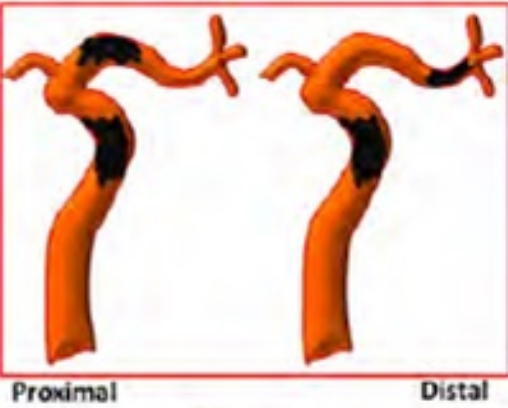
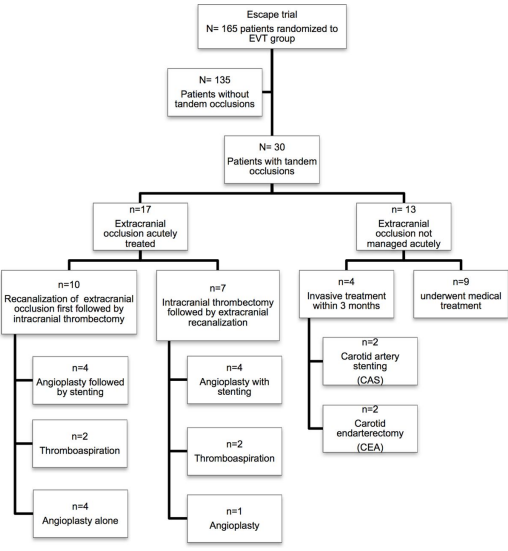


<div><div>Introduction</div><p>Acute ischemic stroke due to large vessel occlusion occurs with <u>tandem stenosis</u> of the cervical internal carotid artery (ICA) in <u>15-20% of cases</u>.</p></div> <div><div>Figure 1. Tandem Occlusions (1)</div><div>ICA + MCA occlusion</div></div> <div><div>Figure 2. ESCAPE trial Tandem Treatments (2)</div><p>- Controversy about the optimal approach to these difficult lesions leads to diverse treatment options (figure 2)</p></div>	<div><div>Background</div><p>Tandem lesions often have a fragile clot in the carotid artery with a distal middle cerebral artery (MCA) occlusion.</p><p>Current Treatment approaches includes:</p><ul style="list-style-type: none">• Extracranial Lesion Managed First: Stenting, Angioplasty• Intracranial Lesion Managed First with ICA stenting on the way out, or deferred CEA, or medical management.<p>“Kitchen-sink” technique</p><p>Utilizes a balloon occlusion guide catheter proximally with aspiration and stent retrieval (SR) to remove clot from the ICA and MCA., respectively.</p></div> <div><div>Step-wise approach:</div><ul style="list-style-type: none">• All devices are opened prior to case.• Fragile clot in the ICA is removed with contact aspiration under proximal protection of a balloon guide.• Distal MCA clot is removed with SR with an aspiration catheter.• SR is pulled with the aspiration catheter remaining in place.</div> <div><div>Benefits</div><p>Allows rapid access for a 2nd pass while also maintaining access distal to the ICA plaque. This prevents repeated crossing of a fragile ICA plaque and may serve as a catheter for deployment of a distal embolic protection device in the event that a carotid stent is needed.</p></div>	<div><div>Methods</div><p>We report a single-surgeon case-series identifying anterior circulation tandem stenosis LVOs treated with an multiple simultaneous endovascular techniques (so called, the “Kitchen-Sink”) from December 2016-December 2017.</p></div> <div><div>Results</div><p>A total of four patients with tandem stenosis with acute stroke were seen and treated with the "Kitchen-Sink" technique. Three patients were male, mean age was 65.5 years old.</p></div> <div><div>Managment</div><ul style="list-style-type: none">• Three patients received IV-tPA therapy. Intra-arterial tPA was used in 2 patients.• Three patients had M1 occlusion, one had M2.• Machine assisted aspiration was utilized in all patients.• ICA stenosis was treated with balloon angioplasty in one patient, angioplasty and stenting in one patient, and endarterectomy in one patient.</div> <div><div>Outcomes</div><ul style="list-style-type: none">• Complete revascularization (mTICI=3) was achieved in all patients.• The mean improvement in NIHSS was 4.25.• Functional outcome improved in all patients; presenting mRS were 3,4,3,3; all mRS at discharge were 2.</div>	<div><div>Learning Objectives</div><p>We introduce a novel and timely way to manage difficult stroke cases. The "kitchen sink" protocol resolves some technical nuances that accompany challenging stroke cases with tandem occlusions.</p></div> <div><div>Conclusions</div><p>Simultaneous implementation of multiple revascularization techniques (i.e. “the kitchen-sink”) may provide an efficient and effective approach to patients presenting with tandem cervical ICA and distal occlusion. In our small cohort of 4 patients, we show that the "Kitchen-Sink" approach resulted in excellent revascularization rates with similar clinical outcomes.</p></div> <div><div>References</div><ol style="list-style-type: none">1. Malferrari G, Zedde M. Neurosonological Evaluation of the Acute Stroke Patients. 2011.2. Assis Z, Menon BK, Goyal M, et al. Acute ischemic stroke with tandem lesions: technical endovascular management and clinical outcomes from the ESCAPE trial. Journal of NeuroInterventional Surgery. 2017.</div>
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