Progress in Surgery

Vol. 6

Edited by M. Allgöwer, Basel

Contributors

S.-E. Bergentz, Göteborg

23 figures, 12 tables

1968

BASEL (Switzerland) S. KARGER NEW YORK

Progress in Surgery

Vol. 1: XVI + 256 p., 65 fig., 3 tab., 1961
Vol. 2: VIII + 318 p., 84 fig., 20 tab., 1962
Vol. 3: XII + 304 p., 50 fig., 1963
Vol. 4: VIII + 112 p., 20 fig., 5 tab., 1964
Vol. 5: VIII + 164 p., 118 fig., 7 tab., 1966

S. Karger AG, Arnold-Böcklin-Strasse 25, 4000 Basel 11 (Switzerland)

All rights, including that of translation into other languages, reserved.
Photomechanic reproduction (photocopy, microcopy) of this book or parts thereof without special permission of the publishers is prohibited.

©

Copyright 1968 by S. Karger AG, Basel
Printed in Switzerland by Buchdruckerei Kohlhepp AG, Neuallschwil
Blocks: Steiner & Co., Basel

Index

Table of Contents III
Preface V
Liver Surgery
S. Bengmark, Göteborg

I. Introduction 2
II. Liver Regeneration 2
1. Morphological changes 2
2. Chemical changes 3
3. Regeneration of cirrhotic liver 6
III. Anatomy 7
1. Gross anatomy 7
2. Biliary ducts 9
3. Hepatic artery 9
4. Portal vein 10
IV. Operative Technique 11
1. Anatomical resections 11
2. Non-anatomical resections 14
3. Mortality 17
V. Indications 18
1. Hepatocarcinoma 19
2. Gall bladder cancer 20
3. Liver metastases 23
4. Carcinoid 27
5. Benign tumours and cysts 28
6. Traumatic injuries 30
VI. Postoperative Metabolism 37
1. Functional alterations 37
2. Serum protein changes 38
3. Temporary coagulation defect 38
4. Lipid metabolism 40
VII. Pre- and Postoperative Treatment 42
1. Central venous pressure registration 42
2. Prevention of effects of hypoxia 43
3. Postoperative substitution 44
VIII. Other Surgical Procedures 44
1. Hepatic de-arterialization 44
2. Intra-arterial infusions of oncolytic drugs 46
3. Other methods 47
IX. Final Remarks 47
X. References 48

IV Index
Thoracic Transposition of the Spleen and Spleno-pneumorrhaphy in Portal Hypertension. Experimental Studies in Dogs
H.H. Gruenagel, Freiburg i/Br.

I. Introduction 60
II. Transposition of the Spleen into the Thoracic Cavity 61
III. Measures to Produce Adhesions 61
IV. Transposition of the Spleen into the Lung 64
V. Ammonium Tolerance Test 70
VI. Flow Measurements in Spleno-pulmonary and in Spleno-femoral Anastomoses 72
VII. Comparison between the Efficiency of the Spleno-pulmonary and the Splenofemoral Anastomosis 74
VIII. Flow Measurements after Thoracic Transposition of the Spleen and after Implantation of the Spleen into the Lung 76
IX. Summary 77
X. References 78

Fat Embolism

S.-E. Bergentz, Göteborg

I. Introduction 85
II. Fat Embolism as a Patho-Anatomical Phenomenon 86
1. Definition: the fat droplets 86
2. Frequency and occurrence 87
3. Origin of the fat droplets 88
III. Fat Embolism as a Clinical Syndrome 91
1. Pulmonary fat embolism 92
2. Systemic fat embolism 95
IV. Pathogenesis of the Clinical Syndrome 97
1. The effect of fat droplets 97
2. Patho-anatomical alterations associated with the fat emboli syndrome 97
3. Patho-physiological changes associated with fat embolism 100
   a) Coagulation 100
   b) Microcirculation 102
   c) Lipid metabolism 103
V. In Summary—What is Fat Embolism? 106
VI. Therapeutic Aspects 108
1. There is no ‘specific’ treatment of fat embolism 108
2. The lack of ‘specific’ treatment does not justify a therapeutic nihilism 109
   a) Prophylaxis and therapy of hypovolemic shock 110
   b) Respiratory care 112
Preface

