Cerebral arteries can become partially or fully occluded, preventing sufficient blood flow to distal cortical tissue. This reduction in perfusion leads to ischemia and increased risk of permanent neuronal damage if the blood flow is not restored in a timely manner. There exists a clinical need to develop a method that facilitates rapid, simplified extracranial-intracranial (EC-IC) bypasses in small cortical arteries to close the gap and enable wide procedural adoption. The Rapid M4 device aims to maintain secure alignment of the superficial temporal artery (STA) with the middle cerebral artery (MCA) to enable improved surgical closure. The device must reduce anastomosis time, improve alignment accuracy, and maintain stable positioning throughout suturing. Future prototype development will focus on a nitinol stent designed to provide controlled radial support and vessel stabilization. Mechanical validation will include radial compression testing, fatigue durability, and flexibility. Additionally, catheter deployment methods will be analyzed using Finite Element Analysis (FEA) software. These methods will ensure that the Rapid M4 device enables rapid and reproducible EC-IC bypass alignment while ensuring vascular integrity.