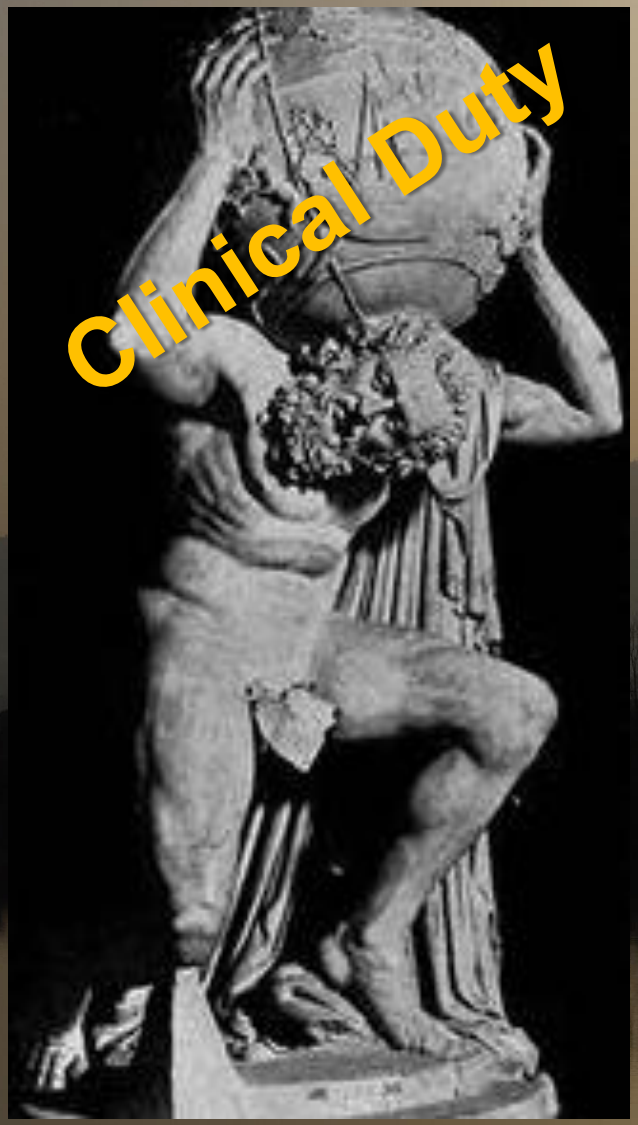
Neuroradiology in Japan

Toshiaki Taoka
Nara Medical University

Four seasons of Japanese Neuroradiologist

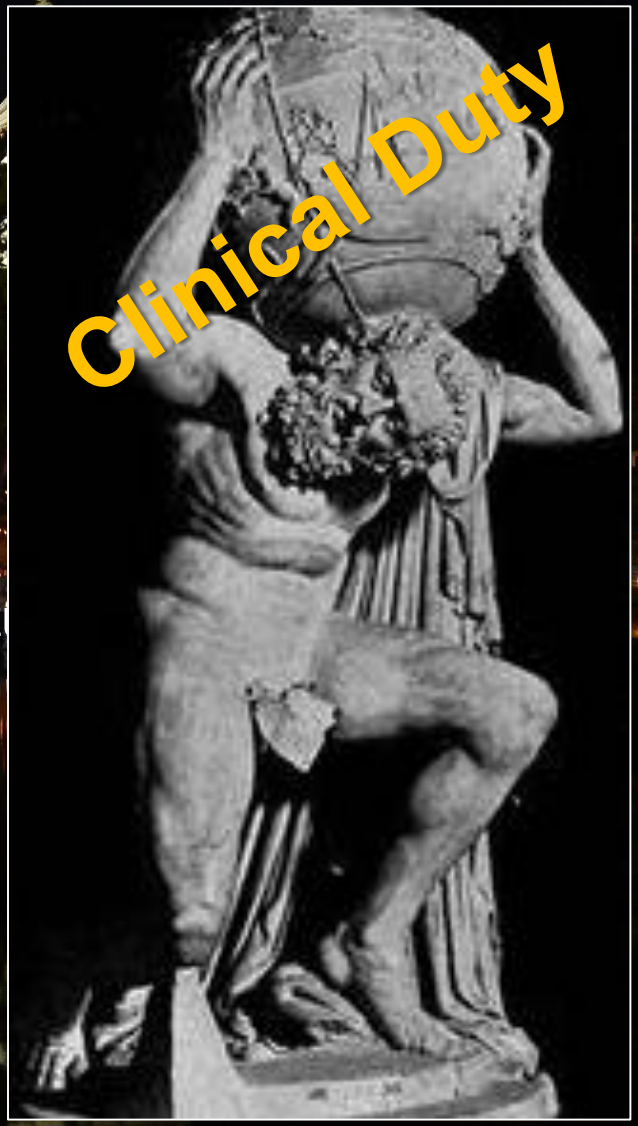
- Spring
  - March
    - Prepare for JRS congress
    - Prepare for NRWS
    - Prepare for RSNA abstract
  - April
    - JRS congress in Yokohama
  - May
    - ASNR
    - ISMRM



春はあけぼの：Enjoy dawn in the spring. by Sei-Syonagon

Four seasons of Japanese Neuroradiologist

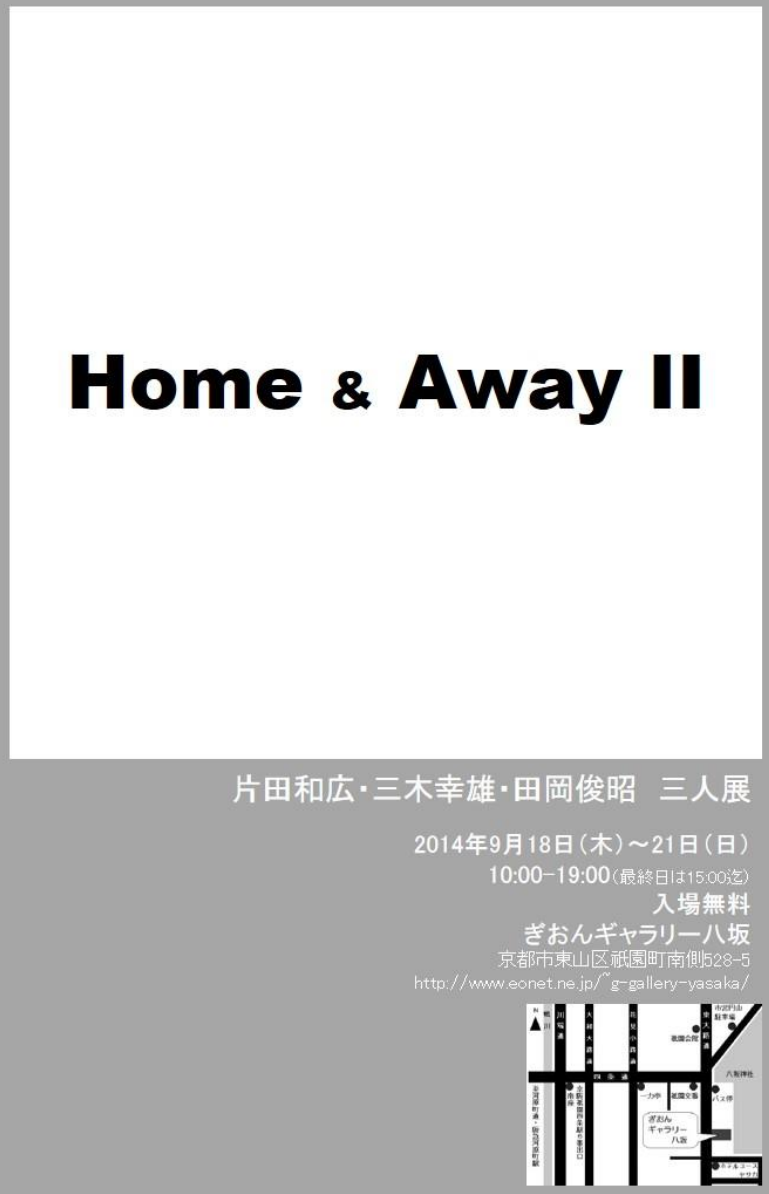
- Summer
  - June
    - **NRWS!!!**
  - July
    - Small meetings
    - Chance to write manuscript
    - Chance to make scientific study for aut
  - August
    - Vacation !?



