

## 4th Congress of Asian-Australasian Society for Pediatric Neurosurgery (AASPN2023)

**Dec. 14, Room A**

**Special lecture 2**

### **Folate supplementation in Japan and AASPN countries**

Shunsuke Ichi

Japanese Red Cross Medical Center

Dec. 14, Room C

**Educational session 2: From basic to advanced management—  
neurosurgical management of spina bifida**



## **Impact of the new classification of spinal lipoma**

Mihoko Kato, MD, Ph.D., Tomoki Nawashiro, MD, Masamune Nagakura MD,  
Michihiro Kurimoto MD, Ph.D.

Department of Neurosurgery, Aichi Children's Health and Medical Center

Spinal conus lipomas have been classified in various ways over the years. The classification currently in use is based on the Chapman classification, which is a morphological classification based on surgical findings. With the widespread use of MRI, Arai and colleagues added LMMC (lipomyelomeningocele) and filar lipomas to this classification. Subsequently, a classification that incorporated embryological elements into the morphological classification was proposed by Pang and others. In 2017, Morota and colleagues introduced a new classification based on embryology. This was driven by the gradually emerging insights into neurulation.

In the case of congenital conditions, understanding their etiology and basing treatment on that understanding is a reasonable strategy. In this sense, the significance of the Morota classification is substantial. In our institution, we have previously used the Chapman classification to investigate whether there is a correlation between lipoma type and the need for orthopedic lower extremity orthosis. At the start of school age, there was no correlation with lipoma type, as all lipoma types required orthopedic lower extremity orthosis. However, at the end of school age, there was a trend of orthopedic lower extremity orthosis requirement for LMMC and transitional types. On the other hand, when the classification was changed to the Morota classification and a similar investigation was conducted, all cases that required orthopedic lower extremity orthosis at both the start and end of school age were classified as Morota Type 2, suggesting that this classification is excellent for predicting functional outcomes. This trend was also confirmed in terms of the need for clean intermittent self-catheterization (CISC), indicating that the Morota classification allows for more accurate prognosis prediction in terms of urinary function. This fact is believed to have a significant impact on future treatment decisions. Surgical strategies using the Morota classification should be considered.

Furthermore, there is still ongoing debate about the natural course of the condition, and the evaluation using the Morota classification is necessary. For example, although radical resection is recommended for Type 1, there are reports that the neurological prognosis is not bad even with conservative follow-up, and there is reluctance to perform prophylactic surgery. Using the Morota classification, which is based on embryological causes, to predict the natural history may help determine the necessity of surgery.

Additionally, considering the embryological basis, Type 1, which is primarily a primary neurulation failure, may have a preventive effect similar to folic acid as seen in MMC cases. Therefore, we await reports on changes in the number of Type 1 cases in regions that have dramatically reduced MMC incidence through folic acid supplementation.

## 4th Congress of Asian-Australasian Society for Pediatric Neurosurgery (AASPN2023)

### **Educational Background**

Fujita Health University Faculty of Medicine 1993.03 Graduated  
Nagoya University Graduate School of Medicine 2002.03 Graduated  
Great Ormond Street Hospital, Neurosurgery 2007.02-03

### **Work History**

Nagoya Daini Red Cross Hospital, Neurosurgery 1993.04-1997.01  
Nagoya Ekisaikai Hospital, Neurosurgery 1997.02-1998.03  
Gifu Social Insurance Hospital, Neurosurgery 2002.04-2004.03  
Aichi Prefectural Colony Central Hospital, Neurosurgery 2004.04-2010.03  
Aichi Children's Health Care Center, Neurosurgery 2010.04-Present  
(2014.04- Chief of Neurosurgery)(2021.04- Director of Health Center)

### **Qualifications**

Medical License (1993)  
Board Certification in Neurosurgery (1999)  
Board Certification in Neuroendoscopy  
Board Certification in Pediatric Neurosurgery (2017)  
Certified in Clinical Ethics, Japanese Society of Clinical Ethics (2016)

### **Registered societies**

Japan Neurosurgical Society  
Japanese Congress of Neurosurgery  
Japanese Society of Pediatric Neurosurgery (Director)  
Japanese Society for Hydrocephalus and CSF Disorders (Director)  
Japanese Society of Child Abuse Medicine (Councilor)  
Japanese Association of Neurosurgeons for Children's Hospital (Board member)  
Japanese Society for the Study of Craniosynostosis (Board member)  
Japanese Society for Spina Bifida Research (Board member)  
International Society for Pediatric Neurosurgery (Active member) etc.

