

IMPACT OF CARDIAC SURGERY ON THE QUALITY OF LIFE

Neurological and Psychological Aspects

IMPACT OF CARDIAC SURGERY ON THE QUALITY OF LIFE

Neurological and Psychological Aspects

Edited by

Allen E. Willner

*Long Island Jewish Medical Center, Hillside Hospital
Glen Oaks, New York*

and

Georg Rodewald

*University Hospital Hamburg-Eppendorf
Hamburg, Federal Republic of Germany*

PLENUM PRESS • NEW YORK AND LONDON

Library of Congress Cataloging-in-Publication Data

International Symposium on the Impact of Cardiac Surgery on the Quality of Life: Neurological and Psychological Aspects (3rd : 1989 : New York, N.Y.)

Impact of cardiac surgery on the quality of life : neurological and psychological aspects / edited by Allen E. Willner and Georg Rodewald.

p. cm.

"Proceedings of the Third International Symposium on the Impact of Cardiac Surgery on the Quality of Life: Neurological and Psychological Aspects, held March 28-30, 1989, in New York, New York"--T.p. verso.

Includes bibliographical references.

Includes index.

ISBN-13: 978-1-4612-7908-2 e-ISBN-13: 978-1-4613-0647-4

DOI: 10.1007/978-1-4613-0647-4

1. Heart--Surgery--Psychological aspects--Congresses. 2. Heart--Surgery--Patients--Mental health--Congresses. 3. Heart--Surgery--Patients--Psychological testing--Congresses. 4. Quality of life--Evaluation--Congresses. I. Willner, Allen E. II. Rodewald, Georg. III. Title.

[DNLM: 1. Heart Surgery--adverse effects--congresses. 2. Heart Surgery--psychology--congresses. 3. Mental Disorders--etiology--congresses. 4. Nervous System Diseases--etiology--congresses. 5. Prognosis--congresses. 6. Psychological Tests--congresses. 7. Quality of Life--congresses. WG 169 I606: 1989]

RD598.I537 1989

617.4'12'0019--dc20

DNLM/DLC

for Library of Congress

90-14215

CIP

Proceedings of the Third International Symposium on the Impact of Cardiac Surgery on the Quality of Life: Neurological and Psychological Aspects, held March 28-30, 1989, in New York, New York

© 1990 Plenum Press, New York

Softcover reprint of the hardcover 1st edition 1990

A Division of Plenum Publishing Corporation

233 Spring Street, New York, N.Y. 10013

All rights reserved

No part of this book may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, microfilming, recording, or otherwise, without written permission from the Publisher

ACKNOWLEDGEMENTS

On behalf of our Consortium we would all like to thank several people who helped to make possible the International Symposium and this book:

1. All our colleagues without whose efforts this International study could never have been carried out.

2. Three intelligent and diligent young women: Sharon Windwer, Carol Ritter, and Janet Sendar, who did the essential but tedious work of scoring, checking and entering the data into the computer.

3. Ms. Ann Boehme and her co-workers from the LIJ Department of Continuing Education, Debbie Mohr and Mindy Gordon, who helped us accomplish the almost impossible task of organizing an International Symposium within two months rather than the customary two years.

4. Carol Ritter, who was unflaggingly cheerful, intelligent and thorough in carrying out the seemingly interminable tasks required in turning a collection of manuscripts into a book.

5. Ginny Fay, for her tireless efforts in typing the manuscript.

6. Plenum Publishing Corp. for its help in quickly putting this book into print and especially Melanie Yelity and Greg Safford for their thoughtfulness and direction.

7. Ken Moeller, Ph.D., for his many years of work in the earlier stages of this research.

8. And finally, Dr. Robert Flemma for his enthusiasm and guidance during the long planning stages of the International Study.

CONTENTS

Introduction 1
G. Rodewald and A. E. Willner

PSYCHIATRIC ISSUES

Methods - Construction and Clinical
Application of the Hamburg Rating Scale
for Psychic Disturbances (HRPD) 9
P. Gotze, B. Dahme, U. Lamparter, and S. Falck

Psychiatric Methods of the International Study:
Hamilton Depression and Anxiety Scales 19
B. Strauss and G. Paulsen

Psychiatric Issues: Simple Frequencies
Pre- and Postoperatively 27
H. Speidel

Fantasies Evoked by Cardiac Surgery 39
R. S. Blacher

The Evaluation of the Emotional Climate in the
Families of Cardiac Surgery Patients 45
G. Invernizzi, R. Basile, A. Passerini,
N. Calchi Novati, C. Bressi, A. Repossini,
and P. Biglioli

Psychologic Sequelae of Cardiac Valve
Implantation 49
J. G. Peden, Jr.