夏は夜：Enjoy evening in the summer. by Sei-Syonagon

Four seasons of Japanese Neuroradiologist

- Autumn
  - September
    - Congress of JSMRM
  - October
    - Clinical congress of JRS
    - Have to decide which one ASNR, and apply abstract.
  - November
    - Prepare for RSNA
    - Go to Chicago for RSNA



秋は夕暮れ：Enjoy sunset in the autumn. by Sei-Syonagon

Four seasons of Japanese Neu

- Winter
  - December
    - Return from RSNA
    - Chance to write manuscript
    - Chance to make scientific study for season
  - January
    - Chance to write manuscript
    - Chance to make scientific study for season
  - February
    - Congress of Japanese Society of Neuroradiology

冬はつとめて：Enjoy early morning in the winter. by Sei-Syonagon

The Japanese Society of Neuroradiology

- Established in 1959 as a research society (研究会）
- Renamed in 1999 as “The Japanese Society of Neuroradiology”
- Member
  - Total 734
  - Regular member 597
  - Associate member 137
  - Honorary member 26
  - Board member 57
  - Administration committee 11

The Japanese Society of Neuroradiology

- Established in 1959 as a research society (研究会）
- Renamed in 1999 as “The Japanese Society of Neuroradiology”
- Member
  - Total 734
  - Radiologist 434 （59%）
  - Neurosurgeon 241 （33%）
  - Neurologist 26 （4%）
  - Others 33 （4%）

The Japanese Society of Neuroradiology

- Kato Prize
  - Last Professor Toshio Kato (Dept of Radiology, Keio-Gijuku University), who established the Japanese Society of Neuroradiology, had founded a fund for encouraging ***young investigator*** in the field of Neuroradiology at his own expense.

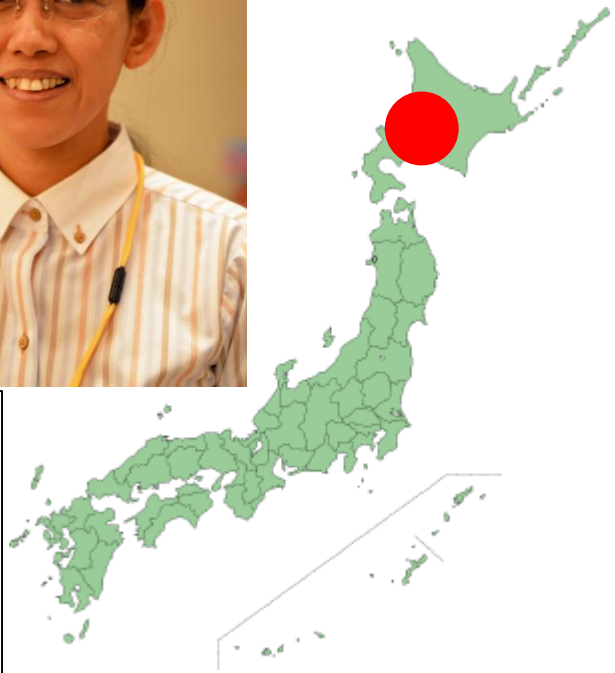
The Japanese Society of Neuroradiology

- Kato Prize Winner
  - 1979 Katsuya Goto
  - 1981 Syoki Takahashi
  - 1982 Katsuya Goto
  - 1984 Hajime Takeshita
    Shizuka Ooi
  - 1987 Ichiro Fujisawa
  - 1988 Kazumasa Takemoto
  - 1990 Yasuyuki Yamashita
    Yukio Miki
  - 1991 Satoru Iwasaki
    Yuji Sakamoto
  - 1994 Akira Yagishita
    Yukunori Korogi
  - 1996 Noriko Aida
  - 1997 Hidetsuna Utsunomiya
  - 1998 Hiroyuki Nakagawa
  - 2003 Yoshimasa Kinoshita
  - 2004 Kosuke Kudo
  - 2005 Eiji Matsusue
  - 2006 Toshifumi Kinoshita
  - 2007 Toshiaki Taoka
  - 2008 Shinya Fujii
  - 2009 Morito Hayasi
  - 2010 Takashi Yoshiura
  - 2011 Khin Khin Tha
  - 2012 Shingo Kakeda
  - 2013 Koji Kamagata

“Rising suns”: U-40 NR researchers

“Rising suns”: U-40 NR researchers

- Dr. Khin Khin Tha
  - Hokkaido University
  - Diffusion tensor
  - **Kato Prize Winner**



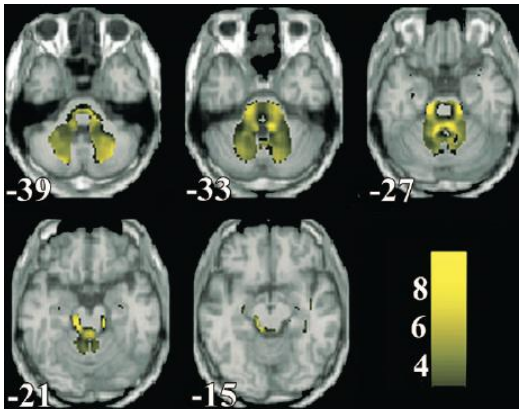
Radiology

Microstructural White Matter Abnormalities of Multiple System Atrophy: In Vivo Topographic Illustration by Using Diffusion-Tensor MR Imaging[1]

Khin K. Tha, MBBS, PhD
Satoshi Terae, MD, PhD
Ichiro Yabe, MD, PhD
Tamaki Miyamoto, MD, PhD
Hiroyuki Soma, MD
Yuri Zaitsu, MD
Noriyuki Fujima, MD
Kohsuke Kudo, MD, PhD
Hidenao Sasaki, MD, PhD
Hiroki Shirato, MD, PhD

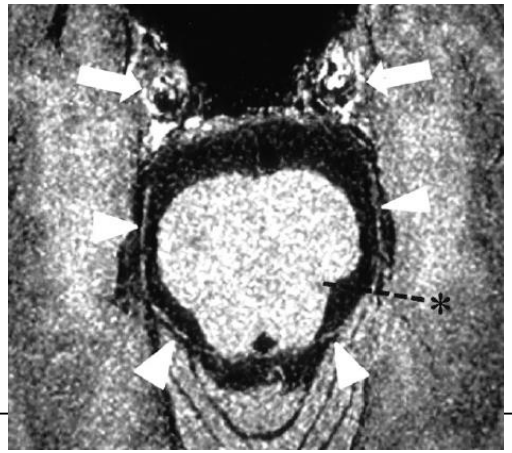
Purpose: To determine whether diffusion-tensor (DT) imaging c
demonstrate microstructural white matter abnormalit
of multiple system atrophy (MSA) and to correlate th
imaging findings with clinical signs and symptoms.

