USE OF A MAGNET WITH PROGRAMMABLE PACEMAKERS

Sir,—I read with interest the case report of Drs Madsen and Andersen on pacemaker-induced tachycardia during transurethral resection of prostate, in which placing a magnet over programmable pacemakers was advised to reduce the pacing rate [1]. Unless the precise characteristics of the pacemaker are known, magnets should not be placed on programmable pacemakers when diathermy is being used, as electromagnetic interference from diathermy may cause random reprogramming of the pacemaker [2].

I am uncertain why a paced tachycardia was interpreted as a sign of inadequate anaesthesia. Care during manually assisted ventilation avoids hyperventilation as effectively as the use of a mechanical ventilator.

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Sir,—We thank Dr David for his remarks on our case report. It is correct that magnets, placed over programmable pacemakers during periods of diathermy, may cause random reprogramming of the pacemaker [1]. The use of a magnet may be controversial. Both the actual circumstances and the characteristics of the particular pacemaker must be taken into consideration.

An example of a problem related to the use of magnets over pacemakers was described in a clinical report by Shapiro and colleagues [2]. A magnet was placed over a pacemaker, into which was programmed a threshold test "Vario". When this test programme was initiated by the magnet, the pacemaker produced 16 pulses at 100 beat min⁻¹. However, during the second sequence the output was reduced successively to 0 V. If the threshold for stimulation is high, several beats may fall out. The pacemaker will repeat the test programme until the magnet is removed!

The pacemaker (META MV 1202, Telectronics), which the patient in our case report had implanted, does not have the "Vario" function. This pacemaker, which registers the ventilatory minute volume, is supplied with a bipolar electrode for stimulation of the heart. Pacemakers with bipolar electrodes are less sensitive to interference compared with those with unipolar electrodes [3]. In this connection, it should be observed that the pacing stimulus derived from a bipolar electrode may be difficult to see on an ECG, because of its small size (fig. 1). On a diascope this may be even more difficult, because of either noise interference or varying location of the leads. In this way the registration of heart rate may claim greater interest compared with the configuration of the ECG—to those who are unfamiliar with this problem.

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Fig. 1. Recording of an "ECG" from a patient with Meta MV 1202 pacemaker (Diascope (S & W)). The thin arrows indicate pacemaker stimulations. Thick arrows indicate P-waves in normal sinus rhythm with broad QRS complexes.