It gives me double pleasure to introduce the sixth volume of ‘Progress in Surgery’. The first satisfaction stems from the high quality of the contributions contained in this volume, and the second, perhaps more correctly called a 'sigh of relief', is derived from the knowledge that this is the last volume of a ‘one man endeavour’. While such an undertaking has had the advantage of flexibility there can be no doubt that the challenge has also had its nightmarish aspects. When I was asked 10 years ago by Prof. Nissen and Dr. Karger to start the series, I accepted rather hesitatingly. Although there was no doubt in my mind about the merits of the proposal, I questioned my ability to discharge this grave responsibility competently in the limited time available to a busy clinician and academic surgeon, constantly haunted by the thought of his own unfinished projects. In the succeeding years however, I found more help than had been anticipated, and outstandingly competent contributors accepted invitations to prepare articles for ‘Progress in Surgery’. As we had hoped, the surgical profession gave it a friendly reception. As time went on, the need for a more specific aim, and for the stimulating help of an active team of co-editors, was increasingly felt. With the publication of ‘Advances in Surgery’ in the United States, which appeared shortly after volume I of ‘Progress’, it became clear that ‘Progress’ should not try to compete for American authors. Rather, it seemed wise to concentrate—without any chauvinistic thought in mind—on European contributions in order to bring them to the attention of the surgical profession throughout the world. Thus, a service to our friends, both in Europe and on other continents was envisioned. With this specific aim in mind, a small team of co-editors was sought, for it was realized that only a group of friends meeting at regular intervals could do the productive as well as discriminative work that is necessary. The search was fruitful, and it gives me great
pleasure to introduce the following co-editors who will be jointly responsible for the forthcoming volumes of ‘Progress in Surgery’.

Prof. Roy Calne, Englishman, was born in 1930. He is Professor of Surgery at the University of Cambridge, Addenbrooke’s Hospital. Without exaggeration it can be said, that he is now one of the leaders in Organtransplantation, in which field he has published many important and outstanding contributions.

VI Preface

Sven-Erik Bergentz M.D. is a Swedish citizen. He is 40 years old and was born and educated in Sweden. He is a collaborator of Prof. L.E. Gelin since many years, including studies in London and Boston. Now he is Associate Professor of Surgery at the Surgical Department I, University of Gothenburg, Sahlgrenska Sjukhuset and known for his work on fat embolism (Thesis 1961), shock and burns as well as on coagulation disorders related to surgery and trauma. Since several years he is also very active as a general and vascular surgeon with one of the largest series of kidney transplants in Europe.

Ulrich F. Gruber, of Swiss origin was born 1930 in Zurich. He got his M.D. at the University of Zurich 1955. He had his medical training in Zurich and Boston. Since 1961 he is a collaborator of mine. 1964/65 he spent with L.E. Gelin in Gothenburg. Since 1967 he is Associate in Surgery at the University Surgical Clinic in Basel and vicepresident of the European Society for Experimental Surgery. It is interesting to note that all three of them have been trained for some time with Professor F.D. Moore at the Department of Surgery, Peter Bent Brigham Hospital, Harvard Medical School, Boston.

It is my sincere hope that ‘Progress in Surgery’ will know full success in transmitting basic knowledge as well as technical knowhow, and that it will have the advantage of constructive criticism of the surgical profession throughout the world.

This volume contains three review articles. Dozent Bengmark, Surgical Department II, University of Gothenburg, gives an excellent review of the present state of liver surgery, covering all theoretical and practical aspects of this subject. Loosely related to this field is the problem of intrathoracic transposition of the spleen for the treatment of portal hypertension. It is shortly reviewed by Dozent Gruenagel from the University Surgical Clinic, Freiburg i/Breisgau. He presents both his personal experimental experience and the clinical
results, so far obtained. The last article by Dozent Bergentz deals with fat embolism. His excellent and critical review will certainly help all surgeons dealing with this complicating problem for which no definite therapeutic solution has been found so far, but important progress in the understanding of the underlying pathophysiology has been made.

Basel, January 1968 M. Allgöwer