Birth Injuries of the Newborn

Morphology, Pathogenesis,
Clinical Pathology and Prevention

by

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with a Foreword

by

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100 illustrations, with 25 multi colored figures

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PART I. COMPREHENSIVE SURVEY OF BIRTH INJURIES IN THE NEWBORN 1
Because, nearly forty years ago, I published some researches on the causation of foetal death, with special reference to the stresses and strains
on the foetal head during labour and their effects on the dura mater septa and cerebral veins, Dr. Ph. SCHWARTZ has paid me the great compliment of asking me to write the foreword to this book. I do so with great pleasure tempered, I hope, with due modesty.

Nature has been kind to Man by endowing him with a big brain, enclosed in a plastic case supplied with a device to restrain too rapid and too great change in shape from birth stresses (i.e. the system of dura mater septa). But Nature has not been so kind as to devise a birth canal extensile and elastic enough always to allow an easy passage for the head (I do not include the bony pelvis in this use of the term birth canal). In consequence many heads are subjected to excessive birth stress and suffer therefrom strains that may cause a variety of injuries. It is sometimes overlooked, as the author points out, that moulding of the head is accompanied, far more significantly, by moulding of the brain which, in severe cases, may lead in infants that survive to softening, sclerosis and other permanent brain damage.

The Author and his associates have been working on the subject of birth injuries to the newborn for no less a period than forty years, and the results are embodied in this remarkable and to my mind, exciting book, which describes not only the Author's original work on injuries to the brain itself but also is a mine of information on all kinds of cranial lesions and their extracerebral consequences in the newborn. The thorough survey of the work of others in this field may be seen in the list of 3,000 references to the literature. Thus it is an essential reference book for other workers, be they obstetricians, pediatricians, neurologists, social workers or morbid anatomists. In spite of this great body of knowledge the book is not a ponderous volume; but, by the skilful planning of its contents is a comparatively small one of 236 pages of text, with 100 illustrations. The illustrations are superb, some from photographs, others from original drawings and many of them coloured.

The book is divided into three parts: the Author's text proper, the "Annotations" and the alphabetical list of references. The 175 Annotations, in small print and numbered for reference in the text, occupy 30 per cent of the book's pages and, to me at all events, area novel device. Each deals with a separate subject or group of subjects in precis form with references to the literature and the Author's brief comments or criticisms. They vary in length from two or three lines to two or three pages (e.g. "Asphyxia"). Such a section of Annotations is an ingenious and satisfactory way of relieving the text from detailed discussions of past work and enables the Author to write his text as a smoothly flowing story.

It is pointed out that few subjects in medical literature have been so often
considered as birth injuries. But most publications deal with tentorial tears and meningeal haemorrhage. Dr. SCHWARTZ has gone a stage further; he has removed the brain intact from loon newborn full time or premature foetuses and, after hardening in formalin, has examined it in detail macroand microscopically.

In 1921 he published the first of several papers on cerebral softening processes and haemorrhages in the newborn, and may justly claim to be the first to give the correct description and interpretation of these conditions. He found typical foci of softening macroscopically in 65 per cent of infants who died during birth or before the thirtieth day of life. Never before has the origin of cerebral disease been demonstrated so clearly and convincingly.

His view is that birth injury to the central nervous system is one of the most neglected conditions in human pathology; and that it is not only one of the commonest causes of infant mortality but that, moreover, innumerable human beings suffer from the effects of birth injury. He is convinced that by applying to the newborn the clinical methods—including encephalography and electrocardiography — used in the diagnosis of cerebral disease in adults, fundamental changes might be revealed in the clinical pathology of early life. Many conditions long regarded as being congenital and explained by heredity— such as speech defects, feeble mindedness, spastic conditions, palsies, defects in hearing or vision, deaf-mutism, poor performance at school, and so on — may be connected with some cerebral birth injury.

Although enough is known of the frequency, causes and consequences of head injury, the author is convinced that measures to combat its incidence are long overdue. All mothers should be guaranteed to give birth to undamaged children. In emphasising the birth risks of premature labour he pays tribute to the pioneer work of Professor BAIRD, of Aberdeen, in showing that premature birth has a high incidence where social and economic conditions are poor. Again, as regards the prevention of difficult labour, he recommends the reading of BAIRD'S chapter on Dystocia in "British Obstetric Practice".*

Finally, only a morbid anatomist and pathologist of Dr. ScxwARrz's eminence would have the delightful and logical temerity to write : "It is best to be born at term by cesarean section before the onset of labour." But why not ? It is already being done sporadically. Modern cesarean section with local analgesia has a maternal mortality no greater than that of natural childbirth with its unforeseen complications and, there being no birth injury, the perinatal mortality is much less. And cesarean birth would be a sort of millennium for women: no more relaxed vaginal outlets and
uterovaginal prolapse, goodbye to torn and infected cervixes and cancer of the cervix. And surgical technique marches on and on. So, one day, why not? But my “natural childbirth” conscience pricks me nevertheless.

EARDLEY HOLLAND

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PREFACE

The origin and evolution of a scientific problem is closely linked with the general development of our culture and with the responsiveness of our social conscience. Thus, parturitional lesions of the nervous system in the newborn were recognized as early as t 3 5 years ago and were even then very clearly described. The references, close to 3000 in number, which will be quoted in this book, provide abundant proof of the great scientific interest which this subject has aroused.

A survey of this wealth of material indicates that enough is known of the incidence, causes, and consequences of birth injuries, but that the adoption of measures to combat their occurrence is long overdue.

The author wishes to express his gratitude to Drs Voss, BERBERICH, WIECHERS, STERN, FINK, LEVINSOHN, KOKASCHWELY, CHASKALSON, RADOSLAWOW, CSILLAG, GINTSCHEFF, WALD, Ross, PINHARD, BAER, WEISER, ROLLINGER, ABRAHAM, MANOLOFF, Or~Tz, BUNGELER, WINTER, BRUINER and METZGER, whose co-operation during the years 1920-1930 enabled him to investigate many of the numerous and varied aspects of birth lesions in the newborn. The Josiah Macy Jr Foundation, New York, gave a generous grant, which assisted the author in completing this report.

PH. SCHWARTZ


INTRODUCTION

Few subjects in medical literature have been as frequently considered as parturitional lesions of the newborn. A review of all publications related to this problem reveals both progress and stagnation. Repetitions appear, as well as new ideas. Case studies have been made, as well as comprehensive
surveys of a general nature. Classic knowledge on the subject has been reiterated, yet certain fundamental aspects have often been neglected. Generally accepted facts have been presented along with conclusions open to doubt.

The author, with a number of associates, has spent almost 40 years investigating birth lesions. He intends to outline here the significant stages in the development of this problem, to summarize current knowledge, and to point to directions to be followed in the future.

Innumerable human beings suffer fatal injury at birth. Others survive, but remain seriously disabled throughout their lives. Birth injury to the central nervous system of newborn infants is one of the most frequent and most deleterious of diseases, and perhaps the most neglected condition in human pathology. It is essential that this fact be generally known. Only then can appropriate measures be taken to enable all mothers to give birth to healthy, normal children.

Remarks concerning the technical structure of the present publication

Our problem was to arrange the vast amount of factual and bibliographic material related to parturitional injury of the newborn in a way which facilitates its survey. Thus we summarized comprehensively the main features of our observations in an illustrated section and commented on them in Annotations. These Annotations are intended to widen and deepen statements of the first part.

It was simply impossible to insert the contents of all corresponding papers in the text. In Supplementary References appended to the Annotations, we listed valuable publications which complement our Bibliography and could be of use in future discussions.