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Sensorimotor Behavioral Testing in a Mouse Model of Subarachnoid Hemorrhage

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Insert abstract text here

Subarachnoid Hemorrhage (SAH) is an often lethal form of stroke, for which few medical interventions exist to counteract long-term sensorimotor deficits in survivors. Functional animal models of stroke can provide valuable information about the extent of sensorimotor deficits as well as insight into the biological cause of the deficits and the potential for rehabilitation. Here, six sensorimotor behavioral tests were conducted on SAH (endovascular perforation model), sham-operated and un-operated (control) mice. An assessment score was used to record the results of the animals 0, 1, 2, 3, and 4 days post-surgery. Our results demonstrate a statistically significant difference in the performance of SAH mice compared to control mice ($p < 0.01$ Day 1, 2, 3 and $p < 0.05$ Day 4), as well as a statistically significant difference between SAH model and Sham-operated mice day ($p < 0.01$ Day 1, 2, 3, and $p < 0.05$ Day 4). The greatest difference in the performance between SAH animals and the sham-operated and control groups were detected by the tail suspension test, pole test, and wire hang test. This study demonstrates sensorimotor deficits occur in mice with SAH induced via the endovascular perforation model. Further, we show that a battery of relatively simple behavioral tests can be used to assess SAH-induced neurological deficits in SAH model mice.

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