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Indocyanine Green for Vessel Identification and Preservation Before Dural Opening for Parasagittal Lesions

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The purpose of this video series is to document how indocyanine green (ICG) videography can be used before dural opening to help identify and preserve potentially critical draining veins into the sagittal sinus during resection of parasagittal lesions. For both patients, a craniotomy was performed in close juxtaposition to the sagittal sinus. ICG (0.25-mg/kg dose) was administered intravenously just before dural opening. Using a microscope equipped with fluorescent filters, real-time flow assessment of the underlying veins was done. The identified veins were marked on the dural surface. Dural opening was made by dissecting around these vessels. After tumor resection, ICG was re-administered, and videoangiography was conducted to confirm vascular integrity. We document the application of ICG videoangiography using 3-dimensional video recording for 2 cases of parasagittal meningiomas. We present first a 61-year-old woman with motor seizures on the right side and a tumor volume of 48.32 mL. The second patient is a 30-year-old woman with right leg weakness and a tumor volume of 16.96 mL. The information provided by this technology changed the surgical procedure. ICG angiography could be divided into arterial, capillary, and venous phases comparable to what is seen in digital subtraction cerebral angiography. This tool not only helps identify critical draining veins that could be injured during dural opening, but also demonstrated vascular integrity after lesion removal. The ICG administration and videoangiography during and after parasagittal tumor resection can be used to avoid vascular damage in neurosurgery.

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Disclosures

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The 3-D video can be viewed at <http://bit.ly/17DWf90> or to view the video on a mobile device, scan this QR Code to link to an anaglyph (red/green) version of this 3-D video.