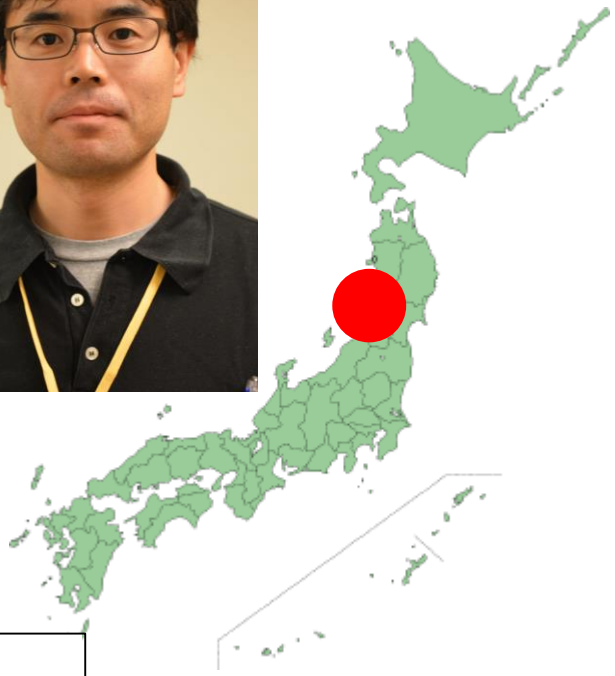
Materials and Methods: Institutional review board approval and written inform
consent were obtained. DT imaging was performed in
patients with MSA with predominant cerebellar syn
toms (MSA-C) (mean age, 60.0 years ± 5.1 [standa
deviation]; range, 51–69 years) and 16 age-matcl
healthy subjects. Fractional anisotropy (FA) and mean



“Rising suns”: U-40 NR researchers

- Dr. Masafumi Kanoto
  - Yamagata Univ.
  - High resolution TSE-MSDE





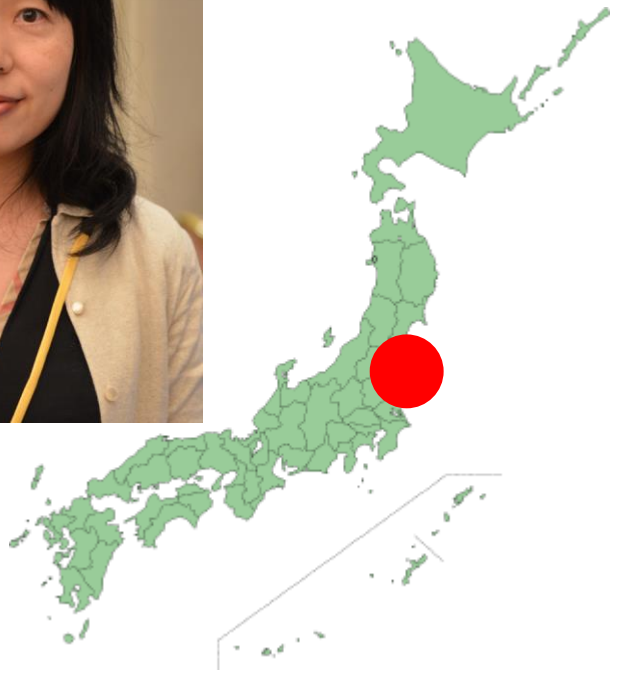
ORIGINAL RESEARCH
HEAD & NECK

Visualization of the Trochlear Nerve in the Cistern with Use of High-Resolution Turbo Spin-Echo Multisection Motion-Sensitized Driven Equilibrium

M. Kanoto, Y. Toyoguchi, T. Hosoya, A. Oda, and Y. Sugai

“Rising suns”: U-40 NR researchers

- Dr. Yumiko Kato
  - Tohoku University
  - Detection of metastasis



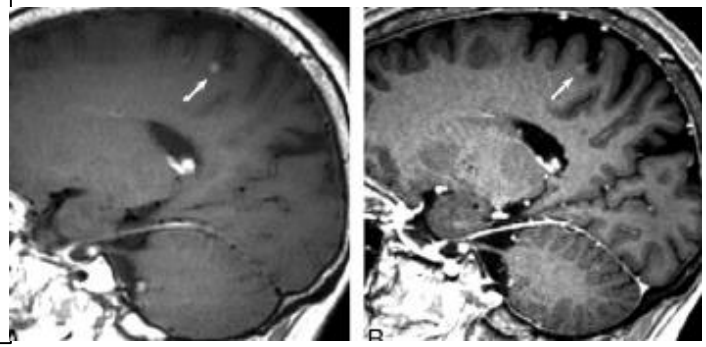
ORIGINAL RESEARCH

Y. Kato
S. Higano
H. Tamura
S. Mugikura
A. Umetsu
T. Murata
S. Takahashi

Usefulness of Contrast-Enhanced T1-Weighted Sampling Perfection with Application-Optimized Contrasts by Using Different Flip Angle Evolutions in Detection of Small Brain Metastasis at 3T MR Imaging: Comparison with Magnetization-Prepared Rapid Acquisition of Gradient Echo Imaging

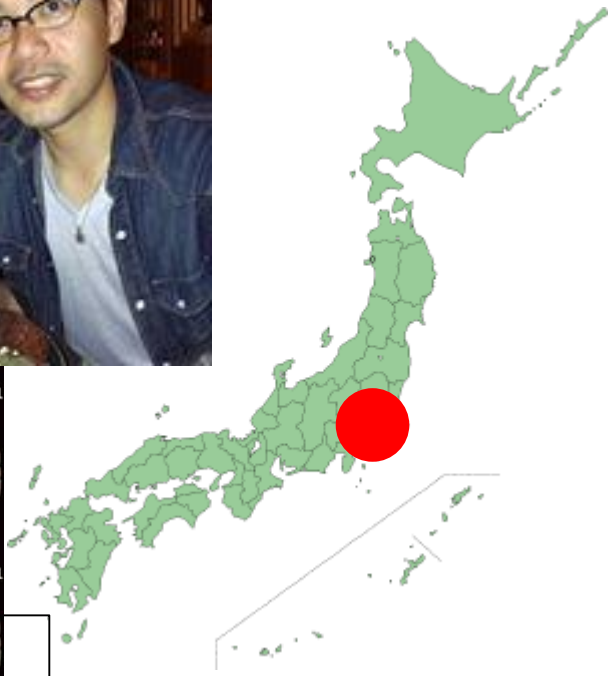
BACKGROUND AND PURPOSE: Early accurate diagnosis of brain metastases is crucial for a patient’s prognosis. This study aimed to compare the conspicuity and detectability of small brain metastases between contrast-enhanced 3D fast spin-echo (sampling perfection with application-optimized contrasts by using different flip angle evolutions [SPACE]) and 3D gradient-echo (GE) T1-weighted (magnetization-prepared rapid acquisition of GE [MPRAGE]) images at 3T.

