

A video demonstration of pacemaker-induced pectoral muscle stimulation

Ida Kirstine Bull Rasmussen,¹ Manan Pareek²

¹Faculty of Health Sciences, University of Southern Denmark, Odense C, Denmark
²Department of Cardiology, Aarhus University Hospital, Skejby, Aarhus N, Denmark

Correspondence to

Dr Manan Pareek,
mananpareek@dadlnet.dk

DESCRIPTION

An 82-year-old woman was admitted with symptoms presumed to be palpitations. The symptoms had been present intermittently for the past few weeks. The patient had a DDDR pacemaker on the left side, which was implanted 4 years earlier due to third degree atrioventricular block. Physical examination showed rhythmic contraction of the left pectoral muscle (see video 1). The contractions were synchronous with the paced rhythm as seen on a cardiac monitor. Furthermore, a few episodes of failure to capture were recorded. A high ventricular capture threshold above 3 V at 0.5 ms pulse width and reduced pacing impedance below 200 Ω were found in the bipolar configuration. The threshold was normal in the unipolar configuration; however, the pectoral muscle contractions persisted. The patient was transferred to an invasive cardiac centre, where a new right ventricular pacing lead was placed. Immediately after implantation, the capture threshold was 0.75 V at 0.4 ms pulse width, and the impedance was 640 Ω in the bipolar configuration. As expected, the old lead had an insulation defect just below the generator.

Pacemaker-induced extracardiac stimulation normally involves the diaphragm, the pectoral or the intercostal muscles. Common causes of local muscle contractions are insulation defect of the lead, positioning of the anode directly on the

muscle, defective coating of the pacemaker can or connector problems.^{1 2} In this case, lead insulation defect was suspected due to reduced pacing impedance. The diagnosis was supported by an increased capture threshold. Stimulation can be lessened by decreasing the output parameters, although an adequate safety margin must be maintained. Lead repositioning or replacement is required if the problem cannot be resolved by reprogramming.³

Learning points

- ▶ Pacemaker-induced extracardiac stimulation normally involves the diaphragm, the pectoral or the intercostal muscles.
- ▶ Lead insulation defect is a common cause of local muscle contractions and should be suspected when the lead impedance is reduced.
- ▶ Lead repositioning or replacement is required if the problem cannot be resolved by reprogramming.

Competing interests None.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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Video 1 Pacemaker-induced stimulation of the left pectoral muscle.



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