ELSEVIER

Brain & Development 27 (2005) 3–4

BRAIN & DEVELOPMENT
Official Journal of the Japanese Society of Child Neurology

www.elsevier.com/locate/braindev

Founders

Founders of child neurology in Japan—Kihei Maekawa

Kihei Maekawa, an emeritus professor at Jikei University and an honorable member of the Japanese Society of Child Neurology (JSCN), was born in Tokyo in 1933. He graduated from Jikei University, the oldest private medical school in Japan, and obtained his PhD in 1964 for studies on immunoelectrophoreisis of cerebrospinal fluid in neurological disorders of children. In 1965, he went to Wisconsin in the USA to study inborn errors of metabolism, especially PKU. After 2 years of fruitful work as a research fellow in the Kennedy Laboratory of Wisconsin University, he moved to New York and worked as a clinical fellow in the Division of Child Neurology, Department of Neurology of Columbia Presbyterian Hospital, under the supervision of Professor Sidney Cater.

After returning from the USA, he began to concentrate his studies on the neurological examination of children.

In 1978, he published a book on the neurological examination of infants, 'A method of neurological examination for public health screening of infants guided by photographs', which is extraordinarily famous in Japan among not only pediatric neurologists but also general pediatricians. In the preface of the 1st edition, he wrote: "I really become interested in developmental aspects of children when I began to work in the Saitama Child Health Care Center (SCHCC) 10 years ago. Until then, I had intended to be a pediatric neurologist who diagnoses neurological foci with a medical hammer in hand. But the experience in the SCHSS taught me what little knowledge I had on the neurodevelopment of children, I took more than 10,000 photographs during neurological examinations, while following up neurologically abnormal or borderline infants and children".

After the World War II, Japanese government started a public health screening system for infants and young children. It was recommended that caretakers to take children to nearby regional public health centers (PHC) at the ages of 3, 6, 18 and 36 months. In the PHC, a physician and health care personnel evaluate the growth and development of the infants and give advice to the caretakers. At first, this screening system was intended to improve the poor growth of infants and children and to prevent infections, such as tuberculosis. With the marked economic growth of Japan and the reduction in the infant death rate, however, more attention became paid to the early detection of several disorders, such as malignant neoplasm and cerebral palsy. The 1970s also saw enthusiasm for the early diagnosis of cerebral palsy, but most books on this subject, such as Vojta's and Bobbath's, were too specialized and a bit eccentric. Many pediatricians, including pediatric neurologists, were seeking more appropriate textbooks. Dr Maekawa's book quenched this thirsty and became a bible for the neurodevelopment screening of infants in Japan. Much concern and knowledge on neurodevelopment seen in Japan today among pediatricians, including general practitioners, can be partly ascribed to this book. It has continually revised and the 6th edition was eventually published in 2003.

His clinical studies on developmental neurology have been as follows: In order to investigate flexor hypertonia of the extremities in newborns, neurological examination and superficial EMG recordings were carried out for 50

0387-7604/$ - see front matter
doi:10.1016/j.braindev.2004.07.004

full-term infants both before and after the first 48 h of life. The EMG amplitude on the flexor side of the upper arm in both the traction response and recoil of the forearm was low during the first 48 h despite flexion of the elbow (hypertonia). After the first 48 h EMG amplitude increased in a large percentage of the infants although elbow flexion decreased (hypotonia). The popliteal angle was more than 90 degrees in 27 infants and less than 90 degrees in 23 during the first 48 h: after this period the angle was more than 90 degrees in 11 infants and less than 90 degrees in 39. The EMG amplitude on the flexor side of the thigh in most cases increased after the first 48 h in both infant groups; those with an angle of more than 90 degrees and those with an angle of less than 90 degrees. It was suggested that flexor hypertonia of the extremities in newborn infants was not a result of muscle contraction, but rather resulted from the infants position in utero (Dev Med Child Neurol 1975; 17: 440).

The developmental changes of the sucking response to taste in infants also were examined. Seventy-one full-term normal newborns were studied at the age of 5–7 days. A 0.1% tartrate or 0.25% saline solution was given to each infant after 1–2 min. of breast or bottle feeding and the same solution was given to the same subject once more. The sucking rhythm was recorded, and their behavioral reactions were observed by examiners and analyzed on videotape. Infants showed similar responses to the tartaric acid and saline solutions, when given on two different occasions, respectively. But generally they reacted more strongly to the saline than the tartrate solution. The sucking response to taste was studied in 20 infants once a month from birth until 5 months of age. All 5 brain damaged infants and 13 normal infants showed a decrease of the reaction between 1 and 5 months, mostly between 3 and 5 months. The sucking response to taste in the newborn was assumed to be a subcortical reflex and not recognized as a cortical reflex (Biol Neonat 1991; 60: 62).

Later research was on the development of the upright postural sway of children; 1188 children (576 boys and 612 girls, 3 to 11 years old) were studied using a Stasio-analyser to clarify the developmental changes of the upright postural sway (Dev Med Child Neurol 1995; 87: 985).

He also trained many excellent pediatricians, as Chairman and Professor of Pediatrics of Jikei University from 1980 to 1999. In addition, he has made great contributions to the JCNS. He has been the president of the annual congress of the JSCN once in 1970 in Saitama and again in 1987 in Tokyo. Furthermore, as the chairman the Ad Hoc Committee of the JSCN in efforts to join the Japanese Medical Association (JMA), he succeeded in making the JCN a member of the JMA and proved that JCN is a high rank medical society in Japan.

Kihei Maekawa[a], Kosaburou Aso[b], Kenji Nihei[c,d,*]
[a]*Department of Liberal Art and Human Development, University of Human Service, 1-10-1 Heiseicho, Yokosuka, Kanagawa 238-0013, Japan*
[b]*Aichi Aoitori Institute for Disabled, 5-89 Nakaotai Nishi-ku, Nagoya Aichi 452-0822, Japan*
[c]*Department of Neurology, National Center for Child Health and Development, 2-10-1 Okura, Setagaya-ku, Tokyo 157-8535, Japan*
[d]*Archives Committee, Japanese Society of Child Neurology, Japan*
E-mail address. tiger283@sepia.ocn.ne.jp

*Corresponding author.