Quantitative videoangiocardiography

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With a foreword by
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To Joke, Matilde
and Arthur

'Le coeur a ses raisons, que la raison ne connaît point;
on le sait en mille choses.'

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Illustrations

Figures 2.2 and 4.1 are redrawn oscilloscope recordings.

The following illustrations have been reproduced from VAN WIJK VAN BRIEVINGH, (1974[a]) by courtesy of the European Journal of Cardiology (Excerpta Medica): 1.1; 2.8; 2.9; 2.10; 3.2; 3.4; 4.4; 4.5; 5.1(top); 6.2; 6.4.

Foreword

It is with great pleasure and gratitude that I fulfil the request to write a foreword for this monograph.

In 1970 we asked the author to develop a system and construct the equipment which would allow us to measure left ventricular end-diastolic and end-systolic volumes in patients with induced and autochtonous arrhythmias. The question was evidently easier to ask than to answer, as is demonstrated in and by this book. The complications which the author encountered and had to overcome were numerous. He has indeed shown great skill in solving most of the (bio-)technical problems, at the same time showing an unheard- of organizational talent for lining up the parts which together were to form the system which is described in this book. One of the features of the system, the running videosubtraction, may in itself turn out to be of great importance for clinical cardiology. Apart from the pathophysiological significance of the technique for left-ventricular volume measurement, its clinical relevance lies and should be looked for in the selection of patients for cardiac and coronary bypass surgery and in the evaluation of the results thereof.

This work is the fruit of a marriage between technology and medicine and should be of equal interest, we hope, to medical engineers and physicians, such as cardiologists and radiologists.

Preface

The study reported here has been carried out as a collaboration between the Medical Engineering Group, Department of Electrical Engineering of the Delft University of Technology and the Department of Cardiovascular Diseases of the Utrecht University Hospital. The author feels it most rewarding that a medical physicist has been willing to act as his promotor and a cardiologist as his co-promotor, thus giving him the opportunity of learning a multidisciplinary field in the best situation possible. The discussions with the co-referent prof.dr. D. Harting contributed to a critical evaluation of theoretical and instrumental aspects of the measurement system. The experience of participating in the *in vivo* tests in the Laboratory for Experimental Cardiology with dr. A.N.E. Zimmerman and in the catheterization laboratory with dr. T. v.d. Werf and their staff has been a thorough initiation in the clinical situation. The facilities granted by the Department of Electrical Engineering in a situation where the Medical Engineering Group still had to find its proper place, are gratefully acknowledged. As the number of co-authors of publications on the project shows, this thesis reports on work done with members of both institutes; their enthousiastic contribution has been one of my pleasures in this investigation.

Guiding the students who have participated in the project during their 4th year's- or M.Sc.E.E.-thesis subjects has been a most satisfying aspect of my daily work.

The Dutch Foundation for Fundamental Medical Research, FUNGO, has granted a subsidy for this project, thus making it possible to apply advanced technology to the solution of the clinical problem posed.

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