# ご 案 内

## １．参会受付

石川県立音楽堂 **B1 階交流ホール**受付にて 7 月 27 日(金)8:30 より、参会受付を行います。
名札の記載事項をご確認の上、クレジット登録カードに参会費 10,000 円(JNEF のみ参加)を添えて受付にご提出下さい。

## ２．演者の皆様へ

- ◆ 演題の発表時間は 6 分、質疑応答時間は ディスカッションおよびコメントを含めて 4 分です。発表時間を厳守して頂きますよう宜しくお願い致します。
- ◆ 発表は PC プレゼンテーション(1 面映写)です。発表者ご自身で演台に設置されているマウス、キーボードを操作して下さい。
- ◆ 発表データは PC 本体をお持ち頂くか、メディア（CD-R または USB フラッシュメモリーのみ)にてお持ち下さい。
- ◆ 事務局では Windows を用意します。Macintosh 使用の方はご自身の PC をご持参下さい。
- ◆ PC は発表 30 分前までに PC 受付にて受付と動作確認を行って下さい。

## ３．Sammy’s　Award

最優秀発表には Sammy’s Award が贈られます。
Scientific value 5 点、English　Ability 5 点、Presentation manner 5 点の 15 点満点で評価します。 なお、発表は Free hand での発表が好ましく、原稿を読みながらの発表は Presentation manner で 1 点減点となります。すでに Sammy’s Award First Place を受賞された先生は対象外となりますのでご了承下さい。

## ４．表彰式・懇親会のご案内

7 月 27 日(金) 19:00 より、学会場にて表彰式と懇親会を開催致します。皆様のご参加をお待ち申し上げます。

## ５．世話人会

7 月 27 日(金) 12:55 より、石川県立音楽堂 B1 階 控え室 1 にて開催致します。 世話人の先生方はご参集下さい。

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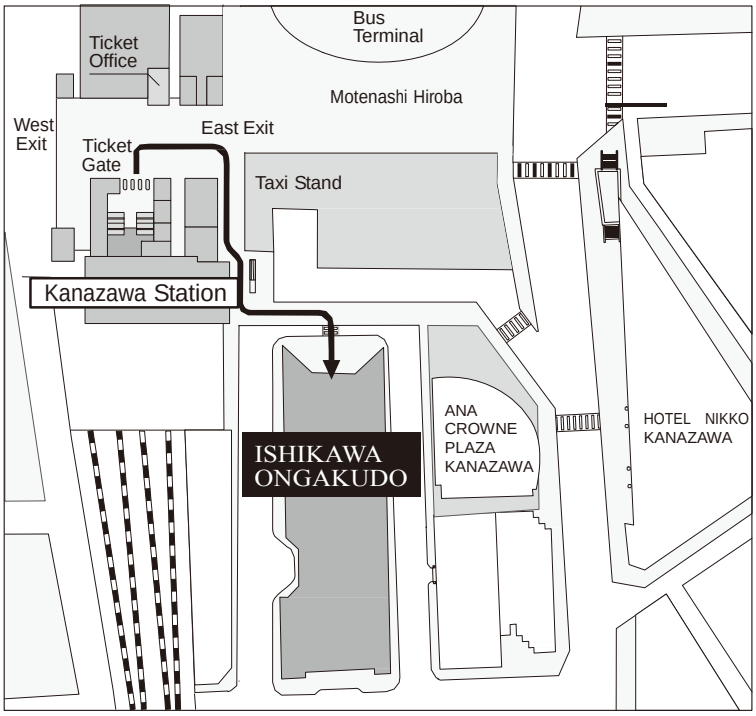
## 本学会に関するお問い合わせ

〔会期中の連絡先〕
学会本部　石川県立音楽堂内　B1 階 控え室 2
石川県金沢市昭和町 20-1(金沢駅東口)
TEL：076-232-8111(代) FAX：076-232-8101

〔事務局〕
プログラム・その他のお問い合わせ　第 27 回日本脳神経外科国際学会フォーラム 事務局
金沢医科大学脳神経外科学　代表）赤井　卓也
〒920－0923　石川県河河北郡内灘町大学 1 丁目 1 番地
TEL:076- 218-8174（医局直通）FAX: 076-286-1702

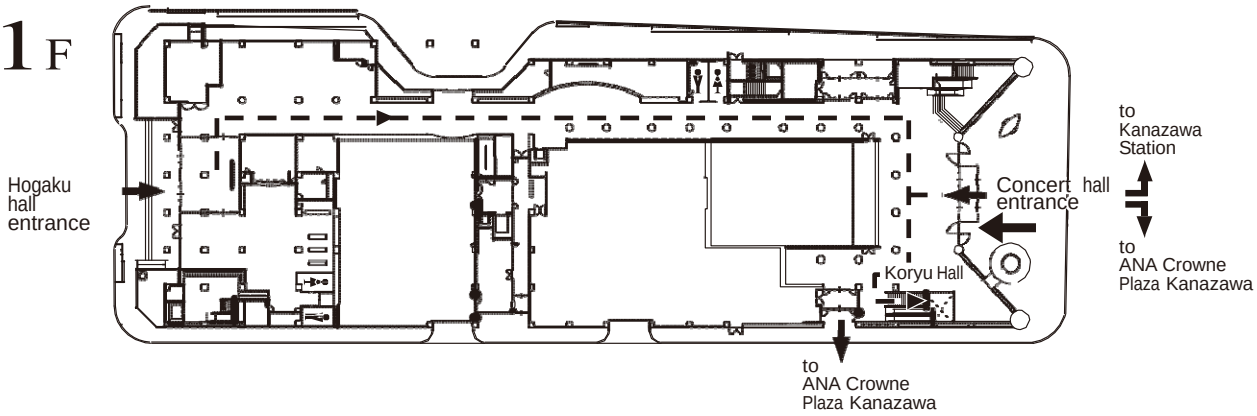
事務局よりこのプログラム中の氏名は敬称略とさせていただきました。ご了承下さいますようお願い申し上げます

# From Kanazawa Station

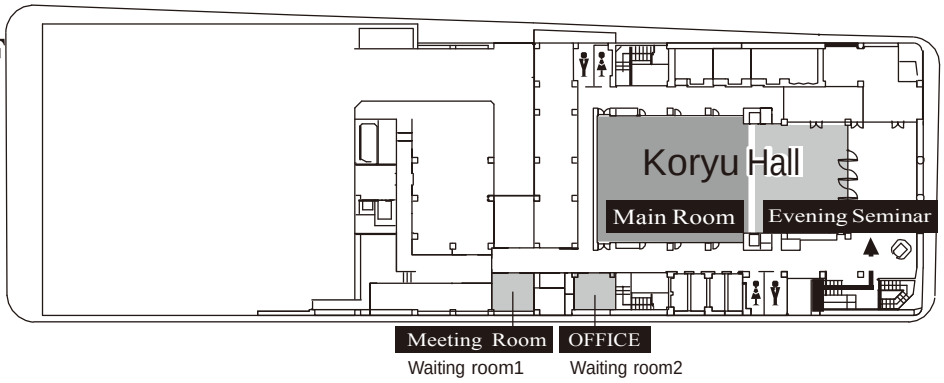



# Ishikawa Ongakudo

## 1F




## B1F



# Time Table

**7 月 27 日（金）**

| Time | Session | No | Speaker | Moderator |
|---|---|---|---|---|
| 8:30 | 受付開始 | | | |
| 9:00 | 同時通訳オリエンテーション | | | 赤井卓也 |
| 9:15 | 教育講演 1 | EL-1 | 植村研一 | 伊達 勲 |
| 9:45 | 同通研修（日→英） | SI-1 | 笹川泰生 | 赤井卓也 |
| 10:05 | Advice time | | | |
| 10:15 | JNEF Opening address | | Takuya Akai | |
| 10:20 | Vascular 1 | 1 | Yusuke Kinoshita | Ikezaki |
| 10:30 | | 2 | Kodai Kitamoto | Sakata |
| 10:40 | | 3 | Taku Shigeno | |
| 10:50 | | 4 | Aichi Niwa | |
| 11:00 | | 5 | Takahiro Murata | |
| 11:10 | Vascular 2 | 6 | Atsushi Saito | Mihara |
| 11:20 | | 7 | Yoichi Yoshida | Shibata |
| 11:30 | | 8 | Osamu Nagano | |
| 11:40 | | 9 | Chie Mihara | |
| 11:50 | | 10 | Teppei Matsubara | |
| 12:00 | Break | | | |
| 12:10 | ランチョンセミナー | LS-1 | 飯田幸治 | 荻野雅弘 |
| 12:55 | JNEF 世話人会/Break | | | |
| 13:25 | Spine | 11 | Takahiro Miyahara | Hosoda |
| 13:35 | | 12 | Mashiro Aoyama | Kurokawa |
| 13:45 | | 13 | Satoshi Nakamura | |
| 13:55 | | 14 | Mikinobu Takeuchi | |
| 14:05 | 特別講演 1 | SL-1 | 中川 衛 | 赤井卓也 |
| 14:40 | Tumor 1 | 15 | Fumi Higuchi | Kondoh |
| 14:50 | | 16 | Takeshi Takayasu | Matsumura |
| 15:00 | | 17 | Hirofumi Nakatomi | |
| 15:10 | | 18 | Yoshinori Higuchi | |
| 15:20 | Tumor 2 | 19 | Manabu Natsumeda | Fujimaki |
| 15:30 | | 20 | Masayuki Nitta | Nishioka |
| 15:40 | | 21 | Kensuke Tateishi | |
| 15:50 | | 22 | Kazuhiro Tanaka | |
| 16:00 | Break | | | |
| 16:10 | Tumor 3 | 23 | Junko Matsuyama | Nishizawa |
| 16:20 | | 24 | Yasuo Sasagawa | Saeki |
| 16:30 | | 25 | Soichi Oya | |
| 16:40 | | 26 | Kohei Fukuoka | |
| 16:50 | Pediatrics, Function | 27 | Kazuaki Shimoji | Taira |
| 17:00 | | 28 | Hitoshi Yamahata | Yasuda |
| 17:10 | | 29 | Takashi Asahi | |
| 17:20 | | 30 | Takeshi Kondoh | |
| 17:30 | 特別講演 2 | SL-2 | 齋藤中哉 | 本郷一博 |
| 18:15 | イブニングセミナー | ES | 桑山直也 | 赤井卓也 |
| 19:00 | 表彰式・懇親会 | | | |

**7 月 28 日（土）**

| Time | Session | No | Speaker | Moderator |
|---|---|---|---|---|
| 9:00 | 教育講演 2 ・同通研修 | EL-2 | 名取良弘 | 赤井卓也 |
| 9:45 | Advice | | 藤巻高光 | |
| 10:00 | 同通研修 | SI-2 | 竹中勝信 | 赤井卓也 |
| 10:20 | | SI-3 | 近 貴志 | |
| 10:40 | | SI-4 | 遠藤俊毅 | |
| 11:00 | | SI-5 | 徳川城治 | |
| 11:20 | | SI-6 | 黒川 龍 | |
| 11:50 | ランチョンセミナー | LS-2 | 山本貴道 | 赤井卓也 |
| 12:35 | 挨拶 1 | 新任教授 | 平 孝臣 | 赤井卓也 |
| 12:45 | 挨拶 2 | 次期会長 | 坂田勝巳 | |
| 12:50 | 表彰式 | Ken's Award, 会長賞 | | |
| 12:55 | 総括 | 通訳団長 | 伊達 勲 | |
| 13:00 | 閉会挨拶 | | 赤井卓也 | |

