Introduction

Cerebral blood flow

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The unique characteristics of cerebral blood flow and metabolism make this topic relevant to all aspects of the care of the neurosurgical patient. One of the unique characteristics of the brain is its high consumption of total energy compared with other organs of the body relative to its weight. With little in the way of energy storage, the brain is exquisitely dependent on a constant, uninterrupted, appropriate amount of blood flow at the global and regional level. More than half of the blood flow is devoted to supporting neuronal transmission, while the remainder is necessary for maintenance of cellular function and viability. Measurement and regulation of cerebral blood flow in the neurosurgical patient is critical to optimizing outcome following any injury or disease process that may put the blood supply to all or part of the brain in jeopardy. This issue of Neurosurgical Focus examines the noninvasive measurement of cerebral blood flow by near-infrared spectroscopy and the treatment of a case of an embolic stroke from infective endocarditis by endovascular techniques. (http://thejns.org/doi/abs/10.3171/2011.12.FOCUS11353)

Disclosure

The authors report no conflict of interest.