### **Academic positions**

Clinical Associate Professor, Nagoya University  
Visiting Professor, Aichi Medical University

Dec. 14, Room C

**Educational session 3: From basic to advanced management—  
Pediatric epilepsy**



## **Pediatric epilepsy surgery in Japan**

Masaki Iwasaki, MD, PhD

Department of Neurosurgery, National Center of Neurology and Psychiatry, Kodaira, Tokyo, Japan

Pediatric epilepsy surgery differs from adult epilepsy surgery in terms of the etiology of epilepsy and surgical procedures. Malformation of cortical development and low-grade tumors are the most common etiology in the pediatric candidates for epilepsy surgery. Radical procedures such as hemispherotomy and multilobar disconnection are more common in pediatric epilepsy surgery than in adults. The goal of epilepsy surgery is to control seizures and thereby to improve children's development. Thus, the prompt surgical indication is important in children with drug-resistant epilepsy with a focal epileptogenic lesion. Focal lesions may cause generalized seizures and/or generalized epileptiform discharges in young children. The presence of generalized or diffuse findings does not always omit surgical indication.

The number of epilepsy surgeries per population in Japan is less than half that of the United States, and hence surgical treatment of epilepsy is likely underutilized for pediatric population. In Japan, most pediatric epilepsy surgeries are performed by functional neurosurgeons, especially by those specialized for epilepsy surgery; pediatric neurosurgeons do not typically perform epilepsy surgery. Japanese "epilepsy surgeons" operate without much regard to the age of the patient, but the decision to perform surgery on infants depends on the surgeon's experience and proficiency. Epilepsy surgery in infants and young children is thought to be practiced in a limited number of epilepsy centers.

Some pediatric neurologists lack experience in determining the indications for epilepsy surgery, resulting in fewer patient referrals. This is partly due to the fact that neurosurgeons are often responsible for surgical indication in Japan.

Stereoelectroencephalography (SEEG) is increasingly used for pre-surgical evaluation of epilepsy after the introduction of stereotactic robotic system in 2020. This has led to increased interest in stereotactic ablation surgery. Stereotactic radio-frequency thermocoagulation is used to treat deep-seated epileptogenic lesion such as insular focal cortical dysplasia and hypothalamic hamartoma. However, laser interstitial thermal therapy (LITT) is not yet available in Japan. Stereotactic surgery is less invasive and preferable for pediatric patients.

Vagus nerve stimulation and deep brain stimulation are approved in Japan for the treatment of epilepsy without age restriction. However, corpus callosotomy is often the preferred palliative treatment of choice for severe generalized or multifocal epilepsy.

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### Current Appointments:

Director, Department of Neurosurgery, National Center Hospital, National Center of Neurology and Psychiatry, Tokyo, Japan  
Visiting Professor, Department of Neurosurgery, Tohoku University School of Medicine  
Visiting professor, Department of Neurosurgery, Yokohama City University School of Medicine