# Scientific Program

| Friday, July 27 | | | Speaker | Moderator |
|---|---|---|---|---|
| 9:00 | | 同時通訳研修会開会　研修オリエンテーション | Takuya Akai | |
| 9:15 | | **Educational lecture** | | |
| | EL-1 | 効果的同時通訳のコツ | Kenichi Uemura | Date |
| | | *Professor Emeritus Hamamatsu University School of Medicine (Consultant, Matsudo City Hospital Administration)* | | |
| 9:45 | SI-1 | 悪性リンパ腫における神経内視鏡下生検術の有用性 | Yasuo Sasagawa | Akai |
| | | *Kanazawa Medical University* | | |
| 10:05 | | **Advice time** | | |
| 10:15 | | **JNEF 2012 Opening address** | Takuya Akai | |
| 10:20 - 11:10 | | **Vascular 1** | | |
| | 1 | A case of out-flow reduction treatment for a large fusioform aneurysm in the middle cerebral artery (M1) | Yusuke Kinoshita | Ikezaki |
| | | *Nakamura Memorial Hospital* | | Sakata |
| | 2 | Endovascular coil embolization for aneurysm arising from fenestration of suplaclinoid internal carotid artery | Kodai Kitamoto | |
| | | *University of Tsukuba* | | |
| | 3 | My memory of intraoperative ruptures in aneurysmal clipping | Taku Shigeno | |
| | | *Kanto Rosai & Shirane Tokushukai Hospital* | | |
| | 4 | Evaluation of the initial process of reversible cerebral vesoconstriction syndrome using magnetic response angiography | Aichi Niwa | |
| | | *Aichi Medical University* | | |
| | 5 | Vasodilation induced by increased extracellular magnesium concentration in cerebral penetrating arterioles | Takahiro Murata | |
| | | *Shinshu University* | | |
| 11:10-12:00 | | **Vascular 2** | | |
| | 6 | Clinical features of intracranial vertebral dissection without hemorrhage and infarction | Atsushi Saito | Mihara |
| | | *Aomori Prefectural Central Hospital* | | Shibata |
| | 7 | Tonsillar hemorrhage due to dural arteriovenous fistula of the posterior fossa: case report | Yoichi Yoshida | |
| | | *Chiba University* | | |
| | 8 | Our treatment strategy of cerebral arteriovenous malformation: Safer radiosurgery combined endovascular surgery | Osamu Nagano | |
| | | *Chiba Cardiovascular Center* | | |
| | 9 | Continuously measuring wakeful level of stroke patients by using bispectral index (BIS) monitor for grasping individual pattern | Chie Mihara | |
| | | *Yasuda Women's University* | | |
| | 10 | Cerebral venous thrombosis after ventriculoperitoneal shunt | Teppei Matsubara | |
| | | *University of Tsukuba* | | |

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|---|---|---|---|---|
| 12:00 | | **Break** | | |
| 12:10 | | **Luncheon seminar** | | |
| | LS-1 | 脳神経外科医のためのてんかん知識<br>－NEWER WED から手術まで－<br>*Hiroshima University*<br>*Sponsored by Otsuka Pharmaceutical Corporation* | Koji Iida | Ogino |
| 12:55 | | **Committee meeting / Break** | | |
| 13:25 - 14:05 | | **Spine** | | |
| | 11 | A case report of survival traumatic atlanto-occipital dislocation<br>*Kurume Univerisuty* | Takahiro Miyahara | Hosoda<br>Kurokawa |
| | 12 | Atlanto-occipital dislocation (AOD)<br>*Aichi Medical University* | Masahiro Aoyama | |
| | 13 | Space shuttle laminotomy for lumbar canal stenosis<br>*International University of health and Welfare Mita* | Satoshi Nakamura | |
| | 14 | Plasmapore-coated titanium cervical cages induce more rapid bone fusion after anterior cervical discectomy and fusion as compared to non-coated titanium cages: A 2-year follow-up study<br>*Aichi Medical University* | Mikinobu Takeuchi | |
| 14:05 | | **Special lecture** | | |
| | SL-1 | 金沢の工芸･象嵌<br>*Kanazawa College of Art* | Mamoru Nakagawa | |
| 14:40 - 15:20 | | **Tumor 1** | | |
| | 15 | An adult case of intracranial peripheral-type primitive neuroectodermal tumor (pPNET)<br>*Dokkyo Medical University* | Fumi Higuchi | Kondoh<br>Matsumura |
| | 16 | Atypical teratoid rhabdoid tumor with subarachnoid spreading like plastic ependymoma: A case report<br>*Hiroshima University* | Takeshi Takayasu | |
| | 17 | Visualizing, tracking neural function with continuous direct brainstem evoked potentials discriminate reversible injury by intraoperative extended recuperating treatment and improved functional preservation in acoustic neuroma surgery<br>*University of Tokyo* | Hirofumi Nakatomi | |
| | 18 | Staged stereotactic radiation therapy for metastatic brain tumor: optimal dose and fractionation<br>*Chiba University* | Yoshinori Higuchi | |
| 15:20 - 16:00 | | **Tumor 2** | | |
| | 19 | Gli3 is associated with neuronal and glial differentiation in medulloblastomas<br>*Niigata Prefectural Shibata Hospital* | Manabu Natsumeda | Fujimaki<br>Nishioka |
| | 20 | c-Myc illustrates a threshold model for tumour initiation in glioblastoma<br>*Tokyo Women's Medical University* | Masayuki Nitta | |
| | 21 | Application of $^{62}$Cu-ATSM PET imaging to predict highly malignant grades and hypoxia-inducible factor-1 $\alpha$ expression in patients with glioma | Kensuke Tateishi | |

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|---|---|---|---|---|
| | | *Yokohama City University* | | |
| | 22 | Oncogenic EGFR signaling activates an mTORC2-NF- κ B pathway that promotes chemotherapy resistance | Kazuhiro Tanaka | |
| | | *Kobe University* | | |
| 16:00 | | **Break** | | |
| 16:10 - 16:50 | | **Tumor 3** | | |
| | 23 | Expression of Ki-67 in predicting progression of postoperative residual pituitary adenomas, and clinical feature of atypical adenomas | Junko Matsuyama | Nishizawa |
| | | *Fukushima Medical University* | | Saeki |
| | 24 | Interanal carotid arterial shift after transsphenoidal surgery in pituitary adenoma patients | Yasuo Sasagawa | |
| | | *Kanazawa Medical University* | | |
| | 25 | Cerebellar tumors and emaciation | Soichi Oya | |
| | | *Saitama Medical School/Center* | | |
| | 26 | Clinical courses of children with intracranial lesions without neurological symptoms at diagnosis | Kohei Fukuoka | |
| | | *Saitama Medical Uniersity International Medical Center* | | |
| 16:50 - 17:30 | | **Pediatrics, Operative technique, Function** | | |
| | 27 | Loosing visual acuity due to intracranial hypertension. A case associated with sagittal suture synostosis | Kazuaki Shimoji | Taira |
| | | *Juntendo University* | | Yasuda |
| | 28 | Paraumbilical peritoneal incision using the little finger in shunt operations for hydrocephalus: Technical note | Hitoshi Yamahata | |
| | | *Aichi Medical University* | | |
| | 29 | Clinical application of the hanger reflex toward the treatment of cervical dystonia: A multicenter trial | Takashi Asahi | |
| | | *University of Toyama* | | |
| | 30 | The lobotomist and the lobotomized: What current images tell us | Takeshi Kondoh | |
| | | *Shinsuma General Hospital* | | |
| **17:30** | | **Special lecture** | | |
| | SL-2 | プレゼンテーション上級者がもう一歩前へ出るための思考と戦略 | Nakaya Saito | Hongo |
| | | *The Honolulu Academy of Medicine* | | |
| **18:15** | | **Evening seminar** | | |
| | ES | 頚動脈血行再建術の最前線 | Naoya Kuwayama | Akai |
| | | *University of Toyama* | | |
| | | *Sponsored by Sanofi-Aventis corporation* | | |
| **19:00** | | **Award-giving ceremony and reception** | | |

| Saturday, July 28 | | | Speaker | Moderator |
|---|---|---|---|---|
| 9:00 | | **Educational lecture and interpretation training** | | |
| | EL-2 | 学会発表の品質管理　ー通訳しやすさの観点からー | Yoshihiro Natori | Akai |
| 9:45 - 11:40 | | **Simultaneous interpretation training** | | Akai |
| 11:50 | | **Luncheon seminar 2** | | |
| | LS-2 | てんかん治療の基本と難治症例への対応<br>*Seirei Hamamatsu General Hospital*<br>*Sponsored by GlaxoSmithKline corporation* | Takamichi Yamamoto | Akai |
| 12:35 | | **Newly-appointed professor lecture** | Takaomi Taira | Akai |
| 12:45 | | **President-elect address** | Katsumi Sakata | |
| 12:50 | | **Award-giving ceremony (Ken's Award, Presidential award)** | | |
| 12:55 | | **Summary** | Isao Date | |
| 13:00 | | **Closing remarks** | Takuya Akai | |

# Abstracts

**SL-1**

**特別講演 1**

# 「金沢の工芸・象嵌」

## Crafts in Kanazawa・Zougan


中川 衛

Nakagawa Mamoru

**彫金の重要無形文化財保持者(人間国宝)**
**金沢美術工芸大学工芸科教授**
**日本工芸会 常任理事**


大学ではデザインを学び、産業デザイナーとして出発したが、27 歳の時に金沢に帰郷。
加賀象嵌の美しさに魅せられ、それまで全く経験のなかった金工の道へと進んだ。
現在は出身校である金沢美術工芸大学工芸科教授として後進の指導にも力を注いでいる。

**略 歴**

1947 年 – 石川県金沢市生まれ。
1971 年 – 金沢美術工芸大学産業美術学科卒業、同年松下電工入社。
1974 年 – 松下電工を退社し、高橋介州に師事。デザイナーから工芸家へと転身。
1979 年 – 日本伝統工芸展初入選。
1996 年 – 金沢美術工芸大学教授に就任。
2004 年 – 重要無形文化財保持者(人間国宝)認定。
2008 年 – メトロポリタン美術館に作品所蔵される。
2009 年 – 紫綬褒章受賞。
2010 年 – 大英博物館に作品所蔵される。

**抄 録**


金沢には藩政時代より続く、陶磁、漆、染織、金工などの伝統工芸品が数多くあります。
加賀象嵌も藩政時代、鍔、鎧、鐙など武具の一部の加飾技法として発展しました。現在においても、今日的伝統工芸品として継承されています。その歴史や伝統技法の内容を作品紹介と工程説明を通して解説します。

## SL-2

### 特別講演 2

さいとうなかや
**齋 藤 中哉**

**住 所**　〒105-0003
東京都 港区 西新橋 1-6-12　Suite 1002
一般社団法人 The Honolulu Academy of Medicine
**電 話**　03-6206-1375
**F A X**　03-6206-1376
**E-mail**　nakaya@honolulu-med.ac

**現 職**

一般社団法人 The Honolulu Academy of Medicine　代表理事　2010 年～現在

**専攻、所属学会**

内科（日本内科学会）、腎臓病学（日本腎臓学会）、血液透析（日本透析医学会）
Career Development Adviser（特定非営利活動法人日本キャリア開発協会）