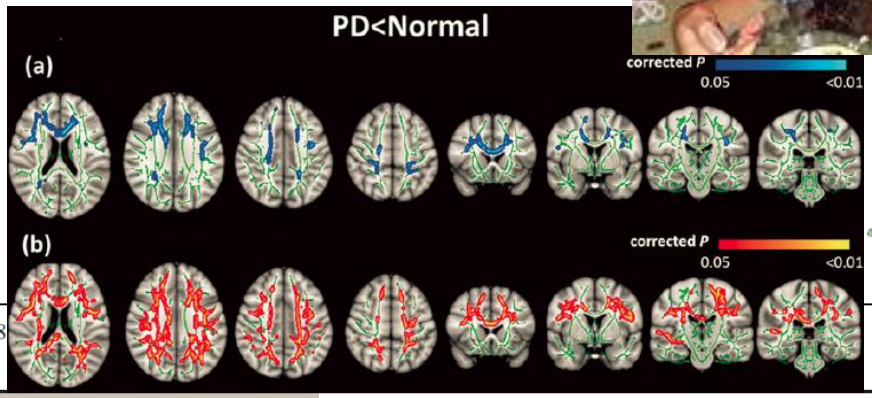
MATERIALS AND METHODS: Sixty-nine consecutive patients with suspected brain metastases were evaluated prospectively by using SPACE and MPRAGE on a 3T MR imaging system. After careful evaluation by 2 experienced neuroradiologists, 92 lesions from 16 patients were selected as brain metastases. We compared the shorter diameter, contrast rate (CR), and contrast-to-noise ratio (CNR)



“Rising suns”: U-40 NR researchers

- Dr. Koji Kamagata
  - Juntendo University
  - Non-Gaussian diffusion
  - **Kato Prize Winner**





Neuroradiology (2014) 56:251–258
DOI 10.1007/s00234-014-1327-1

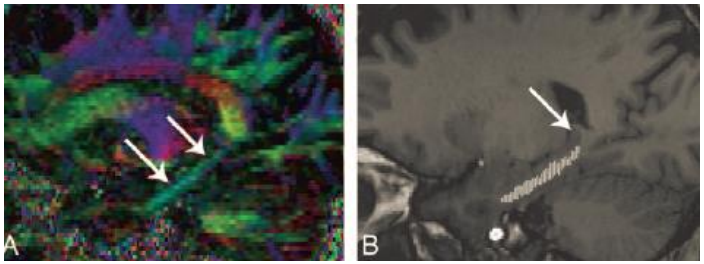
FUNCTIONAL NEURORADIOLOGY

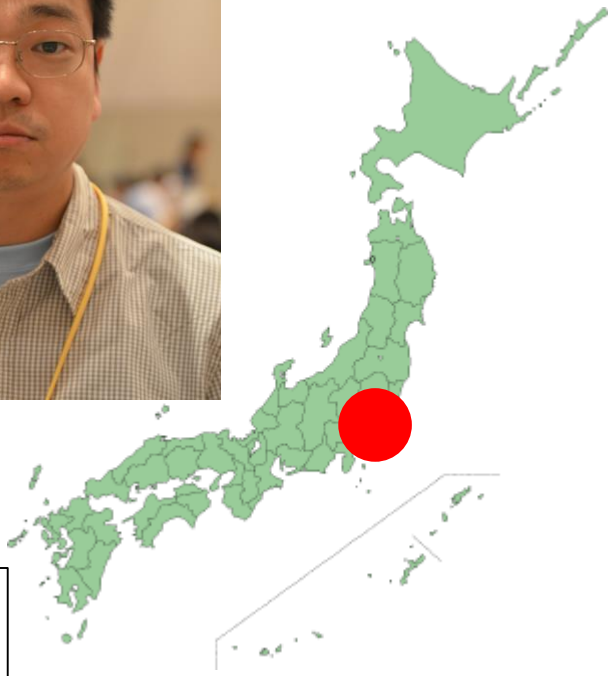
A preliminary diffusional kurtosis imaging study of Parkinson disease: comparison with conventional diffusion tensor imaging

Koji Kamagata · Hiroyuki Tomiyama · Taku Hatano · Yumiko Motoi · Osamu Abe · Keigo Shimoji · Kouhei Kamiya · Michimasa Suzuki · Masaaki Hori · Mariko Yoshida · Nobutaka Hattori · Shigeki Aoki

“Rising suns”: U-40 NR researchers

- Dr. Yasuhiro Nakata
  - Tokyo Metropolitan Neurological Hospital
  - Diffusion tensor





ORIGINAL RESEARCH

Y. Nakata
A.J. Barkovich
M. Wahl
Z. Strominger
R.J. Jeremy
M. Wakahiro
P. Mukherjee
E.H. Sherr

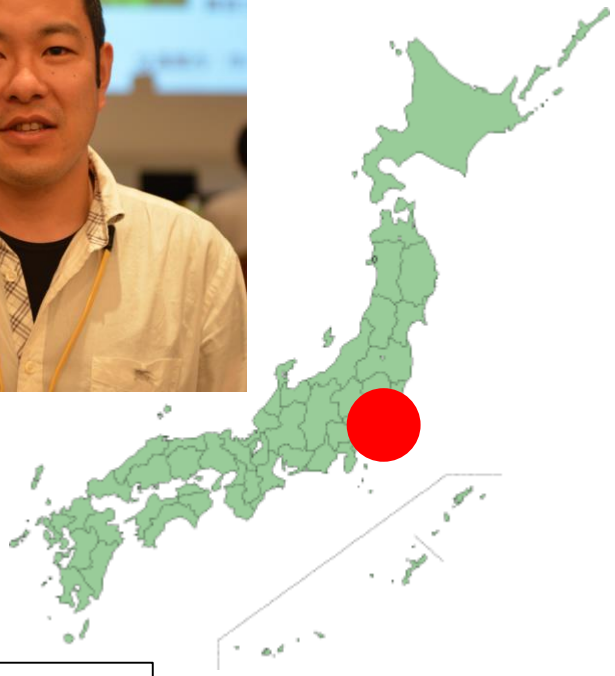
Diffusion Abnormalities and Reduced Volume of the Ventral Cingulum Bundle in Agenesis of the Corpus Callosum: A 3T Imaging Study

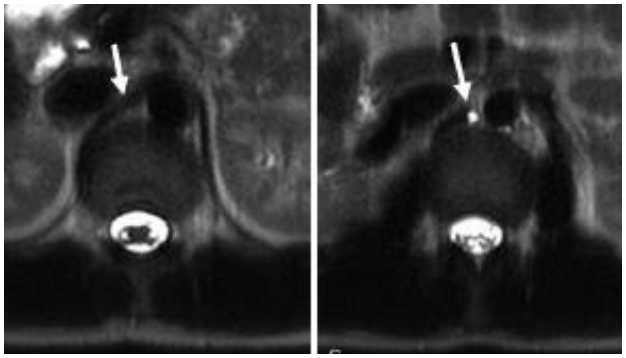
BACKGROUND AND PURPOSE: Patients with agenesis of the corpus callosum (AgCC) exhibit cognitiv
and behavioral impairments that are not replicated by surgical transection of the callosum, suggestir
that other anatomic changes may contribute to the observed clinical findings. The purpose of this stuc
was to determine whether the ventral cingulum bundle (VCB) is affected in patients with AgCC
using diffusion tensor imaging (DTI) and volumetry.

MATERIALS AND METHODS: Twelve participants with AgCC (8 males and 4 females; mean age, 30
20) and 12 control subjects matched for age and sex (mean age, 37 ± 19) underwent MR imaging ar
DTI at 3T. 3D fiber tracking of the VCB was generated from DTI and the average fractional anisotrop
(FA) was computed for the tracked fibers. Additionally, the volume, cross-sectional area, and length
the VCB were measured by manually drawn regions of interest on thin-section coronal T1-weight

“Rising suns”: U-40 NR researchers

- Dr. Satoshi Matsushima
  - Jikei University
  - Lymphography



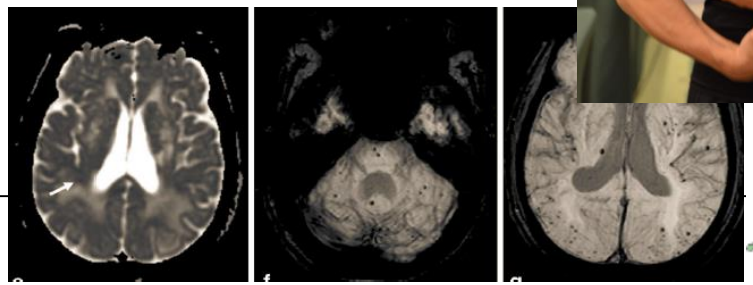


Nonenhanced Magnetic Resonance Lymphoductography: Visualization of Lymphatic System of the Trunk on 3-Dimensional Heavily T2-weighted Image With 2-Dimensional Prospective Acquisition and Correction

