

SCIENCE TIMES

Potential CAR T Cell Immunotherapy Against Diffuse Midline Gliomas

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Jonathan A. Lubin, Paul A. Clark, John S. Kuo

Recurrent Glioblastoma Treated With Recombinant Poliovirus

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Novel Drug Enhances Motor Recovery Following Brain Injury

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Chronic Neuropathic Pain Induces DNA Methylation Changes in the Dorsal Root Ganglion

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Fear Not, We Found What's Making You Anxious

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Enhancing Glioma Microsurgery With Local Drug and Cell Based Therapies: Time to Revisit?

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Pathogenesis and Prevention of Biofilms—The Culprit in Implant Infections

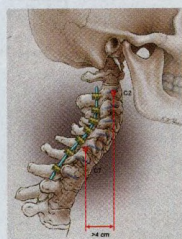
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RADIATION ONCOLOGY REVIEW SERIES

The use of Hypofractionated Radiosurgery for the Treatment of Intracranial Lesions Unsuited for Single-Fraction Radiosurgery

850

Jim Zhong, Robert H. Press, Jeffrey J. Olson, Nelson M. Oyesiku, Hui-Kuo G. Shu, Bree R. Eaton



On the Cover

Despite the potential for profound impact of ACD on function and HRQOL, there remains a paucity of high-quality studies that assess outcomes of surgical treatment for these patients. Through the International Spine Study Group (ISSG), patients seeking surgical treatment for ACD were prospectively enrolled through 13 sites into an observational

study that included collection of granular baseline, surgical, and follow-up data. Based on the series of 77 ACD patients described in the present study, surgical treatment provided significant improvement in multiple measures of pain and function, including the Neck Disability Index, neck pain numeric rating scale score, and EuroQoL-5D at 1 year following surgery. Further follow-up will be necessary to assess the durability of these improved outcomes. Copyright Kenneth X. Probst. Used with permission from Xavier Studio. Read more on p. 1031.



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Image-Guided Robotic Radiosurgery for Trigeminal Neuralgia

Pantaleo Romanelli, Alfredo Conti, Livia Bianchi, Achille Bergantin, Anna Martinotti, Giancarlo Beltramo

BACKGROUND: Frameless, non-isocentric irradiation of an extended segment of the trigeminal nerve introduces new concepts in stereotactic radiosurgery for medically resistant trigeminal neuralgia (TN).

OBJECTIVE: To report the results of the largest single-center experience of image-guided robotic radiosurgery for TN.

METHODS: A cohort of 138 patients treated with CyberKnife® (Accuray Incorporated) radiosurgery with a minimum follow-up of 36 mo was recruited. Pain relief, medications, sensory disturbances, rate and time of pain recurrence were prospectively analyzed.

RESULTS: Median follow-up was 52.4 mo; median dose 75 Gy; median target length 5.7-mm; median target volume 40 mm³; median prescription dose 60 Gy (80% isodose line). Actuarial pain control rates at 6, 12, 24, and 36 mo were 93.5%, 85.8%, 79.7%, and 76%, respectively. Overall, 33 patients required a second treatment; 18.1% developed sensory disturbances after 16.4 mo. One patient developed BNI grade IV dysfunction; 6 BNI grade III hypoesthesia after retreatment; 18 BNI grade II hypoesthesia (11 after retreatment). Shorter nerve length, smaller nerve volume, and lower prescription dose were associated with treatment failure. Re-irradiation independently predicted sensory disturbance.

CONCLUSION: Targeting a 6-mm segment of the trigeminal nerve with a prescribed dose of 60 Gy appears safe and effective. Persistent pain control was achieved in most patients with acceptable risk of sensory complications, which were typically found after re-irradiation.

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