**学 歴**

京都大学大学院 工学研究科 分子工学専攻 修士課程 修了　1988 年
大阪大学 医学部 医学科 卒業　1994 年

**最近の職歴（主要なもののみ抜粋）**

University of Hawaii, Office of Medical Education Visiting Scholar　2003 年～2006 年
東京医科大学病院 総合診療科 兼任教授　2006 年～2009 年
東京医科大学 医学教育学講座 兼任教授　2009 年～2011 年

**著 作**

単著 「臨床医のための症例プレゼンテーション A to Z」（医学書院）
共著　Surgery On Call (4th Edition) (New York, USA)
共著 「臨床能力を鍛えるハワイ大学式 PBL マニュアル」（羊土社）
翻訳 「医師のための英文履歴書の書き方」（メジカルビュー社）

**映像教材**

「Dr.齋藤のハワイ大学式スーパートレーニング」（上巻・下巻）ケアネット DVD

**その他**

興味　医学教育、キャリア開発およびキャリア教育、国際交流
珈琲、京都

**SL-2**

# プレゼンテーション上級者がもう一歩前へ出るための思考と戦略

**齋藤　中哉**
一般社団法人 The Honolulu Academy of Medicine　代表理事・医師

プレゼンテーション上級者を対象に、以下の三点について論じます：

（1）学会の弊害

学会はプレゼンテーションの最高の晴れ舞台のはずですが、今や、単なるスライドショーに成り下がっています。プレゼンテーションの実力をもう一歩伸ばすために、次の不等式に意識を集中してください。

プレゼンテーション≠スライドショー

この不等式に基づき、プレゼンテーションらしいプレゼンテーションを行うために、以下の三点に独自の工夫を行っていきましょう。

① 照明
② 立ち位置
③ 手許の道具（マイク、PC、レーザーポインター）

（2）Native vs. Non-native

① 「Native を見習い」、「シャワーのように音を浴びる」、「速読即解に取り組む」。この戦略は、悪くはありませんが、消化不良と疲弊を招きがちです。
② 完成形に見惚れることなく、成長過程を理解しておくことが重要です。家庭で言語の獲得を開始した native の乳幼児が、school で最初に学ぶことは？
③ Literacy Training in Nursery/Primary
Alphabet → Phonics → Spelling → Reading & Writing

（3）もう一歩前に出るための思考と戦略

医師にとって、特別な時間を作らずに、永年の習慣として継続できることは？

① 論文の音読
②「ゆっくり」と「はっきり」
③「気持ちを込める」

**EL-1**

# うまい同時通訳のコツ

**植村研一**
松戸市病院　事業管理者

フランス語とイタリア語、あるいはドイツ語とオランダ語のように、お互いに文法も語順も全く同じ兄弟言語同士の場合には、頭から単語を同時通訳すれば良い。しかし、文法と語順の全く異なる日本語と英語の同時通訳では、語順に従った完全な同時通訳は不可能なので、一つの文を聴き終わってから完全な通訳を始めようとすると、次の文が聞こえて来て、頭が混乱して通訳できなくなる。文の頭から phrase 毎に、文法を無視しても、訳して行く phrase translation しかなく、そのコツを特訓して学ぶしかない。少なくとも一つの文の半分が過ぎる前にはその文の通訳を始めなくてはならない。早口で棒読みされたらそれも不可能になる。この場合には、完全な同時通訳は不可能なので、演者が何を言おうとしているのかのポイントを纏めて説明する edited translation をするしかない。講演原稿を前もって渡されていれば、予め行間に訳文を書き入れておき、各文の頭の単語が聞こえたら訳文を必死に読んで行けば完全な同時通訳は可能である。しかし演者が必ずしも原稿通りに講演せずに、アドリブを入れたりすると、大変なミスになるので、訳文を読みながらも、原稿通りか否かを確認し続ける注意が必要で、アドリブが入ったら、それを聞きながらの phrase translation に切り替える。原稿を直前に渡されたら、原稿を読みながら通訳する sight translation（サイトラ）をするが、訳しながらも次の文も同時に黙読する。ここでもアドリブに留意する。

同時通訳は二人でペアを組んでやる。通訳している人の頭が混乱する mental block に陥ったら即座に交代する。交代要員は数字に関する援助を怠ってはならない。昭和 34 年と言われても、直ぐに 34+25=59 だから 1959 年と言う暗算を同時通訳中にすることは不可能なので、交代者が隣で計算をして通訳者にメモで渡す。昭和は未だ良いにしても、大正 8 年と言われても 1919 年は計算できない。前もって 10 年毎の対比表を作成しておくと良い。経済の話で、突然 1,356,780,000 円と言われても訳しながら覚えていられないので、交代者が数字をメモして通訳者に渡す。

同時通訳の上達は普段の絶えざる本人の努力に尽きる。通訳しなくてすむ普段の学会や講演会や、またテレビやラジオを聴いていても、絶えず心の中で同時通訳をする練習を続ける。論文や抄録を phrase 毎に分解して、順番を変えずに通じるように翻訳する phrase translation の特訓を続ける事である。そのコツを体験していただくのがポイントである。

**EL-2**

# 学会発表の品質管理　－通訳しやすさの観点から－

**名取良弘**
飯塚病院　脳神経外科

脳神経外科にとって、品質を言う場合、『手術の技量に尽きる』と断言する方がいますが、果たしてそうでしょうか？品質が高い学会発表は、内容が高いことだけで決まるのでしょうか？　一方、医療では、品質＝医療安全と捕らえがちな一面もあります。これも果たしてそうなのでしょうか？

一般的に品質とは、顧客(患者)満足度と言われています。学会発表においても同様で、この場合の顧客は聴衆（学会参会者）となります。満足度が高い＝理解がしやすいことが基本ですが、先進性・教育性も兼ね備えなければ、学会発表には値しません。もちろん、理解しやすさは、通訳しやすさに通じています。スムーズに内容が頭に入っていく＝言われなくても次の言葉が連想されると、通訳も楽になります。（先走り、自分で講演しているかのように通訳するのも考え物ですが．．．．）

これらの点から質が高い発表の基本要素は、分かりやすい図と分かりやすい言葉で、これらが論理的に構成されていることも重要な要素です。難解な(今まで経験したことがない)内容であっても、分かりやすい図と言葉がそろうと理解も通訳もしやすくなります。

そこで、ひとつのミニ口演を以下の3つのパターンで示します。

1）　スライド内の説明がなしで　早口

2）　スライド内の説明が日本語で　言葉がゆっくり

3）　スライド内の説明が英語で　言葉がゆっくり

聴衆にとっては、2）がベストなのでしょうが、難解な日本語が示されていても英語の訳語が思い浮かばなければ通訳はお手上げです。通訳の立場では、3）がベストであるのは当然です。

しかし、同じ内容を三回聞けば、先の内容も読めてきますから、最後に1）をもう一回聞いてみると、質の低い口演であっても、ある程度ついていけるのではないでしょうか？　実際の講演で複数回聞くことは不可能ですが、これは同通には予習が必要であることを証明しています。

実際の講演では、講演の構成(品質管理の立場では PDCA)を整え、分かりやすいスピードで、話に見合った内容のスライドを示しながら発表をするのが質の高い発表となり、ひいては通訳しやすい発表となると考えます。

# ES

## Evening seminar

**桑山　直也**
富山大学　医学部　診療教授

**職　歴**

| | |
|---|---|
| 1982 年 | 筑波大学医学部専門学群卒業 |
| 1982 年 | 国立水戸病院脳神経外科　研修医 |
| 1985 年 | 富山医科薬科大学医学部助手 |
| 1994 年 | Clinical Research Fellow, Department of Neuroradiology, |
| | Presbitarian Hospital, Columbia university, New York, USA |
| 1997 年 | 富山医科薬科大学附属病院講師 |
| 2006 年 | 富山大学医学部准教授 |
| | 富山大学医学部診療教授 |

**資格等**

日本脳神経外科学会専門医

医学博士

日本脳神経血管内治療学会学会・指導医

日本脳卒中学会認定専門医

**学会役員等**

Senior member of the World Federation of Interventional Therapeutic Neuroradiology

日本脳神経血管内治療学会　理事（現在まで）

第 25 回日本脳神経血管内治療学会　会長（富山で開催）

NMC、脳神経外科ジャーナル、脳卒中の外科、日本脳神経血管内治療学会誌(JNET)

査読委員

**ES**

# 頚動脈血行再建術の最前線

**桑山直也**
富山大学 脳神経外科・脳血管内治療科

本邦における頚動脈ステント治療は、西暦2000年頃、バルンによる一時的な頚動脈血流遮断が可能になってから徐々に普及し始めた. その後、2007 年にプロテクト用のフィルターと頚動脈用のステントが薬事承認され、2008 年に「頚動脈ステント留置術(CAS)」として保険収載されたことで本格的に始まった. 当初は周術期に多発する血栓・塞栓症が問題視されたが、フィルターやプロテクトバルンの開発・改良、さらにはプラーク診断の進歩などにより、最近は治療成績が徐々に向上している. 現在本邦で多用されているフィルターは血管密着性が非常に秀逸で、いわゆる debris の通り抜けを効率的に防ぐことができる. またバルンは遠位内頚動脈の遮断にとどまらず、近位総頚動脈を遮断することで、より高率に頭蓋内塞栓症を阻止できるようになっている. さらに超音波、CT、MRI、PET などによるプラーク診断は CAS の合併症を飛躍的に軽減したと言える. 特に MRI はプラーク内血腫の存在や脂肪成分に富んだプラークの診断に大きく寄与している. すなわち、「MRA-TOF 高信号」かつ「T1 高信号」のプラークは血腫の存在を示唆し、また「MRA-TOF 等信号」かつ「T1 高信号」のプラークは脂肪成分に富んだプラークを示唆するということがわかっている. このようにデバイスの進歩とプラーク診断の進歩の両輪により、いわゆる「CAS 高危険群」の存在が明らかとなり、この高危険症例を避けることにより、CAS の成績が今後、向上することが期待される. さて、2004 年に発表された SAPPHIRE 研究においては 80 歳以上の高齢者においても頚動脈血栓内膜剥離術と CAS の治療成績に差がないという結論であったが、2010 年に発表された CREST 研究においては 70 歳以上の症例はむしろ CAS の合併症が多いと指摘された. 年齢の問題は現在でも controversial なカテゴリーであり、今後の課題となっている. 現時点で明らかな CAS のリスクは、アプローチルートの屈曲・狭窄、血流予備能低下例における術後過灌流現象、造影剤による術後腎機能障害、コレステリン塞栓症、大動脈弁狭窄症(低血圧、徐脈による心停止)である. プラーク診断に加え、これらの全身的なリスク項目を適切に評価することにより安全な CAS が施行できると考えている. セミナー当日は頚動脈ステント留置術に加え、頚部頚動脈解離症、頚部頚動脈瘤などの稀な疾患に対する血行再建術もまじえ、頚動脈血行再建術に関する様々な症例を供覧する.

