CASE DIAGNOSIS: Five patients with ischemic MCA infarcts underwent interventional rehabilitation after MERCI procedure.

CASE DESCRIPTION: Single-center prospective case series. Five consecutive endovascular cases 48m and older with symptoms of acute stroke presented to acute care between 0 and 6 hours with confirmed arterial occlusion of the MCA or one of its terminal branches by neuroimaging. All patients underwent MERCI procedure. Angiography performed before and after clot retrieval documented recanalization. Functional recovery was followed in acute ischemic rehab.

DISCUSSION: Following MERCI procedure is strongly associated with improved functional outcomes and reduced mortality. Functional recovery, measured by discharge NIHSS scores, discharge setting, and length of stay, was improved for 4 of 5 patients who underwent MERCI procedure followed by acute ischemic rehab. MERCI CI may reduce the ischemic penumbra associated with functional deficits following stroke, reducing the recovery time for neural tissue. Outcomes measures were Functional Independence Measure (FIM) scores at discharge, discharge setting and device-related complications. All patients had unilateral hemiplegia which improved to at least 3/5 by discharge. The modified stroke grade procedure was admission to rehab, all patients were discharged home and completed final NIHSS at discharge. Minimal-maximum assistance. Average length of stay for stroke rehab at our facility is 3-4 weeks. Four of five patients’ lengths of stays were 13 days or less with community discharge at modified independent. One of the five patients’ course was complicated by intracranial hemorrhage with continued rehab in subacute rehab. All patients’ manual muscle testing of hemiparetic limbs improved to at least 4/5 on discharge. The patient with hemorrhagic conversion also recovered muscle strength of 4/5.

CONCLUSIONS: MERCI clot retrieval following acute ischemic MCA infarct improved functional outcome and reduced length of stay for 4 of 5 patients undergoing acute ischemic stroke rehab. Further ongoing prospective case studies may reveal that the majority of these patients have good response to interdisciplinary rehab following the procedure.

In 2004, the decision to adopt the Merici Retriever was based on data from the MERCI (Mechanical Embolus Retrieval in Cerebral Ischemia) Trial. The intent of the MERCI Trial was to broaden the indication for the device to include the removal of nascent, recently symptomatic ischemic stroke. The MERCI investigators compared their treated patient population to the placebo arm of the PROSPECT (PROspective Study: Treatment of Acute Cerebral Thromboembolism Using the Merci Recanalization Device) study to determine the safety and efficacy of mechanical embolectomy. Revascularization was associated with improved outcomes and decreased mortality. General indications for the procedure includes treatment performed within 6 hours from symptoms onset and contraindication to or failure of intravenous thrombolytics; and occlusion of the internal carotid artery, M1 and M2 segments of the middle cerebral artery, basilar artery, or vertebral artery on angiography. General contraindications include absence of occlusive intracranial hemorrhage or severe arterial stenosis.

The MERCI Retriever System (Concentric Medical) consists of the Merci Retriever, the Merci Balloon Guide Catheter (BGC) and the Merci microcatheter. Patients are usually given a bolus of unfractionated heparin intravenously to achieve an activated clotting time of 220-250 seconds and then a 7F sheath is placed in the common femoral artery posterior for further occlusion distal occlusion. The microcatheter is then guided into the occluded vessel and passed beyond the thrombus. A detachable angioplasty balloon is then inflated distal to the clot to facilitate retrieval. The Merci Retriever is then advanced through the microcatheter and 2 to 3 mechanical loops are deployed beyond the thrombus. The Merci Retriever is then advanced through the microcatheter and 2 to 3 mechanical loops are deployed beyond the thrombus. The BGC balloon is inflated to control intracranial blood flow during retrieval of the thrombus and to further distalize the clot, where the Merci Retriever is to be deployed. The Merci Retriever is then advanced in the microcatheter and 2 to 3 mechanical loops are deployed beyond the thrombus. The BGC balloon is inflated to control intracranial blood flow during retrieval of the thrombus and to further distalize the clot, where the Merci Retriever is to be deployed. The Merci Retriever is then advanced in the microcatheter and 2 to 3 mechanical loops are deployed beyond the thrombus. The BGC balloon is inflated to control intracranial blood flow during retrieval of the thrombus and to further distalize the clot, where the Merci Retriever is to be deployed. The Merci Retriever is then advanced in the microcatheter and 2 to 3 mechanical loops are deployed beyond the thrombus. The BGC balloon is inflated to control intracranial blood flow during retrieval of the thrombus and to further distalize the clot, where the Merci Retriever is to be deployed.