Stimulation of the brachial plexus by a dislocated ICD lead: a rare complication

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Figure 1. Chest X-ray post ICD implantation.

Figure 2. Chest X-ray one month after implantation revealing that the shock electrode has retracted to the subclavian area.

A 64-year-old female with a history of myocardial infarction in 2003 with an ejection fraction of 23% underwent an ICD implantation in July 2008 without complications (figure 1). In 1945 her right leg was amputated as a result of a war injury and in 2007 she was treated for a right-sided mamma carcinoma with a sentinel node procedure and curative radiotherapy.

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One month after the implantation of the ICD the patient had complaints of contractions of the biceps of her left arm resulting in continuous bending of her left arm with a frequency of 40 beats/min. Programming the pacemaker to an AAI mode made the contractions stop (video 1 at www.cardiologie.nl). In a VVI mode the contractions continued in the programmed frequency (40/minute and 90/minute, respectively) concluding that the right ventricular shock electrode was the cause of this discomfort (video 2 at www.cardiologie.nl).

A chest X-ray revealed a dislocated right ventricular shock electrode retracted to the subclavian area causing innervations of the left brachial plexus. Also the lead in the right atrium was retracted but still connected to the atrial wall (figure 2).

The next day a repositioning of the right ventricular shock electrode and the atrial lead was performed. The

patient no longer suffered from muscle contractions in her left arm.

Innervation of the brachial plexus by a dislocated lead is very rare. The most common cause is an insulation defect of the proximal part of the pacing lead or current leakage from the connector or sealing plugs.^{1,2} The incidence of lead dislodgement is 2.1%.³ Risk of in-

appropriate shocks due to oversensing of myopotentials is not uncommon.⁴ The dislocation was most probably caused by extensive use of an axillary crutch with her left arm to spare the amputated right leg. The option of implanting an ICD on the right side was considered but discouraged by the radiotherapist. It is of utmost importance that the patient is well informed about immobilising the left arm to reduce the risk of dislocation. Also the use of a sling to immobilise the arm should be considered. ■

In this section a remarkable 'image' is presented and a short comment is given.

We invite you to send in images (in triplicate) with a short comment (one page at the most) to Bohn Stafleu van Loghum, PO Box 246, 3990 GA Houten, e-mail: l.mceester@bsl.nl.

'Moving images' are also welcomed and (after acceptance) will be published as a Web Site Feature and shown on our website: www.cardiologie.nl

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References

- 1 Hayes D. Extracardiac stimulation. In: A practice of cardiac pacing, Third edition. Furman S, Hayes D, Holmes D (editors). Futura publishing, Armonk. New York. 1993. P563.
- 2 Ekbom K, Nilsson B, Edhag O, Olin C. Rhythmic shoulder girdle muscle contraction as a complication in pacemaker treatment. *Chest* 1974;66:559-601.
- 3 Van Eck M, van Hemel N, Zuithof P, et al. Incidence and predictors of in-hospital events after first implantation of pacemakers. *Europace* 2007;9:884-9.
- 4 Rauwolf T, Guenther M, Hass N, et al. Ventricular oversensing in 518 patients with cardiac defibrillators: incidence, complications and solutions. *Europace* 2007;9:1041-7.