## LS-1

## Luncheon seminar 1

**飯田　幸治**
広島大学病院　脳神経外科　講師

**略 歴**

1990 年　広島大学医学部医学科卒業
1990 年　広島大学医学部附属病院　研修医
　　国立呉病院　研修医
1991 年　広島大学医学部附属病院　医員
1998 年　広島大学大学院医学研究科博士課程終了
　　広島大学医学部　助手
2002 年　マッギル大学モントリオール神経研究所（カナダ） リサーチフェロー
　　トロント大学小児病院（カナダ） リサーチフェロー
2005 年　広島大学医学部学内講師
2012 年　広島大学病院　講師

**加入学会および資格等**

日本脳神経外科学会（代議員、専門医）
日本てんかん学会（評議員、専門医、専門医指導医、迷走神経刺激資格認定医）
日本てんかん外科学会
カナダ神経生理学会臨床脳波（てんかん）専門医
日本臨床神経生理学会（脳波認定医）
日本神経外傷学会
日本救急医学会（救急科専門医）

**受賞学術賞**

2000 年　広島広仁会賞
2006 年　広島臨床外科医学会賞
2010 年　財団法人てんかん治療研究振興財団研究褒章
2011 年　広島医学会総会ポスター演題優秀賞

**LS-1**

# 脳神経外科医のためのてんかん知識 -NEWER AED から手術まで-

**飯田幸治**
広島大学病院 脳神経外科

てんかんは、すべての年齢層にわたり発症する慢性機能的疾患であり、その診療において脳神経外科医が関与する機会は多い。近年、運転免許の許可や高齢者のてんかん発作などが社会的問題となっており、てんかん診療が改めて注目される中、より確実な診断と治療が求められている。こうしたてんかん診療において、新規抗てんかん薬 (NEWER AED)と外科手術の役割はきわめて大きい。てんかん発作の頻発した状態が持続した場合、発作の難治化が助長されるのみならず、特に若年者では脳の発達が阻害される。発作による悪影響は高次脳機能についても同様であり、これらを未然に阻止するためには、難治性てんかんの確実かつ早期の見極めと手術適応評価が重要である。NEWER AED の発作抑制作用は、従来の抗てんかん薬と比較して劣ることなく、かつ副作用の発現は低い。NEWER AED のうち、lamotrigine、levetiracetam は他剤に比べて特に良好な副作用プロフィールを有している。我々の施設での使用経験では、topiramate は前二者に比べて、長期服薬継続率は低いものの、二次性全般化発作などの重症発作に有効であった。Lamotrigine の耐用性は高く、発作抑制以外に、低い催奇形性や mood stabilizer としての副効果が期待しうる。Levetiracetam はさらに耐用性が高く、強い発作抑制かつ高齢者に併存しがちな他疾患に対する治療薬とも干渉がないなどの利点を有する。しかしながら、NEWER AED といえどもてんかん病態の難治性を変えるものではないため、副作用および発作抑制効果を考慮すれば、薬物治療においては第 2 選択薬などの早期併用の位置づけであろう。

一方、難治性が判明した場合には、時期を失することなく外科適応評価を行う必要がある。内側側頭葉てんかんではクラス I のエビデンスにより外科治療の優位性があきらかであるが、限局性 MRI 病変を有する場合には、外科治療が奏功する可能性が高いので、外科適応を治療開始時から念頭におくべきである。さらに、脳磁図や頭蓋内脳波における高周波成分解析など近年の診断機器の進歩により、MR 無病変例や広範囲におよぶ病変を有する例においても、確実なてんかん焦点局在が可能な症例が増えつつある。てんかん治療においては、てんかん発作の持続による脳機能廃絶を防ぐために、病態の末期ではなく、早期の NEWER AED 併用による難治性の見極めと適切な時期に外科治療を組み込む包括的診療が必要と考える。

## LS-2

## Luncheon seminar 2


### 山本貴道

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**職歴等**

| | |
|---|---|
| 1986 年 | 浜松医科大学医学部医学科卒業・同大学脳神経外科学教室入局 |
| 1987 年～1997 年 | 浜松医科大学脳神経外科教育関連病院勤務 |
| 1998 年 | Neurosurgery Research Fellow |
| | State University of New York |
| | Upstate Medical University, Syracuse, NY |
| 2001 年 | Neurosurgery Clinical Fellow |
| | NYU Comprehensive Epilepsy Center |
| | New York University Langone Medical Center, New York, NY |
| 2004 年 | New York University Wagner Graduate School of Public Service |
| | ニューヨーク大学ワグナー公共政策大学院・医療管理学修士課程修了 |
| 2004 年 | 聖隷浜松病院着任 脳神経外科・てんかん科主任医長 |
| 2008 年 | 聖隷浜松病院 てんかんセンター長（診療部長）就任 |
| 2011 年 | 聖隷浜松病院 院長補佐就任 |

**資格等**

医学博士（浜松医科大学)・医療管理学修士 (New York University)

米国医師資格 (ECFMG Certificate・New York USMLE Step 3)

てんかん専門医（日本てんかん学会）

脳神経外科専門医（日本脳神経外科学会)・脳卒中専門医（日本脳卒中学会）

Best Doctors in Japan (2010-2011)

**学会役員等**

日本てんかん外科学会世話人

関東機能的脳外科カンファレンス世話人

日本てんかん学会東海北陸地方会運営委員

東海てんかん集談会世話人

**LS-2**

# てんかん治療の基本と難治症例への対応

**山本　貴道**

聖隷浜松病院　院長補佐・てんかんセンター長兼任

てんかん治療の基本は抗てんかん薬であり、単剤での治療が推奨される。的確な薬剤選択がなされれば 70～80%のてんかんは良好に発作が抑制されるが、局在関連てんかんか全般てんかんかの鑑別がその第一歩となる。新規抗てんかん薬が登場し、選択肢は大幅に増えている。特に副作用が少なく服用後の QOL に関しては旧来薬よりも優れた点が多いが、現時点では新規抗てんかん薬を単剤では使用できないため、本邦においてはまだその利点が十分に理解されていない。

てんかんは軽症例から難治例までその幅は極めて広範にわたる。難治性てんかんでは薬物治療は限界と考えられ、外科治療を考慮しなければならない。適応の決定は発作時脳波・画像・高次機能検査などを組み合せて行われるが、施設の総合力が試される場でもある。最近ではこれに迷走神経刺激療法が加わり、これ以上為す術の無かった難治症例では大きな福音となっている。治療の全体像を供覧する。

**A case of Out-flow reduction treatment for a large fusiform aneurysm in the middle cerebral artery(M1)**

Yusuke Kinoshita, Toshiaki Osato, Yoshinobu Seo, Kenji Kamiyama, Toshiichi Watanabe, Kaori Honjo, Taku Asanome, Masahiro Okuma, Jyoji Nakagawara, Hirohiko Nakamura

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Proximal ligations have been often performed in many cases for large or giant cerebral aneurysms with difficulty of clipping, which is aimed to get aneurysms to shrink by reduction of hemodynamic stress into aneurysm. This is also known as so-called “in-flow reduction” because of proximal flow control of aneurysms. Some cases, however, got perforator infarctions due to thrombosis of blind-ending artery or growing aneurysms due to collateral flows. We report a case with a dilated fusiform aneurysm in the middle cerebral artery treated by "out-flow reduction". Reduction of hemodynamic stress into aneurysm and preservation of anterograde vascular flow were obtained. Fifty-four-year-old woman with dizziness was revealed a fusiform aneurysm in the left middle cerebral artery. M1 trunk itself dilated to 18mm in diameter. We perfomed high flow bypass from the external carotid artery to M2 with the radial artery graft and ligated just distal to the anterior temporal artery originating from the distal end of the aneurysm. Vasucular flow was reduced as it became suitable for anterior temporal artery. This was precisely the reason of "out-flow reduction". Post-operative 3DCT angiography showed shrinkage of the aneurysm and MR image demonstrated no fresh infarctions. But she suffered subarachnoid hemorrhage a month after surgery. We report effectiveness and problems including perioperative management.

**Key words:**
out-flow reduction
fusiform aneurysm　紡錘状脳動脈瘤
perforator infarctions　穿通枝梗塞
anterograde vascular flow　順行性血流
blind-ending artery　動脈の盲端

2

**Endovascular coil embolization for aneurysm arising from fenestration of suplaclinoid internal carotid artery.**

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**Background**: Fenestration of supraclinoid internal carotid artery (ICA) and associated aneurysm is rare. We report a case of aneurysm arising from fenestration of ICA, that was successfully treated by endovascular embolization.
**Clinical Presentation**: A 72-year-old woman, the ICA aneurysm and fenestration were found incidentally in the course of a workup study for dizziness. The diagnostic angiography revealed the right ICA with aneurysm distal to the fenestration. This aneurysm was treated by endovascular embolization. The aneurysm was completerly occluded, but 2 hours after the treatment, transient left hemiparesis and consciousness disturbance was occurred. MRI revealed fresh thalamic infarction. Fortunately, her condition was rapidly improved, and discharged without neurological deficits.
**Embryogenesis and Management**: The future ICA develops as a succession of plexiform segment separated by branching embryonic vessels. Rostral division gives rise to ACA, MCA, and anterior choroidal artery and the caudal division gives rise to the posterior communication artery. ICA fenestration can be explained by the persistence of these primitive plexiform channels. Aneurysms with ICA fenestrations were reported only 17 cases, and seemed to be relatively high incidence of rupture. These cases emphasize the importance of considering ICA fenestration, and accurately describing the anatomy for direct surgery or endovascular embolization. Intentional occlusion of the smaller trunk is possible to achieve complete packing of the aneurysm. However, perforating branches arising from the fenestration, careful antithrombotic treatment is necessary to prevent for ischemic complication.
**Conclusion**: Endovascular embolization is one good option to treat the aneurysm arising from the ICA fenestration.

**Key words:**
aneurys 動脈瘤
fenestration: 窓形成
internal carotid artery 内頸動脈
coil embolization コイル塞栓術

3

**My memory of intraoperative ruptures in aneurysmal clipping**

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**Background and Purpose**: Intraoperative ruptures in aneurysmal clipping come unexpectedly or under prediction. What is required to avoid unexpected disaster? Is it a skill or mind? I recall my memory of intraoperative ruptures.
**Materials and Methods**: I experienced about 1000 aneurysmal clippings in my life. As getting older myself, I do clipping surgery not as a chief surgeon but as an assistant. I pick up several memorable intraoperative ruptures made by myself or by others.
**Results**: The most memorable intraoperative rupture was a very high positioned basilar top aneurysm. To obtain a large operative field by mobilizing the internal carotid artery, the anterior clinoid process was removed. Almost finishing aneurysmal dissection, the aneurysm ruptured. This rupture was under prediction. But the bleeding was so massive. By keeping the operative field *in situ* without moving the microscope or changing the focus to apply a temporary clip to the basilar artery, I applied a clip to the aneurysmal neck. Time lapsed just one minute. After inspection, I found the clip obliterated a tiny perforator. Now I applied a temporary clip to the basilar artery and replaced the aneurysmal clip. The result was satisfactory and not disastrous. In contrast, I also experienced disastrous occasions that could have been avoided and since then harboring in my mind.
**Conclusion**: For patients who undergo surgery, the results are the all. An experienced neurosurgeon knows dos and don’ts during surgery. He is sure his surgery is perfect, but the results are not always satisfactory or even disastrous. Is it a failure or fate?