Satoshi Matsushima, MD, Noriatsu Ichiba, MD, Daichi Hayashi, MBBS, and Kunihiko Fukuda, MD

“Rising suns”: U-40 NR researchers

- Dr. Keita Sakurai
  - Nagoya City University
  - Degenerative diseases
  - Dementia



Insights Imaging (2014) 5:375–385
DOI 10.1007/s13244-014-0312-x

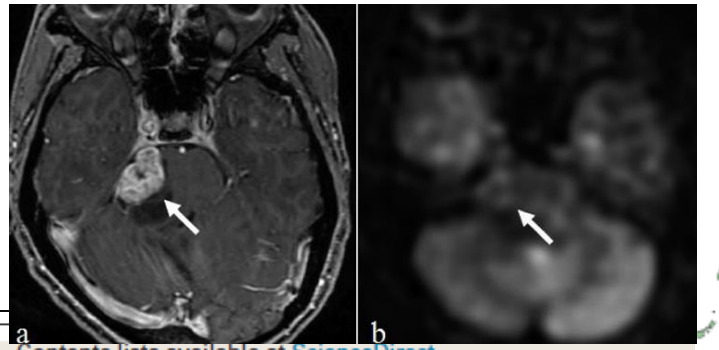
PICTORIAL REVIEW

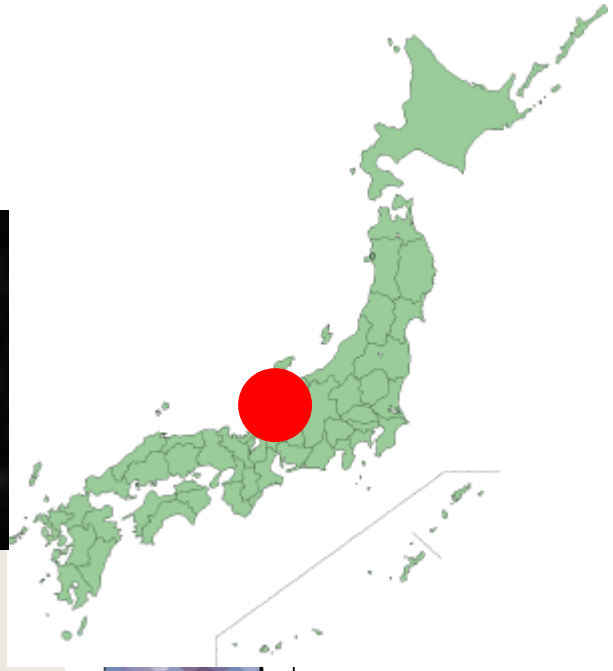
Imaging spectrum of sporadic cerebral amyloid angiopathy: multifaceted features of a single pathological condition

Keita Sakurai · Aya M. Tokumaru · Tomoya Nakatsuka · Shigeo Murayama · Shin Hasebe · Etsuko Imabayashi · Kazutomi Kanemaru · Masaki Takao · Hiroyuki Hatsuta · Kenji Ishii · Yuko Saito · Yuta Shibamoto · Noriyuki Matsukawa · Emiko Chikui · Hitoshi Terada

“Rising suns”: U-40 NR researchers

- Dr. Tatsuya Yamamoto
  - Fukui University
  - CASL
  - P-CASL





Contents lists available at ScienceDirect

European Journal of Radiology

journal homepage: www.elsevier.com/locate/ejrad

Assessment of tumor blood flow and its correlation with histopathologic features in skull base meningiomas and schwannomas by using pseudo-continuous arterial spin labeling images

Tatsuya Yamamoto[a,*], Hiroaki Takeuchi[b], Kazuyuki Kinoshita[a], Nobuyuki Kosaka[a], Hirohiko Kimura[a]

“Rising suns”: U-40 NR researchers

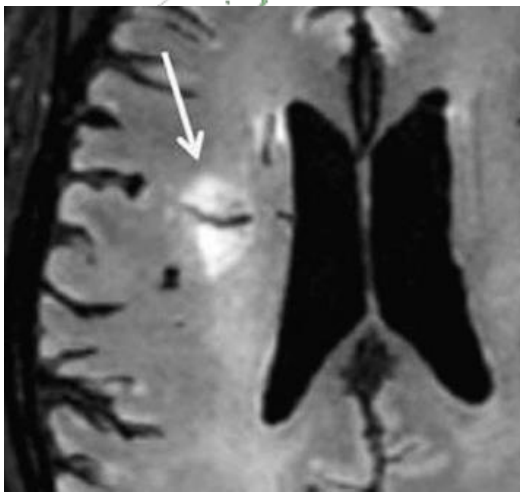
- Dr. Maki Umino
  - Mie University
  - FLAIR
  - Vascular anomary

Jpn J Radiol
DOI 10.1007/s11604-014-0322-0

ORIGINAL ARTICLE

High-signal-intensity abnormalities evaluated by 3D fluid-attenuated inversion recovery imaging within the drainage territory of developmental venous anomalies identified by susceptibility-weighted imaging at 3 T

Maki Umino · Masayuki Maeda · Nobuyoshi Matsushima · Keita Matsuura · Tomomi Yamada · Hajime Sakuma



“Rising suns”: U-40 NR researchers

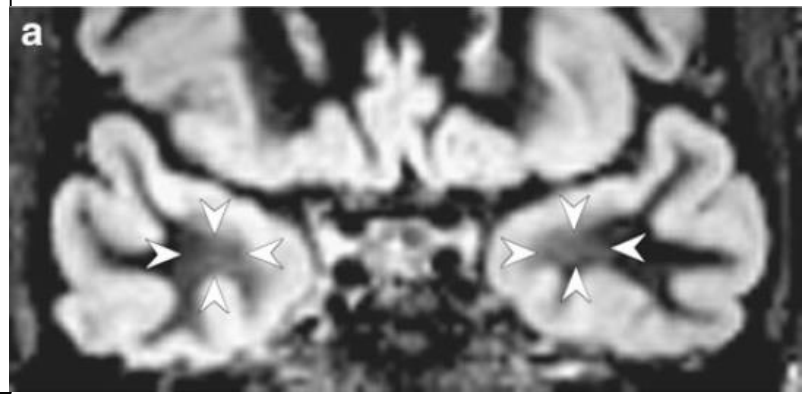
- Dr. Emiko Morimoto
  - Kyoto University
  - Double inversion recovery

Eur Radiol (2013) 23:3–11
DOI 10.1007/s00330-012-2565-4

NEURO

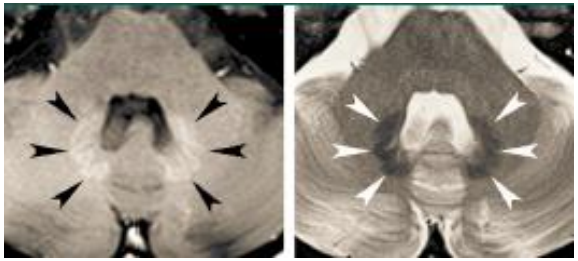
Anterior temporal lobe white matter abnormal signal (ATLAS) as an indicator of seizure focus laterality in temporal lobe epilepsy: comparison of double inversion recovery, FLAIR and T2W MR imaging

Emiko Morimoto · Mitsunori Kanagaki · Tomohisa Okada · Akira Yamamoto · Nobuyuki Mori · Riki Matsumoto · Akio Ikeda · Nobuhiro Mikuni · Takeharu Kunieda · Dominik Paul · Susumu Miyamoto · Ryosuke Takahashi · Kaori Togashi



“Rising suns”: U-40 NR researchers

- Dr. Seiko Kasahara
  - Kyoto University
  - T1 signal on dentate nucl.



