

Indocyanine green videoangiography for brain tumor

Pre-resection videoangiography provides useful information on the tumoral circulation and the pathology-induced alteration in surrounding brain circulation. Post-resection examination allows for an immediate check of patency of those vessels that are closely related to the tumor mass and that the surgeon does not want to damage ¹⁾.

Kim et al. applied ICG videoangiography to brain tumor surgery and evaluated the usefulness.

Twenty-three patients with a brain tumor who underwent microsurgical resection were analyzed. The pathological diagnosis was meningioma in 15 patients, metastasis in three, glioma in three, and hemangioblastoma in two. A microscope with a special filter and infrared excitation light to illuminate the operating field was used in this study. The intravascular fluorescence was imaged with a video camera attached to the microscope. ICG was injected intravenously with the dose of 5-25 mg, and overall, ICG was injected intraoperatively 32 times.

ICG videoangiography allowed for an excellent evaluation of blood flow in the tumoral and peritumoral vessels both before and after the resection in all cases.

ICG videoangiography is a useful method for monitoring blood flow in the exposed vessels during microsurgery for a brain tumor. This noninvasive method is simple, safe, cost-effective, and easily repeatable. Before resection, it provides information on the tumoral and peritumoral circulation including sequential visualization of vessels or direction of the blood flow. After resection, it checks the patency of the peritumoral vessels and is especially useful for the vein. This ICG videoangiography can be an alternative tool to intraoperative angiography or Doppler ultrasonography in selective cases ²⁾.

¹⁾

Ferrolì P, Acerbi F, Albanese E, Tringali G, Broggi M, Franzini A, Broggi G. Application of intraoperative indocyanine green angiography for CNS tumors: results on the first 100 cases. *Acta Neurochir Suppl.* 2011;109:251-7. doi: 10.1007/978-3-211-99651-5_40. PubMed PMID: 20960352.

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Kim EH, Cho JM, Chang JH, Kim SH, Lee KS. Application of intraoperative indocyanine green videoangiography to brain tumor surgery. *Acta Neurochir (Wien).* 2011 Jul;153(7):1487-95; discussion 1494-5. doi: 10.1007/s00701-011-1046-x. Epub 2011 May 19. PubMed PMID: 21590519.

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