**Key words:**
aneurysmal clipping 脳動脈瘤クリッピング
intraoperative rupture 術中破裂

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**Evaluation of the initial process of reversible cerebral vasoconstriction syndrome using magnetic response angiography**

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**Introduction**: Reversible cerebral vasoconstriction syndrome (RCVS) is a cerebrovascular disorder associated with multifocal arterial spasms and nonaneurysmal subarachnoid hemorrhage (SAH). RCVS generally resolves within 12 weeks and has a benign prognosis. However, its mode of onset is not fully understood. Therefore, in this study, we determined the initial processes underlying RCVS by magnetic response angiography (MRA) in three patients, and sought to identify the peak timing of vascular constriction.
**Patients and Results:** All three patients were women. Their age ranged from 50 to 58 years. In two women, the chief complaint was sudden severe headache, while the other women reported headache with a gradual onset. Computed tomography showed that all three patients had scant SAH affecting the parietal cortex. In one patient, the SAH was not detected by magnetic resonance imaging 7 days previously. There was no evidence of a ruptured aneurism. MRA revealed that the vasoconstriction started in the distal arteries and propagated to their main trunks. Vasoconstriction reached peak levels at 8, 14 and 17 days after the onset of headache.
**Conclusion:** Most patients with RCVS report sudden and severe headache. However, abnormal findings are not apparent on initial images in 50% of cases. Therefore, if RCVS is suspected, repeated radiological studies are necessary during the first 3 weeks. Parietal SAH seems to be a characteristic feature of RCVS. Therefore, clinicians should not only focus on the major vessels, but also the distal arteries.

**Key words:**
reversible cerebral vasoconstriction syndrome 可逆性脳血管攣縮症候群
nonaneurysmal subarachnoid hemorrhage 非動脈瘤性くも膜下出血
thunder clap headache 雷鳴様頭痛

**Vasodilation induced by increased extracellular magnesium concentration in cerebral penetrating arterioles**

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**Background and Purpose**-Magnesium is a well-known neuroprotective as well as vasodilatory agent. Experimental and clinical studies have demonstrated the beneficial effects, safety and feasibility of administrating magnesium in subarachnoid hemorrhage (SAH). Although magnesium is thought to act as a cerebral vasodilator by blocking the voltage-dependent calcium channels, the other signaling mechanisms in the cerebral microcirculation remain unclear. This study was therefore conducted to clarify the mechanisms of magnesium-induced vasodilation.
**Methods**-Male rat penetrating arterioles were isolated, cannulated and pressurized. Vessel diameters were recorded by computer-aided videomicroscopy. To investigate the mechanisms of magnesium-induced vasodilation, several inhibitors and endothelial impairment were examined.
**Results**-1) Increased extracellular magnesium concentration produced concentration-dependent vasodilation in cerebral penetrating arterioles. 2) This vasodilation was partially attenuated by non-specific calcium-sensitive potassium channel inhibitor tetraethylammonium, but not by voltage-dependent potassium channel inhibitor 4-aminopyridine, ATP-sensitive potassium channel inhibitor glibenclamide, and inward rectifier potassium channel inhibitor 30 μM $BaCl_2$. 3) Neither the nitric oxide synthase inhibitor L-NNA nor endothelial impairment induced by air embolism reduced the dilation.
**Conclusions**-Increased extracellular magnesium concentration induced concentration- and smooth muscle cells-dependent dilation in cerebral penetrating arterioles. Calcium-sensitive potassium channels may play a pivotal role on magnesium-induced vasodilation, and further studies for elucidating the signaling mechanisms in specific calcium-sensitive potassium channels are needed. These results will provide some background for the clinical use of magnesium, especially in treatment against delayed cerebral ischemia or vasospasm following SAH.

**Key words:**
Magnesium マグネシウム、arteriole 細動脈、 potassium channel カリウムチャンネル、 calcium-sensitive カルシウム感受性、 voltage-dependent 電位依存性、 ATP-sensitive ATP 感受性、 inward rectifier 内向き整流

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**Clinical features of intracranial vertebral dissection without hemorrhage and infarction**

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**Purpose:** Noninvasive neuroimaging techniques are increasingly identifying unruptured intracranial vertebral artery dissection. Non-hemorrhagic vertebral artery dissection without ischemic lesion is also increasingly diagnosed, but the natural history is not known.
**Methods:** This study included 15 consecutive patients presented with symptomatic intracranial vertebral artery dissection without intracranial hemorrhage and infarction on computed tomography (CT) and magnetic resonance (MR) image between 2000 and 2010. The diagnosis was suggested by characteristic geometry including irregular stenosis, dilatation, Pearl & string sign and double lumen on three-dimentional CT angiography or MR angiography. The number of male to female was 10 to 5, and the mean age was 57.0 years of age. Retrospective analysis was performed in the follow-up interval of 2.7 years.
**Results:** Initial symptoms at admission were headache in 11, vertigo in 3, numbness in 1 and transient hemiparesis in 1. Lesion of dissection localized in vertebral artery in 12 and others in 3. Initial geometry was irregular stenosis in 3, dilatation in 6, Pearl & string in 5, double lumen in 1. Geometrical changes were observed in 4 cases. All changes were detected within 1 month from diagnosis. Two cases of Pearl & string presented with subsequent subarachnoid hemorrhage, which were in less management of hypertension and frequent radiological follow-up.
**Conclusions:** Geometrical changes of non-hemorrhagic cases without infarction were observed within 1 month after initial symptom in accordance with the previous report. Our data suggests the importance of management of stroke risk and cautious follow-up after the initial symptom.

**Key words:**
arterial dissection 動脈解離
vertebral artery 椎骨動脈

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**Tonsillar hemorrhage due to dural arteriovenous fistula of the posterior fossa: case report**

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**Case presentation:** We report a rare case of posterior fossa dural arteriovenous fistula (AVF) presenting cerebellar hemorrhage with significant brain edema. A 75-year-old man presented imbalance and gait disturbance. He had malignant melanoma of the toe 5 years ago and it was resected successfully, then no recurrence so far. He visited a neurosurgical clinic and cerebellar dysfunction was pointed out. MR images demonstrated right tonsillar T2 high intensity lesion with small hemorrhage. Diffusion weighted images did not indicate diffusion impairment. Contrast-enhanced MR images indicated enhanced lesion on the right tonsil. He was diagnosed with metastatic brain tumor of malignant melanoma and transferred to our hospital. Corticosteroid was administered and his cerebellar symptoms were getting better. One week after admission, T2-high area of right tonsil was decreased and the enhanced area was also shrunk. Cerebral angiography demonstrated dural ateriovenous shunt between posterior meningial branch of vertebral artery and right inferior vermian vein. Dural AVF involved retrograde leptomeningeal venous drainage without draining into dural sinus. We diagnosed cerebellar hemorrhage due to dural AVF of the posterior fossa. The enhancement of tonsillar veins disappeared 1 months after the admission. The restriction of venous drainage presumably caused venous hypertension, leading to tonsillar hemorrhage.

**Key words:**
dural arteriovenous fistula　硬膜動静脈瘻
inferior vermian vein　下小脳虫部静脈

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**Our treatment strategy of cerebral arteriovenous malformation: Safer radiosurgery combined endovascular surgery**

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**Purpose:** we analyzed to define the benefits and risks of gamma knife radiosurgery (GKS) for arteriovenous malformation (AVMs) patients who underwent prior embolization.
**Materials and Methods:** Between 1999 and 2010, we performed GKS on 281 patients with cerebral AVMs (nidus volume less than 10.0 $cm^3$); 78 patients underwent embolization prior to GKS (group A), 203 patients without embolization (group B). We evaluated obliteration rate, latency interval hemorrhage and symptomatic delayed radiation injury (DRI) compared between 2 groups using Kaplan-Meier method. Our treatment policy is that embolization prior to GKS is necessary for large volume AVM (more than 10.0 $cm^3$), high-flow AVM, intranidal aneurysm and external carotid artery supply in order to reduce the risk of AVM bleeding during latency period and DRI.
**Results:** In this study, 49 patients (63%) had at least one prior hemorrhage in group A and 128 patients (63%) included in group B. The median target volume was 3.4 $cm^3$ (range 0.05 to 9.6) in group A and 2.4$cm^3$ (range 0.05 to 9.2) in group B($p<0.01$). The median peripheral dose was 19 Gy in group A and 20 Gy in group B ($p=0.06$). The actuarial obliteration rates on angiography at 4 years were 84% in group A and 86% in group B ($p=0.37$). Latency interval hemorrhage developed in 1 case at group A (cumulative risk was 1.1% at 10 years) and 8 cases at group B (6.9% at 10 years) ($p=0.24$). Symptomatic DRI was observed 1 case in group A (cumulative risk was 2.5% at 10 years), 8 cases in group B (6.5% at 10 years) ($p=0.15$)
**Conclusions:** Our study demonstrated that prior embolization did not change the obliteration rate while it may reduce the risk of AVM bleeding and DRI after GKS.

**Key words:**
arteriovenous malformation 脳動静脈奇形，gamma knife radiosurgery ガンマナイフ治療
delayed radiation injury 晩発性放射線障害

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**Continuously measuring wakeful level of stroke patients by using bispectral index (BIS) monitor for grasping individual pattern**

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**Rationale:** The patients with dysphagia easily cause aspiration pneumonia. When their wakeful level is low, oral intake is very difficult. We already reported the importance of assessment of such patients' wakeful level by using BIS monitor last year. This time we succeeded to continuously measure BIS data of stroke patients for longer time. We report the temporal change of BIS score.
**Subject and method:** We measured BIS score of 15 cases in 10 patients, who had been hospitalized because of stroke and pneumonia, for more than 15 hours a day. There were 3 man and 7 women, and their mean age was 80 year-old (53~100). We used BIS monitor (BIS A-3000, Nihon Koden, Japan), which is widely used in anesthesiological field for subjective assessment of sedation level. The score of 100-90 means "awakening", 80-65 means "sedated", less than 30 means "coma", and 0 means "deep coma". The wakeful level is expressed subjectively by BIS monitor.
**Results:** Overall mean of BIS score in 15 cases was 70. According to time course, mean of BIS score around 11 a.m. was71, around 12 a.m. was73, and around 2 p.m. was 79. Eight cases, which underwent enteral nutrition with nasal-tube, showed lower BIS score than other cases with oral intake. Especially 2 cases with enteral nutrition showed low BIS score as about 30 around 12 a.m. But they showed high BIS score more than 80 around 2 p.m. They might have oral intake, if meal time is late.
**Conclusion:** When a patient shows low reactivity because of stroke, it is difficult to identify the correct wakeful level by simple stimulation. BIS monitor is thought to be useful for grasping the correct wakeful level of patients. We should select correct indication of nutritional way for each patient along with patient's individual pattern by using BIS monitor.

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**Cerebral venous thrombosis after ventriculoperitoneal shunt**

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**Abstract**
Ventriculoperitoneal shunting (VPS) is a simple procedure but there are several potential complications. We experienced the first reported case of cerebral venous thrombosis after VPS. A 69-year-old man with low protein C suffering from normal pressure hydrocephalus underwent left VPS. Two months later he developed cerebral venous thrombosis and cerebral venous hemorrhage in the left frontal lobe, possibly due to intracranial hypotension caused by the VPS, compression of the cortical vein from the shunt tube induced by brain shift, and thrombophilic diathesis. We must be aware that cerebral venous thrombosis can occur after VPS.