What Do Patients With Incomplete Postoperative
Data Tell Us? The Problem of Fatal Outcome
and Refusing Postoperative Testing:
Psychiatric Aspects 53
G. Paulsen

Psychological Adaptation of Patients 3 to 5 Years After Heart Surgery	61
A. Boll, B. Dahme, H. J. Meffert, and H. Speidel	
An Interpretive Study of the Metaphors Male Coronary Artery Surgery Patients Use to Describe the Surgical Experience	73
M. H. Hawthorne	
Good Psychosocial Adaptation to Implantable Cardioverter Defibrillators	83
C. Pycha and J. R. Calabrese	
Denial Among Cardiac Patients With the Automatic Implantable Cardioverter Defibrillator	89
E. A. Gonzalez and D. K. Cooper	

NEUROLOGICAL ISSUES

The Susceptibility of the Central Nervous System to Open Heart Surgery	97
T. Emskoetter and L. Lachenmayer	
Neurological Assessment of Early Cerebral Outcome After Coronary Bypass Surgery	105
H. Strenge	
Automatic EEG Monitoring in Cardiac Surgery	111
E. H. J. F. Boezeman, A. J. R. Simons, and J. A. Leusink	
Magnetic Resonance Imaging of the Brain in Infants and Children Before and After Cardiac Surgery: A Prospective Study	121
J. R. McConnell, W. H. Fleming, and L. B. Sarafian	
Cerebral Dysfunction in Elective Coronary Surgery	129
W. A. Stermann, C. Lammers, R. Moosdorf, C. R. Hornig, and H. H. Scheld	
Cerebral Blood Flow Regulation During Cardiopulmonary Bypass: Correlation With Postoperative Neurologic and Neuropsychologic Deficits	137
M. Newman, N. Croughwell, W. Greeley, F. Kern, J. Aladj, G. Brusino, M. Lyth, L. R. Smith, and J. G. Reves	

Electroencephalogram-Based Prognosis of Cardiac Surgery - A Long-Term Follow-Up Study	145
P. L. Hansotia, P. N. Karanjia, R. D. Sautter, W. O. Myers, J. F. Ray, III, B. A. Becker, and W. E. Pierce	

PSYCHOMETRIC ISSUES

The Use of Cognitive Tests to Assess Cognitive Impairment in Cardiac Surgery Patients: With Emphasis on the CLAT Analogy Test	155
A. E. Willner	
Changes in Psychometric Test Scores After Cardiac Surgery	167
N. Feys-Dunne and A. E. Willner	
The Persistence of Neuropsychological Deficits Twelve Months After Coronary Artery Bypass Surgery	173
S. Newman, L. Klinger, G. Venn, P. Smith, M. Harrison, and T. Treasure	
Neuropsychological Functioning Following Cardiopulmonary Bypass	181
M. van Foreest	
Reports of Cognitive Change, Mood State and Assessed Cognition Following Coronary Artery Bypass Surgery	191
S. Newman, L. Klinger, G. Venn, P. Smith, M. Harrison, and T. Treasure	
Memory Functioning After Cardiac Surgery With Cardiopulmonary Bypass: Comparisons Between Heart and Back Patients	201
G. W. Harter, J. M. Williams, W. E. George, M. Mutchnick, and I. Torres	
Neuropsychological Findings and Personality Structure Associated With Coronary Artery Bypass Surgery (CABS): An Eight Month Follow-Up Study	211
C. E. Mattlar and L. R. Knutz, E. Engblom, and E. Vanttinen	

Predicting Memory Outcome From Medical Variables After Cardiac Surgery With Cardiopulmonary Bypass	221
G. W. Harter, J. M. Williams, W. George, M. Mutchnick, and I. Torres	
Neuropsychological Impairment in Candidates for Cardiac Transplantation	231
R. Bornstein, D. Hammer, R. Starling, J. Stang, R. Lewis, and R. Magorien	
MEDICAL/SURGICAL DATA	
The Surgeon's Description of the Patient Population	239
D. E. Birnbaum	
A Study of Equipment for and Performance of Extracorporeal Circulation	247
H. Pokar	
Cerebral Protection During Cardiopulmonary Bypass: Devices and Techniques to Prevent Air Embolism	255
M. Kurusz and V. R. Conti	
Cerebral Blood Flow Declines Independently of Metabolism During Hypothermic Cardio- pulmonary Bypass	265
D. A. Stump, A. T. Rogers, D. S. Prough, and A. S. Hudspeth	
Emission of Micro-Bubbles in Bubble (BO) and Membrane-Oxygenators (MO): A Comparative Investigation	273
C. Grefe, K. Ayisi, and J.-J. Krebber	
Comparison of In-Hospital Conditions for "International Study" and "Non-Study" Patients	279
H.-J. Meffert, U. Lamparter, and A. Boll	
Weight Gain and the Development of Sleep Apnea Following Heart Transplantation	285
M. Leveaux and S. Hook	

