

Head Injuries

An Integrated Approach

Edited by T. A. R. Dinning and T. J. Connelley



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Head Injuries

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HEAD INJURIES — A PREVENTABLE EPIDEMIC
Sydney, Australia, 1979

Held under the auspices of the
AUSTRALIAN NEUROLOGICAL FOUNDATION

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Foreword

I am sure everyone appreciates the importance of the subject under discussion in this book. The term 'head injury' is used to imply 'brain injury'. With an intact brain, man can overcome or compensate for almost any physical disability. The injured brain constitutes a particular and most difficult problem. Brain injury causes untold grief, suffering and expense to individuals, and enormous cost and loss of life and of human value to the community.

The Australian Neurological Foundation has the objective of alleviating much of this suffering and loss. It can be done by:

1. Preventive measures, the most important being education in the avoidance of injury in traffic, industry and sports. General enlightenment of and advice to law-making and law-keeping authorities may achieve a great deal.
2. Early and adequate care by surgeons and their paramedical assistants, and rapid transport to properly equipped and staffed neurosurgical centres.
3. Early and sophisticated rehabilitation of injured persons.
4. The provision of proper care and compensation for those with irreparable damage.

It is to be hoped that the deliberations of this symposium and subsequent action on its recommendations will do much to achieve these ends.

SIR DOUGLAS MILLER
FRCS, FRACS

Preface

This book arose from the desire of the Australian Neurological Foundation to bring together a group of professionals from varied disciplines to analyse and to discuss the problems facing the brain injured patient, his family and relatives, and the community within which he lives in the Australian setting. Discussion and analysis of problems, however, is largely a sterile exercise unless followed by practical proposals for at least partial solutions to the problems. To this end, the Foundation organized a two-day conference, the main components of which were four workshop sessions. The recommendations of these sessions, which conclude Chapters 1, 2, 3 and 4, are the *raison d'être* of the conference.

We were fortunate to be able to obtain the services of Professor W. Bryan Jennett as keynote speaker. His two major contributions and his lively participation in the panel discussions ensured keen audience attention throughout the conference.

The reader will not find in these pages a detailed scientific treatise on the biophysical, biochemical, and pathological consequences of brain trauma. Attention is instead focused on the social and administrative problems of head injuries, viewed as a major epidemic. Although the issues raised in this volume are those encountered in Australia, there is no reason to believe they are greatly different from those facing other industrialized and motorized countries.

The editors hope the papers and resolutions presented here will provide a framework for action on multiple fronts to contain and diminish the physical, psychological and economic ravages of this epidemic. This will be an aim of the Foundation.

T. A. R. DINNING
T. J. CONNELLEY
Editors

Keynote Speaker: Professor W. Bryan Jennett

Professor Bryan Jennett's academic interests have focused on several common themes, including the clinical applicability of laboratory research, the distinction between what is useful and what is merely interesting. In keeping with this, he continued his studies of head injury and post-traumatic epilepsy and embarked on a large study of the angiographic investigation of stroke and more recently of the natural history of backache and sciatica.

During his first years in Glasgow he quickly established himself as an outstanding teacher, not only of clinical and operative neurosurgery, but also of how to approach patients and their families in a sympathetic and sensitive way. He has himself a sympathetic ear to those who approach him for guidance in their careers in all aspects of medicine, and many have cause to be thankful for the good advice which is proffered.

When the University of Glasgow established a Chair of Neurosurgery in 1968, it was clear that the position would best be filled by Bryan Jennett. In the course of his 15-year association with Glasgow, Professor Bryan Jennett has attracted trainee neurosurgeons from all over the world.

The quality of his writing is outstanding. His *Introduction to Neurosurgery* should be read by all neurosurgeons, not just as a neurosurgical text, but as a guide towards clear, concise medical writing. These qualities led to his appointment to many local and national committees, including the Medical Research Council, the Transplant Advisory Panel and the Department of Health panel on medical research.

Professor Jennett's interests have recently focused on some of the broader issues in medicine in the United Kingdom, issues which are rapidly rising to the fore in the United States — the best allocation of limited resources for both research and the practice of medicine; how to establish priorities in the use of beds, equipment and trained

personnel; definitions of brain death, of severe neurological disability; assessment of the cost to the patient, to the family unit and to a responsible society; the value of rehabilitation of the neurologically disabled patient. He was never one to shrink from controversy. If he has a view, he will state it publicly, clearly and even if it seems likely to provoke argument he will not be deterred. Ever articulate, what he says and writes may encourage some and antagonize others, but it always makes us think and forces us, if we are to debate with him, to define our own terms and goals more clearly. And that, to close on a Scottish note, is always to the common good.

Extract from an article by J. Douglas Miller, which appeared in *Surgical Neurology*, vol. 10, October 1978

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1

The Extent of the Problem (incidence, causes, prevention)

It is perhaps surprising that, after a century or more of data collection in the field of public health, detailed information about the frequency, causes and distribution of head injuries is still deficient. Professor Jennett points out that this information is vital to the proper planning of health services, especially for the distribution of neurosurgical facilities, and for monitoring the effectiveness of the treatment of head injuries.

Data now being collected by the Neurosurgical Society of Australasia, in collaboration with the Health Commission of New South Wales, may well provide a model for an Australia-wide data collection programme for monitoring and evaluating neurotrauma.

Epidemiology of head injuries

W. B. JENNETT

Head injuries are challenging because they occur so frequently, predominantly in young people, and because what is done about them in the early stages is very often crucial to whether or not survival is secured, and if it is, whether or not the patient remains permanently disabled or makes a good recovery. They are challenging also because they are difficult to treat, occurring at all times and in all places; because their course often seems to be capricious, some mild injuries becoming seriously complicated and some initially severe injuries making a good recovery; and because rapid decisions have often to be made about their early management in the broadest sense.

One reason head injuries present such a serious problem is that they are so widely dispersed through the health care system that no one person or even any one discipline sees the problem as a whole. Nor is there acceptance of responsibility by any one individual or discipline for the management either of an individual patient or of a class of patients. Consequently the problem tends to be left in the hope that it will be solved by someone else. There are patients presenting to accident emergency departments who are not admitted, there are patients admitted to primary surgical wards about whom the neurosurgeon never hears, and there are more seriously affected patients who pass successively through the hands of primary surgeons, neurosurgeons, rehabilitation units and eventually even long-care facilities.

We believe this problem will only be solved when it has been clearly defined, and that involves establishing the scope and scale of the problem. That in turn demands that the term 'head injury' be defined — a phrase which does not occur in the international classification of disease. It is important to know where head injuries go, because only then can their frequency be established. Some go directly to city mortuaries and never come to the attention of hospitals — indeed, more than half the deaths in Britain from head injury do not reach hospital. Those people with head injuries who reach hospital wards are treated in many different departments — general surgery, orthopaedic surgery, accident department short stay wards, paediatric wards and the like.

The sources of statistics about head injury are various and they