O-029

CONE-BEAM COMPUTED TOMOGRAPHY FUSION TECHNIQUE FOR VASCULAR ASSESSMENT OF DEEP- SEATED HYPERVASCULAR INTRACRANIAL TUMORS

^{1,2}K Yoshida*, ¹T Akiyama. ¹Neurosurgery, Keio University School of Medicine, Tokyo, Japan; ²Department of Neurosurgery, Institute of Brain and Blood Vessels, Mihara Memorial Hospital, Iseaki, Gunma, Japan

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Objective Cone-beam computed tomography (CBCT) images for intracranial tumors provide detailed vascular information and locational relationship with surrounding bony structures. However, the vasculature visualized in a single 3DRA is limited to one arterial system territory, even though deep-seated lesions, such as the skull base meningiomas, are often supplied by multiple arterial systems. Feeders from the internal carotid artery (ICA) or vertebral artery (VA) system need to be more carefully observed than those from the external carotid artery (ECA) system because they branch from vessels supplying eloquent neural tissues and their embolization is associated with high procedural risks. We report the use of the CBCT fusion technique for pre-embolization and pre-surgical vascular assessment of skull base meningiomas.

Methods Eleven patients with deep-seated hypervascular lesions (9 petroclival or tentorial meningiomas, 1 occipital hemangioblastoma, and 1 cavernous sinus hemangioma) supplied by multiple arterial systems were preoperatively evaluated using CBCT fusion imaging. Fusion images were reconstructed from three-dimensional rotational angiography with contrast injections from the ICA and ECA in six cases, vertebral artery VA and ECA in four cases, and ICA and VA in one case. Slab maximum intensity projection images with multiplanar reconstruction were used for vascular assessment of each tumor.

Results The feeding pedicles and tumor stains from two arterial systems were differentiated by separate colors. The courses and territories of the ICA dural feeders or ICA/VA pial feeders were easily distinguished from the ECA dural feeders. Anastomosis between thin feeders from different arterial systems could be detected. 'Mixed stain,' the stain with both

colors, was observed in some tumor compartments, suggesting dual supply from two arterial systems and the presence of peritumoral anastomoses. These information helped select a suitable operative approach and plan an effective and safe embolization strategy. Six patients underwent preoperative embolization without complications, while others underwent surgery without embolization.

Conclusions CBCT fusion images clearly visualized the thin feeders from each arterial system, the vascular compartments within the tumor, and possible peritumoral anastomoses. This technique provides a substantial contribution to both the pre-operative embolization and surgical resection of skull base meningiomas.

Disclosures K. Yoshida: None. T. Akiyama: None.

O-030

SUPER-SELECTIVE MIDDLE MENINGEAL ARTERY EMBOLIZATION FOR CHRONIC SUBDURAL HEMATOMA USING N-BCA WITH THE SUGAR PUSH TECHNIQUE: SINGLE CENTER EXPERIENCE OF 61 CONSECUTIVE PATIENTS

S Majidi*, S Matsoukas, R De Leacy, P Morgenstern, R Soni, H Shoirah, T Shigematsu, J Bederson, A Berenstein, J Mocco, J Fifi, C Kellner. Neurosurgery, Mount Sinai Hospital, New York, NY

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Background Middle meningeal artery (MMA) embolization has emerged as a promising treatment modality for patients with chronic subdural hematoma (SDH). Onyx, particles, or coils are the most used embolic materials. Therefore, the safety and efficacy of n-butyl cyanoacrylate (n-BCA) embolization in these patients are not fully understood. We present the technical feasibility and efficacy of n-BCA embolization in the largest consecutive cohort to date.

Methods This study is a retrospective analysis of a prospectively maintained database of consecutive patients with chronic or recurrent SDH treated with MMA embolization using diluted n-BCA with the 'Sugar-Rush' technique. Briefly, a 2.1

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