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Rescue stenting for failed mechanical thrombectomy procedures

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Title: Rescue stenting for failed mechanical thrombectomy procedures.

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Background: Mechanical thrombectomy (MT) has dramatically changed the natural history of acute ischemic stroke. The disease that was associated with high morbidity, mortality, and significant cost on the health care system became a treatable disease. One of the most important variables to improve outcomes is time to revascularize the ischemic tissue. Rescue stenting (RS) is an option for patients who fail MT.

Methods: A retrospective chart review for patients who underwent a MT procedure and either failed (defined as TICI 0-2a) or required a RS from 2015 – 2019 composed the study population. IRB approval was obtained and the consent was waived due to the study design. Medical charts and imaging were reviewed for baseline characteristics, stroke characteristics, complications, and functional outcome. Comparison was performed between the rescue group and the failed group to analyze outcomes.

Results: From 2015-2019, 96 patients failed a MT procedure, and 26 patients required an intracranial stent. Initial NIHSS scores were comparable between the groups, (16.1 ± 7.2 vs. 15.2 ± 8.0 , $p = 0.552$). Patients received comparable pre-procedure care as indicated by similar rate of tPA administration (38.5% vs. 34.6% , $p = 0.804$) and symptom onset to procedure time

(1043.5 ± 3556 vs. 1505.3 ± 5183 , $p = 0.652$). While receiving an intracranial stent led to a longer procedure time (66.1 ± 43.4 vs. 86.6 ± 36.2 , $p = 0.040$), patients receiving a stent had a reduced mortality (32 (36.0%) vs. 3 (12.0%), $p = 0.027$) and NIHSS at discharge (23.0 ± 14.7 vs. 14.5 ± 13.6 , $p = 0.034$). In the RS group, 4 patients had symptomatic intracranial hemorrhage as opposed to 2 in the non-RS group (3.6% vs 15.4%, $p = 0.08$).

Conclusion: Rescue stenting was associated with good outcomes as indicated by decreased mortality and NIHSS at discharge.