Cerebral Visual Disturbance in Infantile Encephalopathy

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Cerebral Visual Disturbance in Infantile Encephalopathy

by

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retrieval system, or transmitted in any form or by any means, mechanical,
photocopying, recording, or otherwise, without the prior written permission of
the publishers,

To my wife, for her unwavering support throughout this study,
to my sons, for their welcome interruptions.

Preface

The diagnosis and treatment of children suffering from infantile encephalopathy is part of daily childneurological practice.

Over the past years, a considerable amount of knowledge has been accumulated on motor and mental handicaps, orthopaedic corrections, rehabilitation, measurements, etc.

Less attention has, however, been paid to the perceptual deficits in children suffering from infantile encephalopathy, e.g. visual and hearing loss.

It is likely that such deficits may have a negative effect on development. As these children are often also mentally retarded, perceptual deficits may be difficult to diagnose. Expanding the available knowledge on these deficits may facilitate their (early) diagnosis.

Assessment of diagnosis enables adaption of developmental stimulation which may ultimately contribute to a higher developmental level.

This study deals with the visual problems of children suffering from infantile encephalopathy. In particular, a study has been made of visual impairment due to dysfunction of the central visual system (from optic chiasm to striate cortex). The childneurological aspects of this handicap were investigated in detail in cooperation with Prof. Dr. J. Willemse (Department of Childneurology, University Hospital Utrecht, The Netherlands), resulting in an identifiable clinical picture.

The application of neuro-imaging techniques (computer tomography, magnetic resonance imaging) enables the assessment of characteristic morphological abnormalities of the central visual system.

The light sensitivity of the central visual system was investigated by flash-visually evoked potentials and an estimation of visual acuity was obtained by pattern-visually evoked potentials. These techniques were performed under the supervision of Prof. Dr. H. Spekreyse of the Inter-University Ophthalmological Institute, Amsterdam, The Netherlands.

The relationship between dysfunction of the central visual system and abnormalities demonstrated by optokinetic nystagmography was studied under the guidance of Dr. J. van Hof-van Duin, Department of Physiology I, Erasmus University, Rotterdam, The Netherlands.

VIII

The author wishes to express his gratitude to the experts mentioned above for their help in the fulfilment of this study.

The author is also indebted to the Bartiméus Foundation at Doorn, The Netherlands for the all-round support.

May the results of this study contribute to improving the opportunities for children suffering from infantile encephalopathy.

O. van Nieuwenhuizen

Contents

PREFACE	VII
ACKNOWLEDGEMENTS	XIII
CHAPTER I INTRODUCTION	1
A. General introduction	1
1. Anatomy and physiology	1
2. Definition	4
3. History	4
4. Aetiology	4
5. Incidence	6
B. Role of infantile encephalopathy in CVD	7
1. Definition and incidence	7
2. Visual impairment in infantile encephalopathy	8
3. Consequences of visual impairment for the child's development	9
4. Hypoxic-ischemic lesions as a cause of I.E.	11
5. Reports of diagnostic techniques in CVD as part of I.E.	17
6. Questions to be answered	30
CHAPTER II METHODS	33
1. Neurological examination	33
2. Ophthalmological examination	34
3. Neuroradiological examination	38
a. CT-scanning of the head	38
b. MRI-scanning of the head	38
4. Electrophysiological examination	39
a. Optokinetic nystagmography	39
b. Visual evoked potentials	40

CHAPTER III	PATIENT DATA	43
A.	Introduction	43
B.	Explanation of terminology	44
C.	Individual patient data	47
CHAPTER IV	RESULTS OF THE NEUROLOGICAL AND OPHTHALMOLOGICAL EXAMINATIONS	101
CHAPTER V	RESULTS OF THE NEURORADIOLOGICAL EXAMINATION	107
A.	Results of computed tomography	107
1.	Introduction	107
2.	Qualitative assessment	107
3.	Quantitative assessment	110
4.	Conclusions	113
B.	Results of magnetic resonance imaging	114
1.	Introduction	114
2.	Assessment	114
3.	Conclusions	114
CHAPTER VI	RESULTS OF VISUAL EVOKED POTENTIALS	115
A.	Flash-VEP	115
1.	Features of the normal flash-VEP	115
2.	Results of flash-VEPs in the patient group	120
3.	Conclusions of the examination of flash-VEPs	125
B.	Pattern-VEP	126
1.	Features of the normal pattern-VEP	126
2.	Results of pattern-VEPs in the patient group	126
CHAPTER VII	RESULTS OF OPTOKINETIC NYSTAGMO- GRAPHY (OKN)	129
A.	Introduction	129
B.	Features of the normal OKN	129
C.	OKN in the patient group	130
1.	Binocular examination	131
2.	Monocular examination	132
3.	Conclusions	134
D.	OKN-registrations	135

CHAPTER VIII	DISCUSSION	163
A.	Introduction	163
B.	Patient group	163
1.	Neurological examination	163
2.	Ophthalmological examination	166
3.	'Continuum'-hypothesis	171
4.	Neuro-imaging and CVD	173
5.	The role of VEPs in the study	180
6.	The contribution of OKN to the CVD-concept	183
SUMMARY		191
FLOW CHART	A practical guide for the examination of children who may suffer from CVD	195
REFERENCES		197

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The cooperation with Dr. van Hof-van Duin was very stimulating. I retain pleasant memories of our – sometimes heated – discussions.

My parents were responsible for many aspects of my ‘medical education’. Also, I recall with much pleasure the wisdom of Professor Kemp, my instructor.

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The participation of the children and their parents in this study made a great impression on me. Their enormous interest sustained me.

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XIV

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Memories of the debates at the 'Friday afternoon Club', to which Jaap Troost made such a brilliant contribution, are also very dear to me.

The author wishes to express his gratitude to all those who contributed to this mammoth study.
(Photograph made by the author in the Zoo of Besançon, France)