### Education and Professional experience:

M.D., 1997 Tohoku University School of Medicine, Sendai, 1991-1997  
1997-1999 Residency, Tohoku University School of Medicine, Sendai, Kohnan Hospital, Sendai, Aomori Prefectural Hospital, Aomori  
1999-2001 Research staff, MEG laboratory, Kohnan Hospital, Sendai  
Ph.D., 2001 Tohoku University School of Medicine, Sendai, 1998-2001  
2001-2004 Research Fellowship, Epilepsy and Clinical Neurophysiology, Department of Neurology, Cleveland Clinic Foundation  
2006-2009 Neurosurgery staff, Kohnan Hospital, Sendai  
2009-2014 Assistant Professor, Department of Neurosurgery, Tohoku University School of Medicine  
2014-2016 Associate professor, Department of Neurosurgery, Tohoku University School of Medicine  
2016-present Director, Department of Neurosurgery, National Center Hospital of Neurology and Psychiatry, Tokyo, Japan  
2017-present Visiting professor, Department of Neurosurgery, Tohoku University School of Medicine  
2019-present Visiting professor, Department of Neurosurgery, Yokohama City University School of Medicine

## 4th Congress of Asian-Australasian Society for Pediatric Neurosurgery (AASPN2023)

**Dec. 14, Room A**

**Meet experts 1 (Luncheon seminar): Epilepsy management in Tuber Sclerosis Complex**

### **mTOR inhibitor, VNS and open cranial surgery**

Ayataka Fujimoto

Comprehensive Epilepsy Center, Seirei Hamamatsu General Hospital

Dec. 14, Room A

Meet experts 1 (Luncheon seminar): Epilepsy management in Tuber Sclerosis Complex



## Clinical practice guidelines for TSC-associated SEGA by the Japanese Society for Neuro-Oncology

Tomotsugu Ichikawa

Department of Neurosurgery, Kagawa Prefectural Central Hospital

Subependymal giant cell astrocytoma (SEGA) is a benign brain tumor occurring specifically in tuberous sclerosis complex (TSC) patients. SEGA usually arises around the caudothalamic groove near the foramen of Monro, and thus can cause life threatening complications such as acute obstructive hydrocephalus. SEGA develops due to complete loss of a function of TSC1/TSC2 complex through a two-hit mechanism of biallelic inactivation of *TSC1* or *TSC2* gene, leading to activation of the mammalian target of rapamycin (mTOR). Until recently, surgical resection has been the standard therapy for SEGAs but the introduction of mTOR inhibitors to clinical practice changed the therapeutic landscape of these tumors.

The present guidelines were prepared by the Japanese Society for Neuro-Oncology in accordance with the "Guidance for preparing treatment guidelines" published by Minds (2014 version). SEGA requires well-considered decisions regarding the clinical condition and modality of treatment. Clinical conditions were divided into four groups; (1) acutely symptomatic, (2) non-acute symptomatic, (3) asymptomatic (growing), (4) asymptomatic (non-growing). Clinical questions according treatment options such as surgical, pharmacological, and radiological treatment were prepared for each clinical condition. In summary, individuals with SEGA presenting with acute deterioration due to obstructive hydrocephalus should undergo urgent surgical treatment. The mTOR inhibitors treatment is primarily recommended for individuals with non-acute symptomatic or asymptomatic growing or large SEGAs, and those who are not surgical candidates or prefer medical treatment over surgery.

The surgical risks, potential side effects of mTOR inhibitors, and effect on other TSC manifestations should be considered to select the best treatment option. We hope that the guidelines will provide guiding principles for the treatment of TSC-associated SEGA to many clinicians.

### EDUCATION:

1990 Kanazawa University Medical School  
2001 Okayama University Doctor of Philosophy No 3563

### FELLOWSHIP:

1997/November - 2000/September, Molecular NeuroOncology Laboratory, Massachusetts General Hospital

### LICENSURE and CERTIFICATION:

National Board of Medicine, Registration No. 337117  
Japanese Board of Neurosurgery No. 5394  
Japanese Board of Cancer Therapy No.10100265

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### **MEMBERSHIPS:**

The Japan Neurosurgical Society  
The Japanese Congress of Neurological Surgeons  
The Japan Society for Neuro-Oncology  
Japanese Society for Pediatric Neurosurgery  
The Japanese Congress for Brain Tumor Surgery  
The Japanese Society of Tuberos Sclerosis Complex

