). She was unfortunately electrified occasioning a threshold elevation. An attempt to implant a new endocavitary lead failed, the venography showed a partial occlusion of the right subclavicular vein and a total occlusion of superior vena cava with supleance, confirmed by the angioscanner. Her ancient leads were already functional; we replace only the pulse generator.

General examination doesn't revealed features suggestive of superior vena caval obstruction which was later confirmed by imaging. She was treated by continuing her long term oral anticoagulation.

**Discussion** A review of the literature suggests that neither thrombotic nor fibrotic obstruction in patients with pacemaker leads is strictly related to the number of abandoned leads, the presence of severed leads, or the time lapsing from pacemaker implant.

In our case despite anticoagulation for mechanic valve replacement the occlusion of the VCS occurred. Cardiac surgery, traumatic placement of ancient leads and latest electrocution probably contributed to this fact.

**Conclusions/Implications** Superior vena cava obstruction in patients with transvenous pacing leads, although rare, is a well recognized complication. One should carefully look for thromboembolic complications during follow-up in patients with transvenous pacemaker leads, as it has implications for future management and carries significant morbidity and mortality.

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## 0329

### Zero-fluoroscopy ablation for young patients: about 2 cases

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Radiofrequency catheter ablation (RFA) is the mainstay of therapy for supraventricular arrhythmias. Conventional radiofrequency catheter ablation requires the use of fluoroscopy, exposing patients to ionising radiation. The feasibility and safety of non-fluoroscopic ablation has already been reported using three-dimensional mapping systems. We are reporting 2 cases of young patients, for whom a RFA was performed without using Fluoroscopy.

**1<sup>st</sup> Case:** A 20-year old patient, presenting dyspnea and palpitation. Physical examination was normal. On ECG, a supraventricular tachycardia (SVT) with long RP and negative P waves in inferior leads was noted. RF ablation was indicated. Catheters were placed in the right atrium without the need to use fluoroscopy, guided by Carto 3D system mapping. The electrophysiology study made the diagnosis of atrial tachycardia arising from the coronary sinus ostium. The foci was successfully ablated.

**2<sup>nd</sup> Case:** A 16-year old patient, consulting for orthodromic reciprocating tachycardia. Physical examination and transthoracic echocardiography were unremarkable. Catheters were placed in the right atrium without the need to use fluoroscopy, guided by Carto 3 D system mapping. Tachycardia was initiated via atrial pacing. An anterograd left lateral accessory pathway was diagnosed. Left atrium was mapped with Carto 3D system through a permeable foramen ovale. The pathway was ablated. Ablation of SVT without use of fluoroscopy has a high acute procedural success rate with low incidence of procedural complication. Use of this technique completely relieves the patient and healthcare of radiation exposure.

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## 0026

### Usefulness of positon emission tomography to guide reimplantation after lead extraction for endocarditis

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**Purpose** PET/CT may be useful in difficult cases to identify endocarditis in patients (pts) implanted with cardiac devices. The usefulness of PET/CT before reimplantation after lead extraction for endocarditis has never been studied. We