Stent deployment as a treatment for stent retriever failure in acute ischemic stroke: an evidence-based case report

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Introduction: Stent retriever has been approved as definitive therapy for acute ischemic stroke, but it has various failure rates ranging from <1%-30%. Deploying self-expandable stent can be considered in patients refractory to conventional management. A patient sustain acute ischemic stroke with stenosis in middle cerebral artery, M1&M2. After three attempts of stent retriever, there was no recanalization. Then, the stent is deployed and TICI 2b/3 was achieved. This study aims to identify the outcome of stent deployment as a treatment for stent retriever failure in acute ischemic stroke. Method: Literature searching was performed in three databases: PubMed®, Cochrane®, and ScienceDirect® using keywords: stenting, failure, acute ischemic stroke, and modified Rankin Scale score with their acronym or abbreviations. Two articles were generated using inclusion and exclusion criteria. Critical appraisal was performed using validity, importance, and applicability criteria. Results: The randomized control trial (RCT) showed lower modified Rankin Scale score (mRS score 0-2, 35.3%) and cerebral herniation (11.8%) in stenting group compared to non-stenting group (mRS score 0-2 7.1%; cerebral herniation 42.9%). In a cohort study, stent deployment results good outcome (mRS score 0-2) in 42% patients and moderate disability (mRS score 3) in 21% patient. Discussion: In atherosclerosis stenosis, the self-expandable stent minimize barotrauma to the vessel, more flexible to reach distal lesions, and have various sizes. Besides, it has lower acute/periprocedural complications with no instances of procedural stroke, vessel rupture, or stent migration. Therefore, deployment of stent-expandable stent in acute ischemic stroke can be used in stent retriever failure.