**Key words:**
cerebral venous thrombosis　静脈血栓症
ventriculoperitoneal shunt　脳室腹腔シャント
intracranial hypotension　低髄圧
protein C deficiency　プロテインC欠損症

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**A case report of survival traumatic atlanto-occipital dislocation**

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**Background and Purpose:** Traumatic atlanto-occipital dislocation is a devastating injury. It often results in a fatal outcome and is therefore identified most frequently at postmortem examination. We report a survival case of traumatic atlanto-occipital dislocation.
**Patient:** A previously healthy 57-year-old woman was travelling with her friend in car. She was seated in the front passenger seat. The car struck the wall with about 50km/h speed. Her consciousness level was JCS 10, GCS13 (E3V4M6) and had dyspnea and tetraplegia when ambulance arrived. She was transferred to our emergent service by doctor helicopter with suspect of having spinal cord injury. Radiological examination revealed atlanto-occipital dislocation (basion-dens interval: 13mm, Powers ratio: 1.0) and multiple costal cartilage fracture. High dose methylprednisolone was used. Because of having frail chest, she was intubated and had ventilating support in the intensive care unit. On hospital day 14, the patient underwent posterior fixation (Occipital plate-C1 lateral mass screw-C2 pedicle screw) with iliac crest bone graft. Dura was lacerated and primary repair was deemed impossible, a muscle pieces were used to repair. Philadelphia type cervical collar was maintained after surgery.
**Result:** The patient suffered meningitis and high grade fever postoperatively. Follow up MRI revealed adhesive arachnoiditis. Fever relieved after continuous antibiotics injection. Abducens nerve palsy was gradually improved, but extremities dysesthesia and thermal hypoesthesia remain. She had rehabilitation treatment and achieves independent life.
**Conclusion:** Traumatic atlanto-occipital dislocation usually causes extremely serious damage and leads to fatal situation. A high degree of suspicion, immobilization of cervical spine while transferring and intensive care were mandatory. We present our survival case of atlanto-occipital dislocation with literature reviews.

**Key words:**
motor vehicle injury 交通外傷
craniocervical junction 頭蓋頸椎移行部
atlanto-occipital dislocation 後頭骨環椎脱臼

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**Atlanto-Occipital Dislocation (AOD)**

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**Introduction:** Atlanto-occipital dislocation (AOD) is an uncommon traumatic injury frequently associated with a high mortality rate. We present here a patient with AOD who survived because of careful primary care and efficient surgical management.
**Case Presentation:** The patient was a 33 year-old man who fell from a height of 10 m. On arrival at the hospital, his Glasgow Coma Scale score was E2V(T)M6. Radiological examinations showed multiple injuries. A lateral cervical X-ray showed marked upper cervical prevertebral soft tissue swelling. Cervical spine computed tomography (CT) showed distraction and anterior dislocation between the occipital condyles and the atlas (basion-dens interval:15mm). Angiography showed stretching of the internal carotid and vertebral arteries.
Cervical stabilization with a halo vest was started on the second day. However, the distraction of the craniocervical junction had further deteriorated, and correction was therefore attempted. His level of consciousness improved after reduction probable due to increase in his cerebral blood flow.
On the 16th day when the patient's general condition was stabilized, O-C2 fixation was performed under guidance of a navigation and fluoroscope. Rigid fixation was achieved between the occiput and C2. The patient was able to return to his normal daily activities postoperatively.
**Discussion and Conclusion:** With recent improvements in pre-hospital care, the number of reports of AOD survivors is increasing. Cervical X-ray, CT and magnetic resonance imaging are essential for the diagnosis of this injury. Because of the high risk of distraction at the craniocervical junction, a halo vest is more appropriate than cervical collars or traction. Horn's classification is used to determine if surgery is indicated.

**Key Words:**
occipital condyle 後頭骨顆台
atlas 環椎
atlanto-occipital dislocation (AOD) 環椎後頭骨脱臼
pedicle screw 椎弓根スクリュー

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**Space Shuttle laminotomy for lumbar canal stenosis**

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**Purpose:** Minimum invasive surgical technique for lumbar canal stenosis (LCS), named Space Shuttle laminotomy (SSL), will be presented.
**Background:** Establishing appropriate decompression for LCS, it is important to know where the ligamentum flavum (LF) attached and to preserve facet joint to avoid post-operative instability. LF has both medial and lateral portion. Anatomically we consider these two portions give us good landmark to for appropriate decompression.
**Patients and methods:** After 10mm width laminotomy, the lateral portion of LF will be removed when decompressing inferior facet joint. In addition, removing medial portion of LF is also key for appropriate decompression. To establish this procedure, the shape of decompression becomes like Space-Shuttle, which was the space ship of the United States. We name the decompression method as Space Shuttle laminotomy. Thirty seven patients (M:F=27:10), aged ranged from 43 to 87 (average 67), with LCS were treated by SSL from January 2008 to May 2010 in Mita Hospital. All the patients were evaluated with the Japanese Orthopaedic Association (JOA) scores, dynamic radiographies, and MR Image's.
**Result:** Pre & post average JOA scores were 12.8 and 27.8. Surgeries were undergone 14 cases in 1 level, 12 in 2 levels, 6 in 3 levels, and 5 in 4 levels. There was no instability, spondylolisthesis and adjacent level stenosis in post-operative radiographies.
**Conclusion:** Even further follow-up is necessary; currently there is no case of post-operative instability. Good understanding of LF anatomy and its function enables us to accomplish appropriate decompression without creating instability as SSL.

**Key words:**
lumber canal stenosis 腰部脊柱管狭窄症
laminotomy 椎弓切除術
ligamentum flavum (LF) 黄色靭帯

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**Plasmapore-Coated Titanium Cervical Cages Induce More Rapid Bone Fusion After Anterior Cervical Discectomy and Fusion as Compared to Non-Coated Titanium Cages: A 2-Year Follow-Up Study**

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**Purpose**: The aim of this study was to compare the bone fusion rates achieved following the use of plasmapore-coated titanium cages (PPC group) and non-plasmapore-coated titanium cages (N-PPC group) for up to 2 years in patients who received anterior cervical decompression and fusion (ACDF).
**Methods**: From May 2006 to April 2010, 78 patients received ACDF at our institute. Of these patients, a follow-up period greater than two years was possible for sixty-one patients, including 19 in the PPC group and 42 in the N-PPC group. Evaluations were performed at 3, 6, 12, and 24 months after surgery. Radiological stabilization (RS) was defined as the restriction of spinous process movement to less than 3 mm and the absence of a halo around the cages. Solid bone fusion (SBF) was defined as the formation of bony bridges between the fixed vertebral bodies in sagittal computed tomography sections. The rates of RS and SBF were compared between the PPC and N-PPC groups.
**Results**: The differences in RS were not significant between the two groups during the follow-up period. However, the SBF rates at 6 and 12 months were significantly higher in the PPC group (21% at 6 months and 57.9% at 12 months) than the N-PPC group (4.8% at 6 months and 21.4% at 12 months). Moreover, 73.7% (14 of 19) of patients in the PPC group demonstrated RS at 3 months, and of these patients, SBF was observed in 71% (10 patients) and 100% (14 patients) after 12 and 24 months, respectively.
**Conclusions**: Plasmapore-coated titanium cages enabled more rapid solid bone fusion than did non-plasmapore-coated titanium cages.

**Key words:**
ACDF 頸椎前方除圧固定術、RS 放射線学的安定性、SBF 骨癒合
plasmapore-coated titanium cages プラズマ加工椎体間ケージ

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**An adult case of intracranial peripheral-type primitive neuroectodermal tumor(pPNET)**

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**Background:** Ewing sarcoma/pPNET is small blue round cell tumor which usually involve the soft tissue and bone in the childhood and adolescent. This tumor is characterized by a t[11;22][q24;q12] translocation leading to oncogenic activation of the EWS gene. Here we report a rare case of intracranial pPNET affecting an elderly.
**Case Presentation:** Patient was a 72 year-old man who had a mild headache. Brain MRI demonstrated a right frontal dural-based extra-axial mass suggestive of meningioma. After two weeks, however, his symptom got worse and repeated CT/MRI showed significant enlargement of the tumor with intratumoral hemorrhage. Angiography showed no tumor stain. The tumor was resected by frontal craniotomy. Tumor consisted of blue small cells immunoreactive for CD99, and FISH analysis revealed presence of the t[11;22][q24;q12] translocation, the molecular signature of the pPNET. Spine MRI showed dissemination to cauda equine. The patient underwent multi-agent chemotherapy, but the dissemination to the CSF deteriorated. Radiation therapy was administered, but he deceased after 6 month from the resection.
**Discussion:** Ewing Sarcoma/pPNET occurs rarely in the central nervous system. When it occurs as an intracranial lesion, it often presents as a well demarcated dural based extraaxial mass resembling meningiomas. However, the clinical course is dramatically different from meningiomas and dissemination at its early stage seems to be common. Proper knowledge and diagnosis with the molecular genetic assay may help to manage those patients with prompt screening for the whole CNS and undelayed administration of adjuvant therapy including chemotherapy and radiation therapy.

**Keywords:**
Ewing sarcoma　ユーイング肉腫
pPNET　末梢性原始神経外胚葉性腫瘍
translocation 転座
intratumoral hemorrhage 腫瘍内出血
multi-agent chemotherapy 多剤併用化学療法
dissemination 播種
ongogenic 腫瘍形成性の

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**Atypical teratoid rhabdoid tumor with subarachnoid spreading like plastic ependymoma: A case report**

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**Introduction:** Atypical teratoid rhabdoid tumor (AT/RT) is a highly malignant embryonal brain tumor that primarily affects young infants. On neuroimaging, AT/RT typically displays similar characteristics to primitive neuroectodermal tumor or medulloblastoma. Here, we present a case of AT/RT with subarachnoid spreading similar to that seen in plastic ependymoma.

**Case Report:** A two-year-old female presented to our hospital with gait disturbance. Computed tomography and magnetic resonance imaging showed a cerebellar tumor which was enhanced with contrast medium. The tumor fully occupied the fourth ventricle and caused hydrocephalus. The tumor protruded from the left cerebellomedullary fissure and spread into the subarachnoid space, occupying the left cerebellopontine angle, ambient cistern, and quadrigeminal cistern. Its developing form suggested plastic ependymoma. However, diffusion-weighted imaging (DWI) demonstrated high intensity and a low apparent diffusion coefficient (ADC), indicating a malignant tumor with high cellularity. The patient underwent a midline suboccipital craniotomy in which 80% of the tumor was removed. The tumor was soft and easy to bleed. Pathological examination revealed round and spindle shaped primitive cell proliferation. There were foci of rhabdoid cells, and mitosises were frequently identified. Immunohistochemical results revealed negative INI-1 reactivity. The final diagnosis was AT/RT and the patient was treated with chemotherapy.

**Conclusion:** The present case indicates that AT/RT can spread with plastic features and that DWI and ADC are useful for preoperative differential diagnosis.