Hyperintense Dentate Nucleus on Unenhanced T1-weighted MR Images Is Associated with a History of Brain Irradiation[1]

Radiology

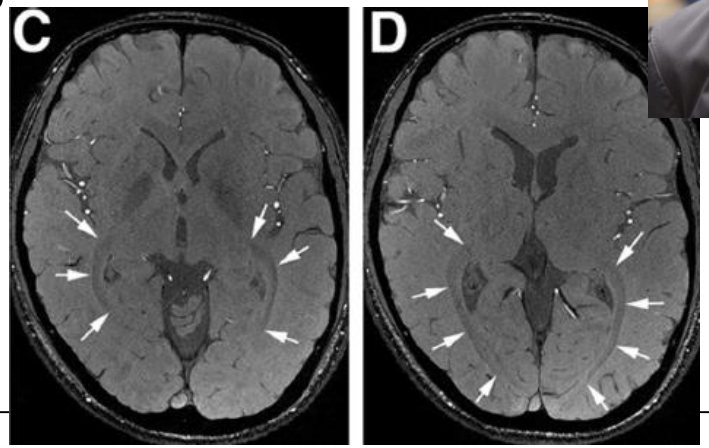
Seiko Kasahara, MD
Yukio Miki, MD, PhD
Mitsunori Kanagaki, MD, PhD
Akira Yamamoto, MD, PhD
Nobuyuki Mori, MD, PhD
Takeshi Sawada, MD
Toshiaki Taoka, MD, PhD
Tomohisa Okada, MD, PhD
Kaori Togashi, MD, PhD

Purpose: To assess the frequency of hyperintensity in the dentate nucleus on T1-weighted magnetic resonance (MR) images and to establish correlations between such hyperintensity and clinical factors, including a history of brain irradiation.

Materials and Methods: This study was approved by the institutional review board, and each patient provided written informed consent. Three hundred sixty-two patients (164 men, 198 women;

“Rising suns”: U-40 NR researchers

- Dr. Nobuyuki Mori
  - Kyoto University
  - SWI
  - CIDP

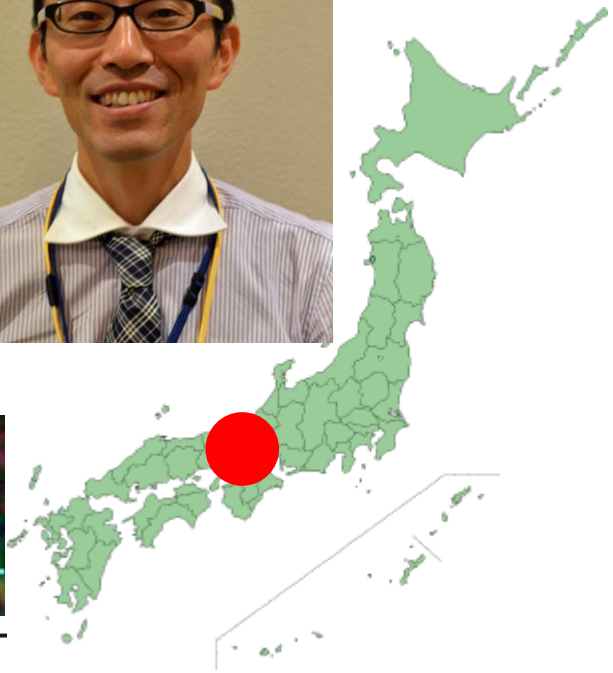


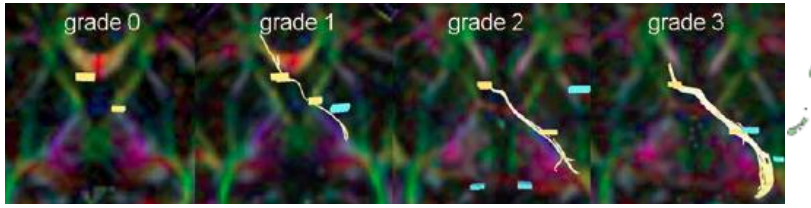
Susceptibility-Weighted Imaging at 3 Tesla Delineates the Optic Radiation

Nobuyuki Mori, MD, Yukio Miki, MD, PhD,* Seiko Kasahara, MD,* Chikara Maeda, MD,* Mitsunori Kanagaki, MD, PhD,* Shin-ichi Urayama, PhD,† Nobukatsu Sawamoto, MD, PhD,† Hidenao Fukuyama, MD, PhD,† and Kaori Togashi, MD, PhD**

“Rising suns”: U-40 NR researchers

- Dr. Kentaro Akazawa
  - Kyoto Prefectural University of Medicine
  - Diffusion tensor
  - Brain temperature





Neuroradiology (2010) 52:723–728
DOI 10.1007/s00234-010-0670-0

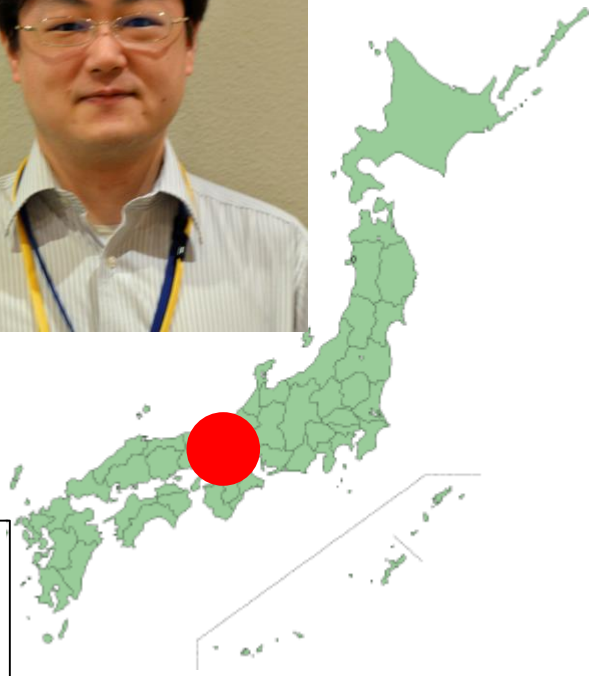
TOPIC ARTICLE

Optimum *b* value for resolving crossing fibers: a study with standard clinical *b* value using 1.5-T MR

Kentaro Akazawa · Kei Yamada · Shigenori Matsushima · Mariko Goto · Sachiko Yuen · Tsunehiko Nishimura

“Rising suns”: U-40 NR researchers

- Dr. Shigenori Matsushima
  - Kyoto Prefectural University of Medicine
  - Perfusion Imaging

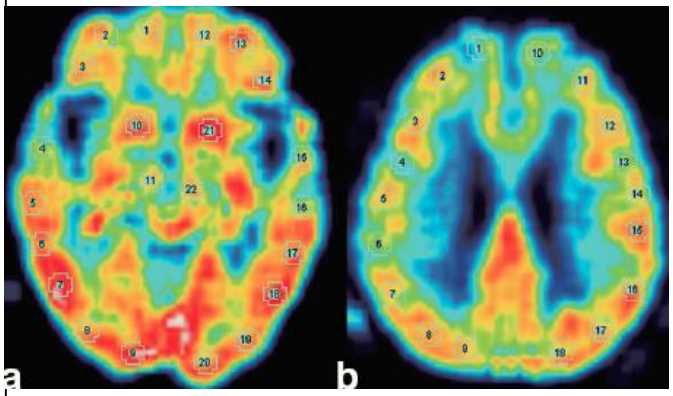


JOURNAL OF MAGNETIC RESONANCE IMAGING 27:1103–1108 (2008)

