

SCIENCE TIMES

N3-N13

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Order in Chaos: Understanding Intratumoral Heterogeneity in Gliomas by Tracking Tumor Cell Fate

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Consensus Guidelines for the Treatment of Osteoporosis

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Neutrophil-Guided Drug Delivery for Targeting Residual Glioma Cells

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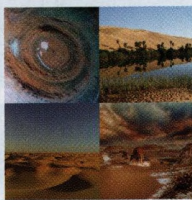
NEURORADIOLOGY REVIEW SERIES

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EDITOR'S CHOICE

Conventional and Advanced Imaging of Spine Oncologic Disease, Nonoperative Post-treatment Effects, and Unique Spinal Conditions

Falgun H. Chokshi, Meng Law, Wende N. Gibbs



On the Cover

This month's cover features images from the Sahara Desert. From top left, clockwise: The Richat Structure, or Eye of the Sahara, Mauritania (source: By Axelspace Corporation - <https://www.axelspace.com/en/hodoyoshi-1-images/eye-of-the-sahara/>, CC BY-SA 4.0, <https://commons.wikimedia.org/w/index.php?curid=41058344>).

Oasis in the desert, Libya (source: By Sfvat - Own work, Public Domain, <https://commons.wikimedia.org/w/index.php?curid=2434953>). The White Desert, Egypt (source: By Ahmedherz - Own work, CC BY-SA 4.0, <https://commons.wikimedia.org/w/index.php?curid=43784274>). Saharan dunes, drones-eye view, (source: By Fiontain - Own work, CC BY-SA 4.0, <https://commons.wikimedia.org/w/index.php?curid=36154972>).



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Knihovna
Univerzity Palackého v Olomouci
Oborová knihovna
Lékařské fakulty
Hněvotinská 3 | 775 03 Olomouc

In this review, we discuss the imaging features of diseases and conditions ranging from neoplastic to nonoperative post-treatment effects to unique conditions of the spine. Additionally, advanced imaging may increase diagnostic certainty in cases where conventional imaging characteristics of benign lesions and malignant pathology are variable.

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EDITOR'S CHOICE

- Laser Thermal Ablation for Metastases Failing Radiosurgery: A Multicentered Retrospective Study**
Tafadzwa L. Chaunzwa, Di Deng, Eric C. Leuthardt, Stephen B. Tatter, Alireza M. Mohammadi, Gene H. Barnett, Veronica L. Chiang

BACKGROUND: Radiosurgical failure following stereotactic radiosurgery for brain metastases can be attributed to tumor regrowth or radiation necrosis. MRI-guided laser thermal ablation (LTA) therapy has emerged as an option for treatment; however, previous literature demonstrates variable results across centers.

OBJECTIVE: To assess the outcomes of LTA in the treatment of metastases failing radiosurgery across multiple centers and to determine if any treatment factors are predictive of outcome.

METHODS: Clinical data for 30 patients across 4 centers were retrospectively reviewed. Patients were included if they received LTA therapy following radiosurgical failure due to radiation necrosis or tumor regrowth. Demographics, surgical data, and follow-up imaging and clinical information were collected. Linear regression analyses were performed to determine treatment factors that were associated with post-LTA outcome.

RESULTS: The large majority of patients responded favorably to LTA treatment with low complication rates, short length of stay, and reductions in perilesional edema. A total of 73.3% of patients stopped steroids and 48% saw improvement of their preoperative symptoms. Patients with better pre-LTA Karnofsky Performance Status had better survival. Patients who had lesions with more perilesional T2 change post-LTA had a better chance of weaning off steroids and obtaining symptomatic relief.

CONCLUSION: MRI-guided LTA therapy serves as a viable alternative to traditional treatment options for metastatic brain lesions failing radiosurgery. Although this study is limited by size and is retrospective, LTA therapy may result in symptomatic improvement and a more prominent reduction in fluid-attenuated inversion-recovery signal for larger lesions.

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