

PACEMAKER IMPLANTATION IN SYMPTOMATIC HEART BLOCK. EXPERIENCE IN 201 PATIENTS

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Between 1964 and 1971, 219 pacemakers (PM) were implanted in 201 patients on account of symptomatic heart block. There were 121 endocardial and 98 epicardial implantations, 92 on fixed and 127 on demand pacing. Patients' ages ranged between 14 and 86 years; the underlying diagnosis was coronary heart disease in 56, cardiomyopathy in 7, progressive muscular dystrophy in 1, scleroderma in 1, unknown in 136 cases. The main complication of epicardial pacing was pleural effusion which cleared up spontaneously in all. In-hospital

mortality rate in this group was 12%, mainly from infection, pulmonary emboli or myocardial infarction. In-hospital mortality in endocardial pacing was 2.4%, mostly in our first patients. Complications included infection (6 cases), myocardial perforation (3 cases) without ill effect other than transient cessation of pacing in all, sudden death (3 cases) probably due to impulse falling on vulnerable phase. The one year survival rate for epicardial and endocardial implantation was 78.4% and 90.4% respectively. Our results show that endocardial pacing should be preferred in most cases and that a demand pacemaker be implanted in all patients irrespective of the presence of unstable atrio-ventricular block.

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DEMAND AND BIFOCAL DEMAND PACING

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The use of controlled electricity in the management of the cardiac patient has taken two directions. In one a high-level discharge is used to re-establish natural pacemaker activity. This application of electricity is known as cardioversion and is used to convert tachyarrhythmias. In the other a low-level discharge is used to artificially pace the heart. This mode is used primarily for the treatment of bradyarrhythmias and involves the use of pacemakers.

The QRS-inhibited demand pacemaker has become the pacemaker of choice for the treatment of complete AV block whether the block is permanent or intermittent. The advantages of this mode of pacing have been adequately presented.

An extension of the ventricular demand pacemaker is the recently introduced bifocal (sequential atrioventricular) demand pacemaker. Technically it consists of two demand units, a conventional QRS-inhibited ventri-

cular pacemaker and a QRS-inhibited atrial pacemaker. The escape interval of the atrial pacemaker is shorter than the escape interval of the ventricular pacemaker. The difference between the two escape intervals determines the AV sequential delay. The bifocal demand pacemaker may stimulate both atria and ventricles in sequence, stimulate only the atria or remain totally dormant, thus automatically adapting to the patient's needs.

The indications for the use of the bifocal demand pacemaker are:

1. Sick sinus syndrome;
2. Significant atrial bradyarrhythmias accompanied by intermittent AV block and
3. AV block where atrial contribution to ventricular output is essential.

A total of 125 bifocal demand pacemakers have been implanted in the past three years with encouraging results. Pacing therapy has undergone marked evolution during its relatively brief existence. The physician has the obligation to understand the various pacing modalities and to select the most suitable concept of pacing for each particular disorder.

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