



Cover image: MRI and angiographic images demonstrating a perimedullary AVF compressing the thoracic cord in a child from the manuscript by Li J et al.

Editor

Felipe C. Albuquerque

Commissioning Editor

Michael Chen

Associate Editors

- Alessandra Biondi
Christophe Cognard
Lucas Eljovich
David Fiorella
Joshua Hirsch
William Mack
J Mocco
Laurent Pierot

Associate Editors, Basic Science

Matthew Gounis
Tomoki Hashimoto

Assistant Editors, Social Media

Reade DeLeacy
Andrew Ducruet
Kyle Fargen
Ashutosh Jadhav

Editor Emeritus

Robert W. Tarr

SNIS Executive Director

Marie Williams

Editorial Office

Journal of NeuroInterventional Surgery BMJ
Publishing Group Ltd
BMA House
Tavistock Square
London, WC1H 9JR, UK
E: info.jnis@bmjgroup.com

Guidelines for authors and reviewers

Full instructions are available online at http://JNIS.bmj.com/fora. Articles must be submitted electronically http://mc.manuscriptcentral.com/jnis. Authors retain copyright but are required to grant JNIS an exclusive licence to publish http://JNIS.bmj.com/fora/licence.dtl

ISSN: 1759-8478 (print)

ISSN: 1759-8486 (online)

Twitter: @JNIS\_BMJ

Disclaimer: While every effort is made by the publishers and editorial board to see that no inaccurate or misleading data, opinions, or statements appear in this Journal, they wish to make it clear that the data and opinions appearing in the articles and advertisements herein are the responsibility of the contributor or advertiser concerned.

Accordingly, the publishers and the Society of NeuroInterventional Surgery, the editorial committee and their respective employees, officers and agents, accept no liability whatsoever for the consequences of any such inaccurate or misleading data, opinion or statement. While every effort is made to ensure that drug doses and other quantities are presented accurately, readers are advised that new methods and techniques involving drug usage, described within this Journal, should only be followed in conjunction with the drug manufacturer's own published literature.

Copyright: © 2019 Society of NeuroInterventional Surgery. All rights reserved, no part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise without prior permission.

Journal of NeuroInterventional Surgery, ISSN 1759-8478, is published monthly by BMJ Publishing Group Ltd, BMA House, Tavistock Square, London WC1H 9JR, UK. The annual subscription price is \$272. Airfreight and mailing in the USA by agent named Worldnet Shipping Inc., 156-15, 146th Avenue, 2nd Floor, Jamaica, NY 11434, USA. Periodicals Postage Paid at Jamaica NY 11431.

US Postmaster: Send address changes to Journal of NeuroInterventional Surgery, Worldnet Shipping Inc., 156-15, 146th Avenue, 2nd Floor, Jamaica, NY 11434, USA. Subscription records are maintained at: BMJ, 12th Floor, Southgate House, Wood Street, Cardiff CF10 1GH, UK. Air Business Ltd is acting as our mailing agent.

Editor's column

323 The pincer movement of cost and quality in neurointerventional care: resource management as an imperative
J A Hirsch

Commentary

326 MISTIE III: a big step in the right direction
C P Kellner, A S Arthur, M Bain, D Fiorella, J Mocco

Ischemic Stroke

328 Susceptibility vessel sign on MRI predicts better clinical outcome in patients with anterior circulation acute stroke treated with stent retriever as first-line strategy
R Bourcier, W B Hassen, S Soize, P Roux, J Labreuche, M Kyheng, M Tisserand, C Rosso, R Blanc, M Piotin, I Derraz, G Boulouis, C Oppenheim, H Desal, S Bracard, B Lapergue, O Naggara, on behalf of the ASTER and the THRACE investigators

334 Real-world stent retriever thrombectomy for acute ischemic stroke beyond 6 hours of onset: analysis of the NASA and TRACK registries
M Mokin, A Abou-Chebl, A C Castonguay, R G Nogueira, J D English, H Farid, R Gupta, C Martin, W E Holloway, D C Haussen, N Mueller-Kronast, O O Zaidat, on behalf of the NASA and TRACK investigators.

