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PLATELET-VESSEL WALL INTERACTIONS

R. MICHAEL PITTILO
SAMUEL J. MACHIN (Eds.)

With 55 Figures

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Cover illustration: Scanning electron micrograph showing discoid and
activated platelets in contact with the arterial wall ($\times 10\,000$).

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Series Editor's Foreword

The publication of *Platelet-Vessel Wall Interactions*, the second monograph in the Bloomsbury Series in Clinical Science, is particularly welcome as its appearance signifies the further development of the Series and its potential for the future.

The theme of this monograph is the pathophysiology of atherosclerosis, a topic that symbolises the aim of the Series, namely to highlight the important interfaces between basic medical science and clinical practice.

Our congratulations to the Editors and contributors.

London, December 1987

Jack Tinker

Preface

In the Western world, atherosclerosis causes more illness and death than any other disease. Despite its devastating effects, the pathogenesis of the disease remains a matter for hypothesis and conjecture. This monograph owes its conception to a programme of work directed towards understanding the basic pathophysiology of atherosclerosis.

The circulatory system is lined by vascular endothelium which has a central role in maintaining the integrity of the vessel wall and preventing thrombosis. The natural equilibrium existing between normal endothelium which supports blood flow, and platelets which serve to repair damaged endothelium, is explored in the first two chapters.

Atherosclerosis developing as a response to endothelial injury is one hypothesis which has stimulated widespread interest, and research has largely been directed towards finding the injurious agent. There are many known risk factors for developing atherosclerosis—cigarette smoking, diabetes, hypertension and hyperlipidaemia—but a final common pathway of endothelial damage has not yet been defined. Using *in vitro* models, endothelium has been exposed to potentially toxic substances and circumstances, in an attempt to isolate the causal mechanism. The resulting effects on both structure and function of the vascular lining are discussed in detail.

In addition to basic pathophysiological research, our attention is also directed towards finding solutions to the clinical problems of established disease. The chapter on mesothelium outlines the experimental evidence for a novel solution to the problem of thrombogenic arterial prostheses.

Atherosclerosis is not the only disease to result from the malfunction of platelets and endothelium. Disruption of the equilibrium in the vessels of the kidney leads to life-threatening diseases, which are discussed in detail in Chapter 7.

The monograph ends with an account of new advances in the pharmaceutical field which may represent the mainstay of future treatment. Research will continue to discover and understand the fine

mechanisms controlling the normal vascular system and the problems that so commonly occur.

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May, 1986

R. Michael Pittilo
Samuel J. Machin

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