CORRELATIONS BETWEEN MEDICAL/SURGICAL DATA AND
 POSTOPERATIVE PSYCHIATRIC, NEUROLOGICAL AND
 PSYCHOMETRIC CONDITION

Demographics of the Multi-Center Sample 293
 M. Bornstein, A. E. Willner, and G. Rodewald

Type of Oxygenator, Type of Arterial Filter, and
 Bypass Time, in Relation to Outcome 297
 G. Rodewald, A. E. Willner, and M. Borenstein

Several Parameters of Extracorporeal Circulation
 and Outcome 309
 G. Rodewald and A. E. Willner

Anesthesia and Psychometric Tests - Problems in
 Psychological Assessment of Cognitive
 Recovery After Anesthesia 319
 B. Dahme and H. Pokar

Arterial Line Filtration Reduces Microembolism
 and Significantly Improves Neuropsychological
 Outcome in Coronary Artery Surgery 327
 T. Treasure, W. Pugsley, L. Klinger,
 C. Paschalis, B. Aspey, M. Harrison, and
 S. Newman

Cerebral Microembolism and Neuropsychological
 Outcome Following Coronary Artery Bypass
 Surgery (CABS) With Either a Membrane or
 Bubble Oxygenator 337
 P. L. Smith, C. Blauth, S. Newman, J. Arnold,
 F. Siddons, and K. M. Taylor

EEG Monitoring During Cardiopulmonary Bypass
 Procedures 343
 F. T. Strobl, K. V. Arom, and D. E. Cohen

Success of the Low Flow - Low Pressure Perfusion
 in Reducing Postoperative Psychological
 Disturbances 353
 A. Tanzeem, C. Vahl, H. Schaefer, and S. Hagl

Review: Medical and Surgical Data 365
 K. M. Taylor

CORRELATIONS BETWEEN PSYCHIATRIC,
NEUROLOGICAL AND PSYCHOMETRIC VARIABLES

Correlations Between Psychiatric, Neurological and Psychometric Variables: Psychiatric and Psychometric Issues	373
B. W. R. Lamosa	
Correlations Between Psychiatric and Neurological Findings	381
P. Tienari	
The Correlations Between Neurological and Neuropsychological Variables	389
R. Hirvenoja	

PREDICTION AND POSTOPERATIVE OUTCOME

Can One Predict the Patient's Postoperative Psychiatric and Neurological Condition?	399
A. E. Willner	
Psychodynamic Prediction of Postoperative Mental Vulnerability	411
U. Lamparter, P. Gotze, and H.-J. Meffert	
The Relevance of Health Related Cognitions and Attitudes For the Prediction of Surgical Outcome	417
B. Strauss, M. Amirmansouri, K. Oltmann, G. Paulsen, D. Regensburger, H. Speidel, S. Schmolling, H. Streng, S. Tiemann, and M. Tobias	
The Relationship of Preoperative Anxiety and Postoperative Complications in Patients Having Open Heart Surgery	425
B. C. Carlson	

QUALITY OF LIFE

Quality of Life of Finnish Heart Surgery Patients Related to Results From Preoperative and Follow-Up Examinations	435
H. Rahikkala	

CONTENTS

xiii

Beck Depression Inventory Scores of Coronary Bypass Patients With and Without Psychological Intervention	447
J. B. Pimm and J. R. Jude	
Quality of Life After Open Heart Surgery	455
P. J. Walter and B. J. Amsel	
Quality of Life After Cardiac Surgery: Social and Environmental Aspects	463
H.-J. Meffert, W. Roediger, A. Boll, and W. Hurmann	
Quality of Life and Coping in Heart Transplant Recipients	471
B. E. Meyerowitz, J. Vasterling, J. Muirhead, and W. Frist	
Development of a Construct of Psychological Dependency in Patients With the Automatic Implantable Cardioverter Defibrillator: A Quality of Life Issue	483
E. Piasecki, M. Gutmann, K. Axtell, and P. Tchou	
Quality of Life Issues and Psychological Treatment Strategies Affecting Coronary Artery Disease During Convalescence and Rehabilitation	491
M. Williams	
Appendix	503
Index	513