338 Inter- and intraobserver reliability for angiographic leptomeningeal collateral flow assessment by the American Society of Interventional and Therapeutic Neuroradiology/ Society of Interventional Radiology (ASITN/SIR) scale
W Ben Hassen, C Malley, G Boulouis, F Clarençon, B Barolini, R Bourcier, C Rodriguez Régent, N Bricout, M A Labeysrie, J C Gentric, A Rouchaud, S Soize, S Saleme, H Raoult, S Gallas, F Eugène, R Anxionnat, D Herbretreau, S Bracard, O Naggara

342 Predictive value of CT angiography source image ASPECTS in patients with anterior circulation acute ischemic stroke after endovascular treatment: ultimate infarct size and clinical outcome
J-S Park, J M Lee, H-S Kwak, G H Chung

347 Safety and efficacy of cangrelor in acute stenting for the treatment of cerebrovascular pathology: preliminary experience in a single-center pilot study
P Aguilar-Salinas, G J Agnoletto, L B C Brasilense, R Santos, M F Granja, D Gonsales, A Aghaebrahim, E Sauvageau, R A Hanel

352 The safety of triple antiplatelet therapy under thromboelastography guidance in patients undergoing stenting for ischemic cerebrovascular disease
Z Wu, A-F Liu, J Zhou, Y Zhang, K Wang, C Li, H Qiu, W-J Jiang

Hemorrhagic Stroke

357 The safety and effectiveness of the LVIS stent system for the treatment of wide-necked cerebral aneurysms: final results of the pivotal US LVIS trial
D Fiorella, A Boulos, A S Turk, A H Siddiqui, A S Arthur, O Diaz, D K Lopes, on behalf of the LVIS investigators

362 Antiplatelet therapy and the risk of ischemic and hemorrhagic complications associated with Pipeline embolization of cerebral aneurysms: a systematic review and pooled analysis
H Saber, R Y Kherallah, M O Hadied, S Kazemlou, P Chamiraju, S Narayanan

367 Long-term retreatment rates of cerebral aneurysms in a population-level cohort
T Daileida, F S Vahidy, P R Chen, H Kamel, C W Liang, S I Savitz, S A Sheth

373 Selective compromise of hypoplastic posterior communicating artery variants with aneurysms treatable by coil embolization: clinical and radiologic outcomes
H H Choi, Y D Cho, D H Yoo, E K Yeon, J Lee, S H Lee, H-S Kang, W-S Cho, J E Kim, M H Han

Clinical Neurology

380 Venous sinus stenting for idiopathic intracranial hypertension: a systematic review and meta-analysis
P Nicholson, W Brinjikji, I Radovanovic, C A Hilditch, A C O Tsang, T Krings, V Mendes Pereira, S Lenke

MORE CONTENTS >



This article has been chosen by the Editor to be of special interest or importance and is freely available online.



This article has been made freely available online under the BMJ Journals open access scheme. See http://authors.bmj.com/open-access/



Member since 2009

This journal is a member of and subscribes to the principles of the Committee on Publication Ethics

http://publicationethics.org/



When you have finished with this please recycle it

## New Devices

- 386** Balloon remodeling-assisted Woven EndoBridge technique: description and feasibility for complex bifurcation aneurysms

*C Mihalea, S Escalard, J Caroff, L Ike, A Rouchaud, V Da Ros, I Pagiola, JJ Marengo de la Torre, T Yasuda, B V Popa, H Ples, N Benachour, A Ozanne, J Moret, L Spelle*

- 390** Treatment strategies for recurrent and residual aneurysms after Woven Endobridge implantation

*C Kabbasch, L Goertz, E Siebert, M Herzberg, C Hamisch, A Mpoisaris, F Dorn, T Liebig*

- 396** Treatment of intracranial aneurysms using the pipeline flex embolization device with shield technology: angiographic and safety outcomes at 1-year follow-up



*M Martínez-Galdámez, S M Lamin, K G Lagios, T Liebig, E F Ciceri, R Chapot, L Stockx, S Chavda, C Kabbasch, G Faragò, H Nordmeyer, T Boulanger, M Piano, E P Boccardi*

- 400** Y-configuration stenting for coiling of wide-neck bifurcation aneurysms using Low-profile Visualized Intraluminal Support Junior

*K Y Park, B M Kim, D J Kim, J Chung, J W Lee*

- 405** Preliminary experience with the use of low profile visualized intraluminal support device in basilar artery for aneurysm treatment

*C Wang, Y Wu, Z Feng, J Wang, Q Li, R Zhao, B Hong, Y Xu, Q Huang, Y Fang, J Liu*

## Spine

- 411** Pediatric perimedullary arteriovenous fistula: clinical features and endovascular treatments

*J Li, G Zeng, X Zhi, L Bian, F Yang, J Du, F Ling, H Zhang*

## Neuroimaging

- 416** Effects of music therapy on anxiety and physiologic parameters in angiography: a systematic review and meta-analysis

*A C Lieber, J Bose, X Zhang, H Seltzberg, J Loewy, A Rossetti, J Mocco, C P Kellner*

## Basic Science

- 425** A new method to statistically describe microcatheter tip position in patient-specific aneurysm models

*M T Nawka, J-H Bulthé, S Gellissen, J Sedlacik, J Fiehler, A M Frölich*