**KeyWords:**

atypical teratoid rhabdoid tumor　非定形奇形腫様ラブドイド腫瘍　エーティーアールティー
plastic ependymoma　可塑性の上衣腫　プラスティック・エペンディモーマ
diffusion-weighted imaging (DWI)　拡散強調画像
apparent diffusion coefficient (ADC)　拡散係数

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**Visualizing, tracking neural function with continuous direct brainstem evoked potentials discriminate reversible injury by intraoperative extended recuperating treatment and improved functional preservation in acoustic neuroma surgery.**

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**Background:** Adult cranial nerve, particularly cochlear nerve, is extremely vulnerable to various insults and never recovers in brain surgery. The accumulating evidence of the reversible injury of cranial nerve, however, raises the possibility of restoring the nerve function by making the injuring period minimum and the recuperating period maximum immediately after the insult.
Methods: A new application of continuous direct brainstem evoked potentials: auditory evoked dorsal cochlear nucleus action potentials (AEDNAPs) for cochlear nerve and continuous facial nerve root evoked muscle action potentials (FREMAP) for facial nerve for monitoring retrosigmoid acoustic neuroma resection enabled us to analyze the factors affecting with attempted complete functional preservation. 67 patients underwent continuous direct AEDNAPs and FREMAP monitorings that visualize and track these neural functions throughout the entire procedure. Whenever these responses declined to 40% and 65% of initial responses respectively, intentional intraoperative extended recuperating treatment (IERT) up to 30 minutes for AEDNAP and 15 minutes for FREMAP were taken until those responses return to the determined level so as to discriminate the reversible injury (IERT strategy group). 23 patients (monitoring alone group) did have AEDNAP and FREMAP monitoring only.
**Findings:** Patients who received AEDNAP and FREMAP monitorings together with IERT had significantly better functional preservation rate compared with those who just received AEDNAP and FREMAP monitorings alone. (P=0.014 for AEDNAP monitoring, and p=0.002 for FREMAP monitoring).
**Interpretation:** Visualizing neural function and rescuing reversible injury by IERT with new intraoperative continuous AEDNAP and FREMAP improved functional preservation in acoustic neuroma surgery.

**Key words:**
cochlear nerve 蝸牛神経, facial nerve 顔面神経, acoustic neuroma surgery 聴神経腫瘍手術, continuous direct brainstem evoked potential monitoring 持続直接脳幹誘発モニタリング, functional preservation 機能温存, intraoperative recuperating treatment 術中回復療法, visualizing neural function 神経機能の見える化

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**Staged stereotactic radiation therapy for metastatic brain tumor: optimal dose and fractionation**

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**Purpose:** Dose-effect data are scarce in stereotactic radiation therapy for brain metastases (BM). We applied 3 and 2 staged stereotactic radiation therapy (SRT) using the gamma knife for large BM. To determine optimal fractionation and dose, we evaluated the results of staged SRT for BM retrospectively.
**Patients and Methods:** The subjects were 243 patients with BM (128 men and 106 women). Major primary tumors were the lung in 45.7% of the patients. Two stereotactic radiation techniques were applied for the patients: 10 Gy of peripheral dose (PD) in 3 fractions with 2-week interval (113 patients); 13-14 Gy in PD in 2 fractions with 3-4 week interval (121 patients). The mean tumor volume prior to treatment was 14.8 $cm^3$. The local tumor control rate, overall (OS), neurological death free (ND) and impaired ADL [Karnofsky performance state (KPS) < 70] free survivals (iADL) were calculated using the Kaplan-Meier method.
**Results:** There were no differences in age, gender, KPS, activity of extracranial malignancy, primary organs and tumor volume between two groups. The median overall survival period was 8.3 months. We did not find differences in OS, ND and iADL between 2 groups. Local tumor control rates were 75.2% and 70.0% at 12 months in 3 staged and 2 staged SRT, respectively. Radiation induced edema occurred in 3.8% of the lesions.
**Conclusions:** Both of two staged SRT methods revealed similar tumor control rate, OS, ND and iADL for BM patients. CNS neurotoxicity was less compared with single-session radiosurgery.

**Key words:**
interfraction interval　照射間隔
peripheral dose　辺縁線量
stereotactic radiotherapy　定位的放射線治療
tumor control　腫瘍制御

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**Gli3 is associated with neuronal and glial differentiation in medulloblastomas**

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**Background and purpose:** Medulloblastomas (MBs) can be subdivided into four distinct molecular variants. Abnormal sonic hedgehog (Shh) signaling is noted in the Shh group, and many desmoplastic / nodular (D/N) MBs are represented in this group. Gli3, a downstream protein of the Shh pathway, is thought to regulate neuronal and glial differentiation in MBs.
**Method:** 32 newly diagnosed MBs receiving whole neuraxis radiation and/or chemotherapy between 1982 and 2011 were included. Neuronal and glial differentiations were assessed by HE findings and NeuN, DCX, and GFAP immunopositivity.
**Results:** Fourteen (44%) were classified as no differentiation type, and all were Gli3 negative. Of the 18 (56%) MBs showing differentiation, 17 were Gli3 positive, 15 showed only neuronal differentiation and 3 showed both neuronal and glial differentiation. MBs showing only neuronal differentiation had longer overall and progression free survivals than non-differentiation types (both p less than 0.01). Double-labeling immunoflourescence and ultrastructural studies showed a presence of Gli3 at the nuclear membrane of tumor cells showing neuronal and glial differentiation.
**Conclusion:** Gli3 expression is associated with neuronal and glial differentiation in MBs. Prognosis was good in Gli3 positive MBs showing only neuronal differentiation.

**Key words:**
medulloblastoma 髄芽腫
Gli3
neuronal differentiation 神経細胞分化
glial differentiation グリア細胞分化
nuclear membrane 核膜

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**c-Myc illustrates a threshold model for tumour initiation in glioblastoma**

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Recent evidence suggests that glioblastomas are driven by Tumour Initiating (TI) cells capable of xenograft formation and indefinite propagation. The mechanisms dictating TI capacity remain poorly understood. Two potential models include: the “elite” model, in which TI capacity is restricted to a select subpopulation, and the “stochastic” model, in which any cell can acquire it. To determine which model is more applicable to glioblastomas, we examined TI capacity of subclones isolated from a glioblastoma line as well as that of single cells derived from each subclone. Only a subset of the subclones possessed TI capacity, suggestive of the elite model. However, cells derived from any single subclone exhibited a wide range of TI capacity, suggesting a stochastic component. Transcriptome profiling of the subclones revealed a gene signature associated with TI capacity that was enriched for genes regulated by c-Myc. c-Myc expression levels correlated with TI capacity. Further, c-Myc overexpression increased TI capacity of cells in xenograft and Ink4a/ARF-null murine models. Our results suggest a threshold model in which TI capacity is driven by expression levels of critical factors including c-Myc.

**Key words:**
Glioblastoma 神経膠芽腫、Tumor Initiation 腫瘍形成、cMyc、
Cancer stem cell 癌幹細胞

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**Application of $^{62}$Cu-ATSM PET imaging to predict highly malignant grades and hypoxia-inducible factor-1α expression in patients with glioma**

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**Purpose:** Hypoxic tissue evaluation in glioma is important to predict treatment response and establish anti-hypoxia therapy. In this preliminary study, $^{62}$Cu-ATSM PET was used to determine its validity as biomarker for distinguishing tumor grade and tissue hypoxia.
**Methods:** $^{62}$Cu-ATSM PET was performed in 22 patients with glioma and the $^{62}$Cu-ATSM $SUV_{max}$ and T/B ratio were semiquantitatively evaluated. $^{62}$Cu-ATSM uptake distribution was qualitatively evaluated and compared with MRI findings. HIF-1α expression, a hypoxia marker, was compared with $^{62}$Cu-ATSM uptake values.
**Results:** The $^{62}$Cu-ATSM $SUV_{max}$ and T/B ratio were significantly higher in grade IV than in grade III gliomas ($P$ = 0.014 and 0.018, respectively), whereas no significant differences were found between grade III and grade II gliomas. At a T/B ratio cutoff threshold of 1.8, $^{62}$Cu-ATSM uptake was predictive of HIF-1α expression with 92.3% sensitivity and 88.9% specificity. The mean T/B ratio was also significantly higher in HIF-1α-positive glioma tissue than in HIF-1α-negative tissue ($P$ = 0.001). Using this optimal threshold of T/B ratio, $^{62}$Cu-ATSM PET showed regional uptake in 61.9% (13/21) of tumors within contrast-enhanced region on MRI, which was significantly correlated with presence of necrotic component ($P$ = 0.002).
**Conclusions:** Our results demonstrated that $^{62}$Cu-ATSM uptake is relatively high in grade IV gliomas and correlates with MRI findings of necrosis. Moreover, the $^{62}$Cu-ATSM T/B ratio showed significant correlation with HIF-1α expression. Thus, $^{62}$Cu-ATSM appears to be a suitable biomarker for predicting highly malignant grades and tissue hypoxia in patients with glioma.

**Key Words:**
Hypoxic imaging, $^{62}$Cu-ATSM PET, HIF-1α expression, glioma

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**Oncogenic EGFR signaling activates an mTORC2-NF-κB pathway that promotes chemotherapy resistance**

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**Objective:** Hyperactivated PI3K signaling occurs in nearly 90% of glioblastomas (GBMs) making mTOR a compelling therapeutic target. mTOR exists in two multi-protein complexes mTORC1, which integrates Akt signaling with protein translation, and mTORC2, whose role is not well understood.
**Materials and Methods:** We used integrative genetic and pharmacologic analyses of GBM cell lines and mouse models, and analyzed clinical samples of 135 GBM patients.
**Results:** We showed that the common activating EGFR mutation (EGFRvIII) stimulates mTORC2 kinase activity, which is partially suppressed by PTEN. mTORC2 signaling promotes GBM growth and survival, and activates NF-κB. Importantly, this mTORC2-NF-κB pathway renders GBM cells and tumors resistant to DNA-damaging chemotherapy in vitro and in vivo, and genetic or pharmacologic abrogration of mTORC2- NF-κB signaling sensitizes GBMs to treatment-induced cell death. In addition, mTORC2 signaling is activated in the majority of clinical GBM samples, in association with NF-κB and phospho–EGFR.
**Conclusion:** These results highlight the critical role of mTORC2 in GBM pathogenesis, including through activation of NF-κB downstream of mutant EGFR, leading to a previously unrecognized function in cancer chemotherapy resistance. These findings suggest that therapeutic strategies targeting mTORC2, alone or in combination with chemotherapy, will be effective in this challenging disease.

**Key words:**
EGFR　上皮成長因子受容体
mTOR　哺乳類ラパマイシン標的タンパク質
NF-κB　核内因子κB（転写因子）
Chemotherapy resistance　化学療法抵抗性

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**Expression of Ki-67 in Predicting Progression of Postoperative Residual Pituitary Adenomas, and Clinical Feature of Atypical Adenomas**

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**Objective:** The WHO Tumors of Endocrine Organs defines atypical pituitary adenomas as tumor with Ki-67 labeling index higher than 3%, excessive p53, increased pleomorphism. The real value of labeling index correlating with tumor progression is controversial.
**Materials and Methods:** To clarify this value, we investigated and statistically analyzed 39 cases of pituitary adenomas with and without progression in the residual adenoma after surgery. We also tried to clarify the clinical feature of atypical adenomas.
**Results:** Pituitary adenomas with progression had a mean proliferation index of 3.66%±3.00%(mean±SD), and it was significantly higher than cases without progression of 1.89%±1.25% ($p<0.05$). With the use of Receiver Operating Characteristic Curve analysis, a threshold level of Ki-67 expression greater than 2.0% predicts progression with high specificity. As other clinical variables, younger patients had higher MIB-1 index and more progressive ($p<0.05$). Adenomas with cavernous sinus invasion, functioning adenomas, giant adenomas had higher MIB-1 index($p<0.05$). More completely removed tumors were less progressive. Atypical adenomas revealed recurrence.
**Conclusion:** A threshold of 2% for the MIB-1 labeling index predicts higher risk of progression of residual adenomas after surgery, and shorter term of imaging follow-up, and early initiation of adjuvant therapy might be required. Atypical adenomas tend to be large, invasive and resist to conventional therapy.