Original Research

Effect of Vascular Stenosis on Perfusion-Weighted Imaging; Differences Between Calculation Algorithms

Shigenori Matsushima, MD,[1*] Takao Kubota, MD, PhD,[1] Kei Yamada, MD, PhD,[1] Kentaro Akazawa, MD,[1] Terutoshi Masunami, MD,[1] Hirotoshi Ito, MD, PhD,[1] Yo Ushijima, MD, PhD,[1] Kei Owada, MD, PhD,[2] Hiroyasu Sasajima, MD, PhD,[2] Katsuyoshi Mineura, MD, PhD,[2] and Tsunehiko Nishimura, MD, PhD[1]



“Rising suns”: U-40 NR researchers

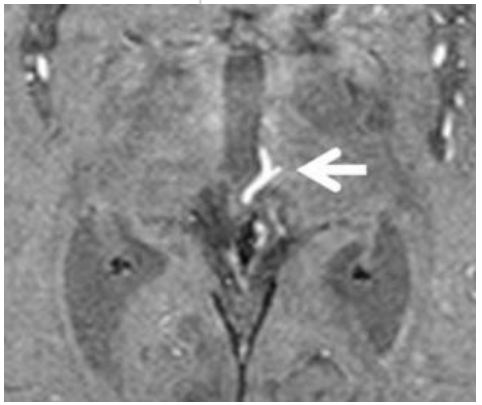
- Dr. Toshiteru Miyasaka
  - Nara Medical University
  - SWI
  - Non-Gaussian diffusion

Neuroradiology (2012) 54:1221–1227
DOI 10.1007/s00234-012-1029-5

DIAGNOSTIC NEURORADIOLOGY

Application of susceptibility weighted imaging (SWI) for evaluation of draining veins of arteriovenous malformation: utility of magnitude images

Toshiteru Miyasaka · Toshiaki Taoka · Hiroyuki Nakagawa · Takeshi Wada · Katsutoshi Takayama · Kaoru Myochin · Masahiko Sakamoto · Tomoko Ochi · Toshiaki Akashi · Kimihiko Kichikawa



“Rising suns”: U-40 NR researchers

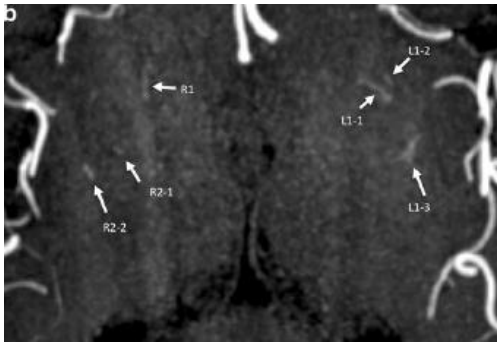
- Dr. Toshiaki Akashi
  - Nara Medical University
  - T1ρ
  - Fine vascular anatomy

Jpn J Radiol (2012) 30:331–335
DOI 10.1007/s11604-012-0058-7

ORIGINAL ARTICLE

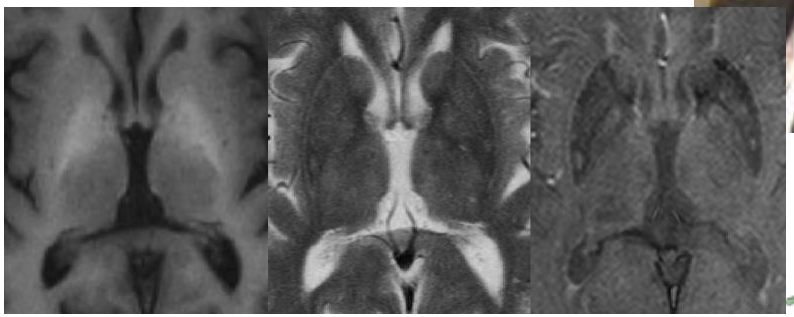
Branching pattern of lenticulostriate arteries observed by MR angiography at 3.0 T

Toshiaki Akashi · Toshiaki Taoka · Tomoko Ochi · Toshiteru Miyasaka · Takeshi Wada · Masahiko Sakamoto · Megumi Takewa · Kimihiko Kichikawa



“Rising suns”: U-40 NR researchers

- Dr. Tomoko Ochi
  - Nara Medical University
  - High dose contrast media
  - SWI



Magn Reson Med Sci, Vol. 10, No. 2, pp. 79–83, 2011

MAJOR PAPER

Discrepancy in T_1 and T_2 Shortening of the Globus Pallidus in Hepatic Insufficiency: Evaluation by Susceptibility-weighted Imaging

Tomoko OCHI[1*], Toshiaki TAOKA[1], Toshiaki AKASHI[1], Masahiko SAKAMOTO[1], Toshiteru MIYASAKA[1], Takeshi WADA[1], Hiroyuki NAKAGAWA[1], Keiichi TAKEHANA[2], Kentaro TATSUNO[2], and Kimihiko KICHIKAWA[1]

“Rising suns”: U-40 NR researchers

- Dr. Tomonori Kanda
  - Kobe University
  - Teikyo University
  - Gadolinium accumulation in dentate nucleus and globus palidus

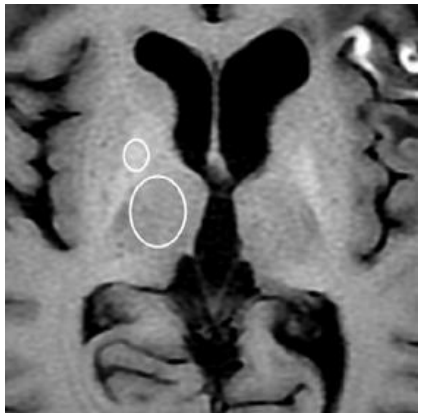
Tomonori Kanda, MD, PhD
Kazunari Ishii, MD, PhD
Hiroki Kawaguchi, MD
Kazuhiro Kitajima, MD, PhD
Daisuke Takenaka, MD, PhD

High Signal Intensity in the Dentate Nucleus and Globus Pallidus on Unenhanced T1-weighted MR Images: Relationship with Increasing Cumulative Dose of a Gadolinium-based Contrast Material[1]

Radiology

Purpose: To explore any correlation between the number of previous gadolinium-based contrast material administrations and high signal intensity (SI) in the dentate nucleus and globus pallidus on unenhanced T1-weighted magnetic resonance (MR) images.