### **HONORS and AWARDS:**

Young investigator award of 1<sup>st</sup> meeting of American Society of Gene Therapy (1998)  
Hospital director award of Okayama University hospital (2015)  
Kawabuchi Award of Japanese Society for Pediatric Neurosurgery (2017)  
Hospital Bureau Award of Kagawa Prefectural Central Hospital (2020)



## 4th Congress of Asian-Australasian Society for Pediatric Neurosurgery (AASPN2023)

**Dec. 14, Room C**

**Meet experts 2 (Luncheon seminar): Intravascular surgery in pediatric CNS lesions**

### **Management of Vein of Galen Aneurysm**

Yuo Iizuka

Kashiwa Tanaka Hospital

Dec. 14, Room A

Symposium 4: Neurosurgical management of intracranial cystic lesions

**What is the best practice? Endoscopic or microsurgery or shunt?**

Jun Kurihara

Department of Neurosurgery, Saitama Children's Medical Center

**Dec. 14, Room A**

**Symposium 6: Non-accidental head injury in children**

**Minor head trauma and acute subdural hemorrhage (SDH) in relation with non-AHI in children**

**Nobuyuki Akutsu**

Hyogo Prefectural Kobe Children's Hospital



Many studies have reported that acute subdural hematoma (ASDH) in infants is characteristic of abusive head trauma (AHT). However, it is difficult to diagnose AHT based on radiological imaging alone. In Japan, it has been reported since the 1960s that ASDH can also be caused by minor head trauma in infants. It usually occurs in infants between 6 and 10 months of age when they fall back while standing and bruise the back of their head. However, these reports have been criticized for not being fully investigated for child abuse. In recent years, there have been similar reports of ASDH in infants due to accidental minor head trauma from other countries. In particular, the presence of ASDH from minor head trauma, such as falling from a height of about 90 cm (3 ft) is becoming accepted. ASDH caused by AHT is often associated with rotational acceleration/deceleration force and blunt impact. However, the type and threshold of impact able to cause tearing of the bridging veins remain unclear. In rare cases, a bruise on the back of the head caused by short falls may also cause ASDH. AHT should not be underdiagnosed. However, it is true that it is not so easy to clearly distinguish between AHT and non-AHT cases.

**EDUCATION:**

Kobe University Graduate School of Medicine: Hyogo, Japan (2007–2012)

PhD, Dept. of Neurosurgery

Kobe University School of Medicine: Hyogo, Japan (1996–2002)

Doctor of Medicine (MD)

**WORK EXPERIENCE**

Apr 2014–Present: Dept. of Neurosurgery, Hyogo Prefectural Kobe Children's Hospital

Oct 2012–March 2014: Dept. of Neurosurgery, Kobe University Hospital

Oct 2011–Sep 2012: Dept. of Neurosurgery, Nishiwaki Municipal Hospital

Jul 2010–Sep 2011: Dept. of Neurosurgery, Hyogo Prefectural Kakogawa Medical Center

Apr 2007–Jun 2010: Dept. of Neurosurgery, Kobe University Hospital

Apr 2006–Mar 2007: Dept. of Neurosurgery, Nishiwaki Municipal Hospital

Apr 2005–Mar 2006: Dept. of Neurosurgery, Kobe City Nishi-Kobe Medical Center

Jun 2004–Mar 2005: Dept. of Neurosurgery, Shizuoka Children's Hospital

Jun 2003–May 2004: Dept. of Neurosurgery, Yodogawa Cristian Hospital

Jun 2002–May 2003: Dept. of Neurosurgery, Kobe University Hospital

Nov 2019: Traveling fellow ship in Pediatric Neurosurgery at Seoul National University Children's Hospital

## 4th Congress of Asian-Australasian Society for Pediatric Neurosurgery (AASPN2023)

**Dec. 14, Room A**

**Symposium 6: Non-accidental head injury in children**

### **What is Nakamura type 1 infantile acute SDH?**

Young-Soo Park

Department of Neurosurgery and Children's Medical Center, Nara Medical University