**Key words:**
atypical pituitary adenomas 異型性下垂体腺腫
pleomorphism 多形性
invasive 浸潤性
threshold 閾値,

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**Internal carotid arterial shift after transsphenoidal surgery in pituitary adenoma patients**

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**Background:** The movement of the cavernous carotid artery (CCA) during transsphenoidal surgery is not known.
**Objective:** To measure the intercarotid distance (ICD) between CCAs in pituitary adenoma patients before and after transsphenoidal surgery.
**Methods:** We retrospectively reviewed the medical records of 109 pituitary adenoma patients who were treated with resection via transsphenoidal approach. The CCA diameter and the ICD between CCAs were measured from magnetic resonance images obtained prior to surgery and at early and delayed time points after surgery.
**Results:** The CCA diameter was similar at the preoperative, early postoperative and delayed postoperative time points**.** The ICD between CCAs was shorter at the early postoperative time point (19.7 ± 4.5 mm) than at the preoperative time point (20.9 ± 4.9 mm P = .022). The greatest ICD contraction observed was 6.2 mm from pre to early postoperative time points. Cavernous sinus invasion of adenoma was independently associated with ICD contraction >2 mm (P = .0273).
**Conclusion:** It is important to know the change in ICD between CCAs after transsphenoidal surgery, particularly for pituitary adenomas that have cavernous sinus invasion.

**Key words:**
cavernous carotid artery 海面綿静脈洞部内頸動脈
intercarotid distance 頸動脈間距離
pituitary adenoma 下垂体腺腫
transsphenoidal surgery 経蝶形骨洞手術

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**Cerebellar tumors and emaciation**

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**Purpose:** Emaciation, an extreme weight loss due to decreased food intake, can be caused by multiple health symptoms including the digestive disorders, endocrine diseases, and psychiatric problems. Patients presenting with emaciation that has progressed over a long period of time frequently undergo the examination of the digestive tract first and fail to be evaluated for central nervous system disorders. We have experienced some cerebellar tumors found during the examinations for extreme weight loss. The aim of this study to delineate clinical features of cerebellar tumors presenting emaciation as a primary symptom.
**Patients and methods:** Between 1996 and 2011, a retrospective review of medical records for patients with posterior fossa tumors treated surgically at our institution was conducted. Clinical presentations and radiological findings were analyzed in relation to appetite loss and emaciation.
**Results:** A total of 107 patients were included. Eight patients presented with non-specific appetite loss as their initial symptom without focal cerebellar dysfunction and cranial nerve palsies. Among these 8 patients, two with hemangioblastoma complained primarily of emaciation without no neurological deficits. Emaciation was not observed in any of metastatic cerebellar tumor, gliomas, and meningiomas. Various gastrointestinal examinations over a prolonged period were frequently performed prior to investigations for CNS disorders, resulting in a relative delay of initiating proper treatments for the true pathogenesis, namely, cerebellar tumors.
**Conclusion:** Extreme appetite loss and emaciation could be the initial and sole symptom of a benign, slowly growing, and intraparenchymal cerebellar tumor such as hemangioblastoma, which appears important as one of differential diagnoses of patients with prolonged appetite loss.

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**Clinical courses of children with intracranial lesions without neurological symptoms at diagnosis**

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**Introduction:** The clinical courses of intracranial lesions of which neurological symptoms were absent at diagnosis are not well documented. We report clinical characteristics of children with "incidentally" found intracranial lesions.
**Patients:** Clinical courses of 14 patients with intracranial lesions which were found by check-up for non-neurological symptoms or screening for other reasons are surveyed.
**Results:** There were 5 boys and 9 girls. The median age at diagnosis was 3.3 year (1 - 15.5 years, 5: less than 3 years). The diagnosis were ependymoma in 3 patients, optic pathway pilocytic astrocytoma in 2, brain stem gliomas in 2, medulloblastoma in 1, oligodendroglioma in 1, diffuse astrocytomas in 1 and unknown in 4. The location of the tumors were cerebellum in 5 (including 4 without clinical or histological diagnosis), 4$^{th}$ ventricle in 3, optic pathway/hypothalamus in 2, brain stem in 2, thalamus in 1 and cerebral hemisphere in 1. The reasons for initial radiological examination were minor head injury in 6, mental retardation in 2, precocious puberty 1, facial palsy 1, headache 1 and screening in 1. All histologically or clinically diagnosed patients underwent multimodality treatment (8) or appropriate surgery alone (3). The median follow up was 34.5 months (8 months - 15 years). Three patients died and two patients with optic pathway glioma have been suffering from panhypopituitarism and decreased visual acuity.
**Conclusion:** In childhood brain tumor, incidental onset does not always lead to a good prognosis.

**Key words:**
child hood brain tumor　小児脳腫瘍、incidental onset　偶発的発症、asymptomatic intracranial lesions　無症候性頭蓋内病変

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**Loosing visual acuity due to intracranial hypertension. A case associated with sagittal suture synostosis.**

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**Introduction:** Recently, several reports had been published that raised intracranial pressure (ICP) is seen even in single suture synostosis. We have treated a case that showed rapid deterioration of visual acuity due to intracranial hypertension associated with sagittal suture synostosis.
**Case:** This 4 years old boy who was previously diagnosed as autism spectrum disorder, had suffered from headache and vomiting about 4 month before when he had been consulted from an ophthalmologist who noticed that his MR image was abnormal. His optic nerve was twisted and a rim of CSF was observed in his MR image. His CT scan showed not only sagittal suture synostosis but also a dehiscence of his coronal suture. He underwent a ventriclo-peritoneal shunt (VPS) followed by an overnight intracranial pressure (ICP) monitoring. His visual acuity did not improve but did not show any worsening. He also underwent cranioplasty. He did not complain headache or nausea after surgery.
**Discussion:** Visual failure resulting from raised ICP secondary to craniosynostosis has been reported in a few cases in the literature. The cause of this condition is unknown but several hypotheses have been suggested such as 1. Impaired CSF dymnamics, 2. Increase ICP caused by impaired venous outflow. In the present case, dilated subarachnoid space indicates impaired CSF dynamics, so that VPS was chosen as a first treatment.
**Conclusion:** Attentions should be paid to visual acuity in children with craniosynostosis because once the failure occurs it will be irreversible.

**Key words:**
craniosynostosis 頭蓋骨縫合早期癒合症
intracranial hypertension 頭蓋内圧亢進症
hydrocephalus 水頭症
ventricle-peritoneal shunt: 脳室腹腔シャント術

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**Paraumbilical peritoneal incision using the little finger in shunt operations for hydrocephalus: Technical note**

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**Objective:** Shunt operation remains the standard procedure to treat hydrocephalus. Traditionally, the peritoneal catheter is inserted through a small laparotomy in the right subcostal or subxiphoid region. To reduce cosmetic problems we recently introduced the use of a small paraumbilical incision for shunt operations. Here we describe our simple minilaparotomy method that involves perforation of the peritoneum with the surgeon's little finger.
**Methods:** After placing a small paraumbilical incision at the skin and fascia, the little finger is introduced through the incision to perforate the pre-peritoneal fat and peritoneum. The finger should be inserted at a 30 - 45° angle to the horizontal plane to avoid injuring the underlying viscera and major blood vessels and to put sufficient shear force on the peritoneum. After visual confirmation of proper perforation a catheter is inserted into the abdominal cavity.
**Results:** Between 2006 and 2012 we treated 16 patients with hydrocephalus using this method. There were no procedure-related major complications such as incisional hernia or visceral perforation although in one obese woman it was difficult to find the peritoneal opening and in one man we encountered a delay in wound-healing.
Conclusion: Our method is safe and quick and requires no special instrumentation. As the natural umbilical skin fold hides the paraumbilical wound our method yields cosmetically appealing results.

**Key words:**
hydrocephalus 水頭、shunt operation シャント手術、
peritoneum 腹膜、skin incision 皮切

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**Clinical Application of the Hanger Reflex toward the Treatment of Cervical Dystonia: A Multicenter Trial**

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**Objective:** When the head is sandwiched within a wire clothes hanger and its antero-temporal region is compressed, the head rotates unexpectedly. As the mechanism is not evident, however, we have temporarily named this phenomenon the "hanger reflex". We attempted to treat cervical dystonia patients using this phenomenon.
**Materials and Methods:** First, we confirmed that the abnormal head movement in cervical dystonia patients was temporarily improved by wearing a hanger on the head. Subsequently, a portable device that induced a hanger reflex was invented for long-term application to cervical dystonia patients. After receiving approval from the ethical committee at the University of Toyama, the device was applied to two cervical dystonia patients. A multicenter trial (including 8 facilities) using this device was initiated in 2012. The subjects were adult cervical dystonia patients suffering from abnormal rotatory head movements. The portable therapeutic device was applied to the patient's head for over 30 minutes per day for 3 months. Modified Tsui scores and Toronto Western Spasmodic Torticollis Rating Scale scores were evaluated before and after applying the device. In patients using botulinum toxin type A, the trial was started after cessation of the medication.
**Results:** In the University of Toyama trial, an improvement in abnormal head movements was observed in one of two patients.
**Conclusions:** This unique method utilizing the hanger reflex has a potential to treat cervical dystonia in a less invasive fashion. Future positive results from this clinical study are expected. In this presentation, we will introduce the multicenter trial and provide an interim report.

**Key words:**
hanger reflex: ハンガー反射, cervical dystonia: 頸部ジストニア

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**The Lobotomist and the Lobotomized: What current images tell us**

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**Introduction:** The application of the neurosurgical approach for the treatment of mental illness began in 1936 by Moniz. Freeman and Watts developed modified “prefrontal lobotomy” procedure in 1940s, which was adopted worldwide. In Japan, more than 2,000 patients were operated mostly in 1950s. We had an opportunity of imaging study on a schizophrenic patient who had lobotomy surgery 50 years ago.
**Case Report:** The patient is a 75-year-old woman. She had been diagnosed as schizophrenic and had undergone a prefrontal lobotomy in1950s at a hospital in the Kanto region. Since then, her clinical course is little known. She has moved to Kobe several decades ago and was under good medical control by psychiatrists. She has been receiving welfare and living alone. When a guardian for her was applied in 2009, the first CT scan in her life was performed for the screening of unexpected cerebral disorders. It revealed bilateral frontal white matter lesions. No skull bone defect was found. MR imaging was obtained then and revealed the lesions containing CSF-like fluid. The diffusion tensor imaging revealed disconnection prefrontal-basal ganglia pathway.
**Discussion:** Neuroethics, as described “ unexplored continent lying between the two populated shores of ethics and neuroscience”, has been proposed. Surgical treatment of mental illness is critically dependent on understanding of normal and pathological cortical pathway. Instead of neglecting lobotomized patients as a hideous controversy of past, studying them by current imaging techniques is important. To recruit new findings on remote changes and degeneration of cortical circuit of them can provide us new insights of the “unexplored continent”.

**Key words:**
guardian 後見人　neuroethics　神経倫理　welfare 生活保護