Materials and The institutional review board approved this study, waiving the require-



“Rising suns”: U-40 NR researchers

- Dr. Junji Moriya
  - University of Occupational and Environmental Health School of Medicine
  - Diffusion tensor

ELSEVIER

Schizophrenia Research

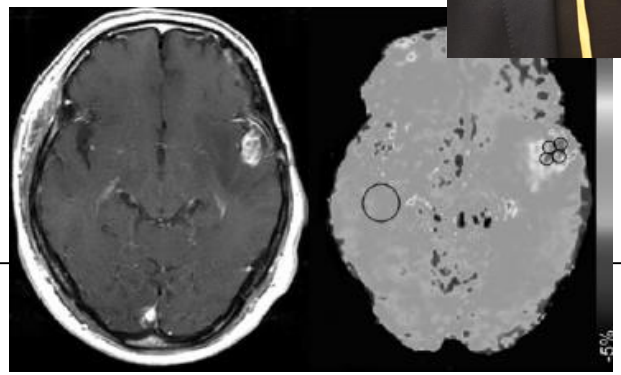
Volume 116, Issues 2–3, February 2010, Pages 196–203

Gray and white matter volumetric and diffusion tensor imaging (DTI) analyses in the early stage of first-episode schizophrenia

Junji Moriya[a,], Shingo Kakeda[a], Osamu Abe[b], Naoki Goto[c], Reiji Yoshimura[c], Hikaru Hori[c], Norihiro Ohnari[a], Toru Sato[a], Shigeki Aoki[d], Kuni Ohtomo[b], Jun Nakamura[c], Yukunori Korogi[a]

“Rising suns”: U-40 NR researchers

- Dr. Osamu Togao
  - Kyusyu University
  - CEST, Amide imaging



Neuro-Oncology

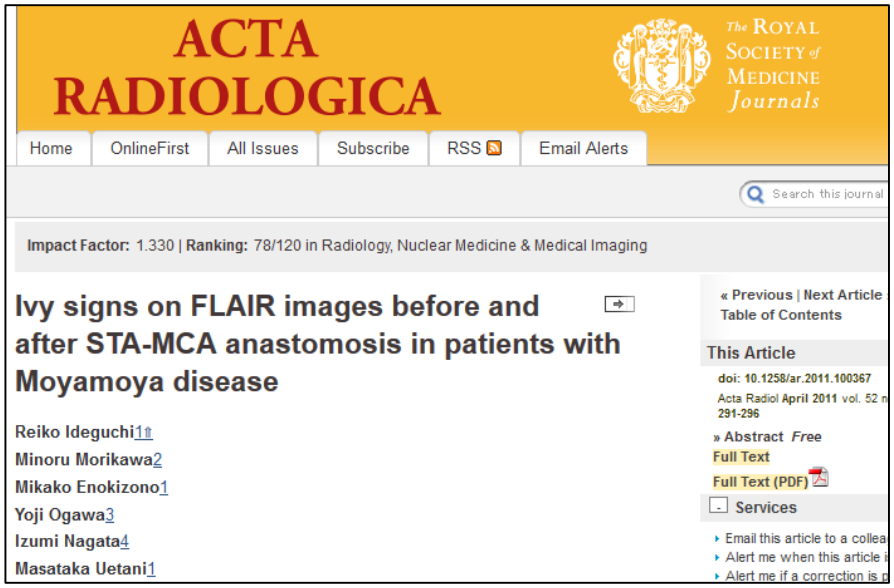
Neuro-Oncology 16(3), 441–448, 2014
doi:10.1093/neuonc/not158
Advance Access date 4 December 2013

Amide proton transfer imaging of adult diffuse gliomas: correlation with histopathological grades

Osamu Togao, Takashi Yoshiura, Jochen Keupp, Akio Hiwatashi, Koji Yamashita, Kazufumi Kikuchi, Yuriko Suzuki, Satoshi O. Suzuki, Toru Iwaki, Nobuhiro Hata, Masahiro Mizoguchi, Koji Yoshimoto, Koji Sagiyama, Masaya Takahashi, and Hiroshi Honda

“Rising suns”: U-40 NR researchers

- Dr. Reiko Ideguchi
  - Nagasaki University
  - FLAIR
  - Ivy-sign



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Ivy signs on FLAIR images before and after STA-MCA anastomosis in patients with Moyamoya disease

Reiko Ideguchi[1]
Minoru Morikawa[2]
Mikako Enokizono[1]
Yoji Ogawa[3]
Izumi Nagata[4]
Masataka Uetani[1]

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doi: 10.1258/ar.2011.100367

Acta Radiol April 2011 vol. 52 n
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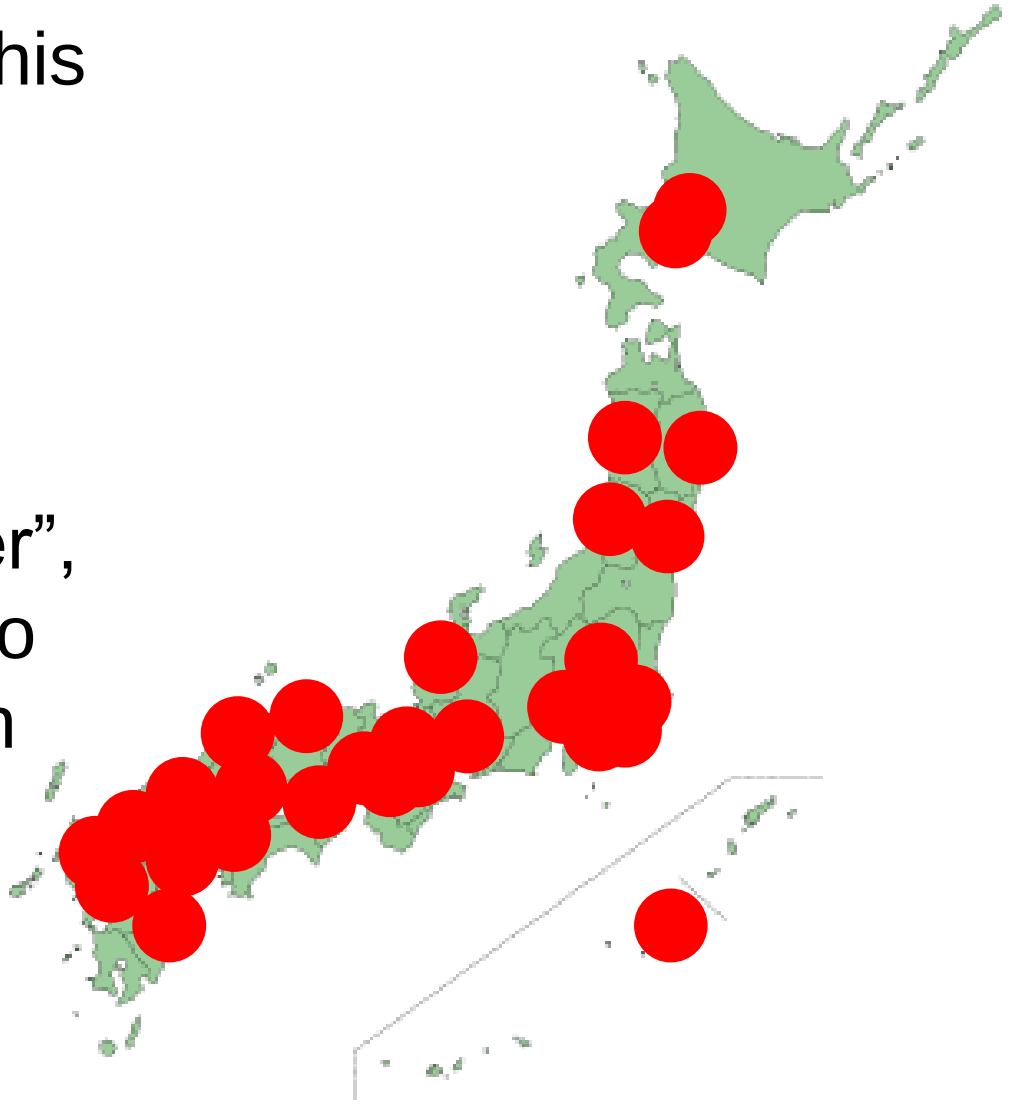
“Rising suns”: U-40 NR researchers

- Picked up “rising suns” from the attendee of this meeting.
- There are many other “rising suns” in our country.
- As an “R40 researcher”, I am expecting them to lead neuroradiology in Japan.



Thank you for your attention!!