



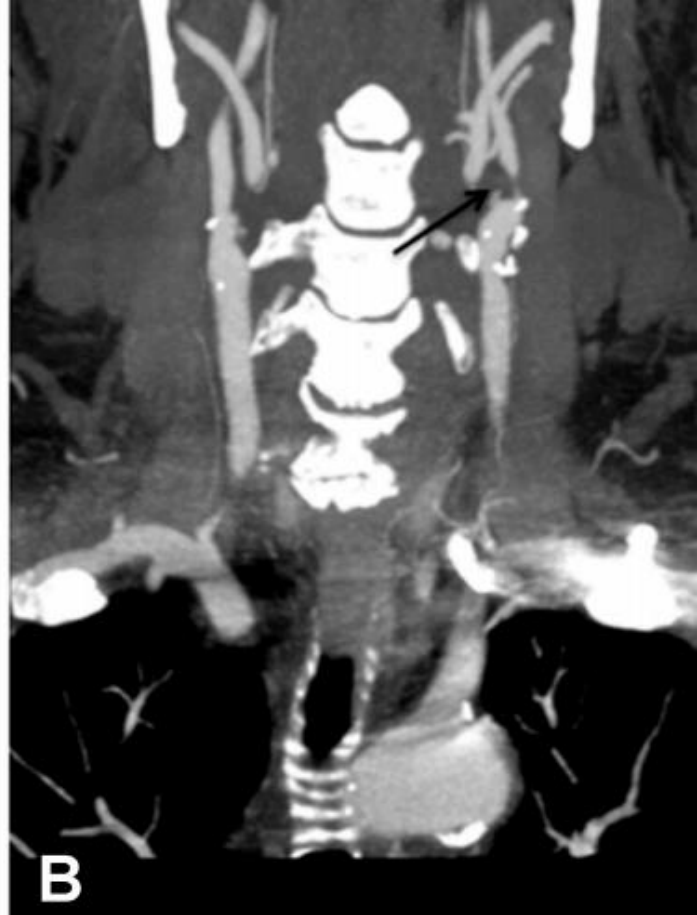
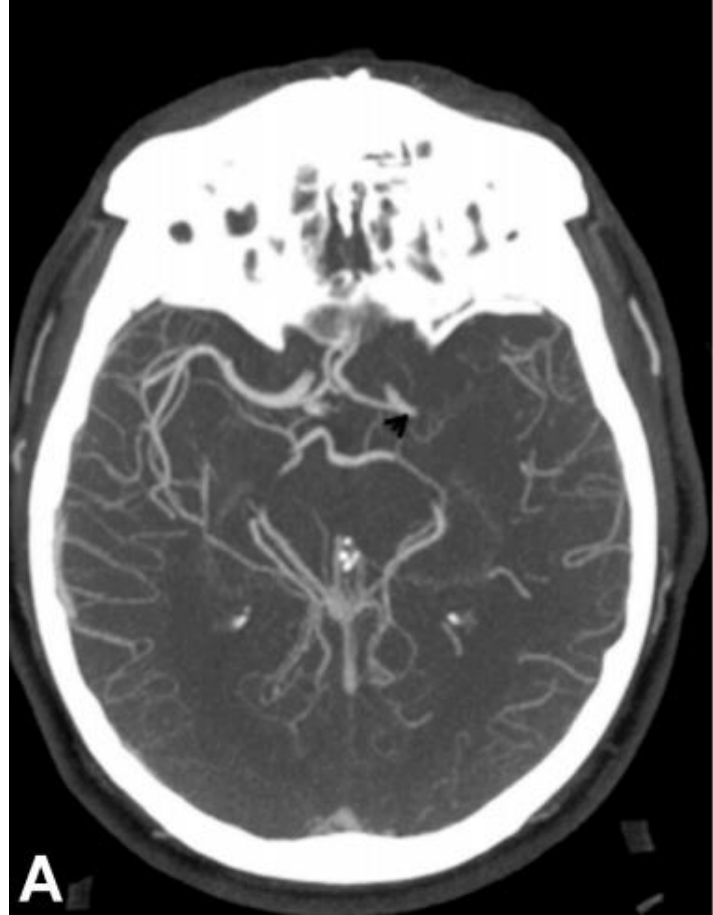
Endovascular Management for Tandem Occlusions of Anterior Cerebral Circulation: Systematic Analysis of 99 Patients from Literature

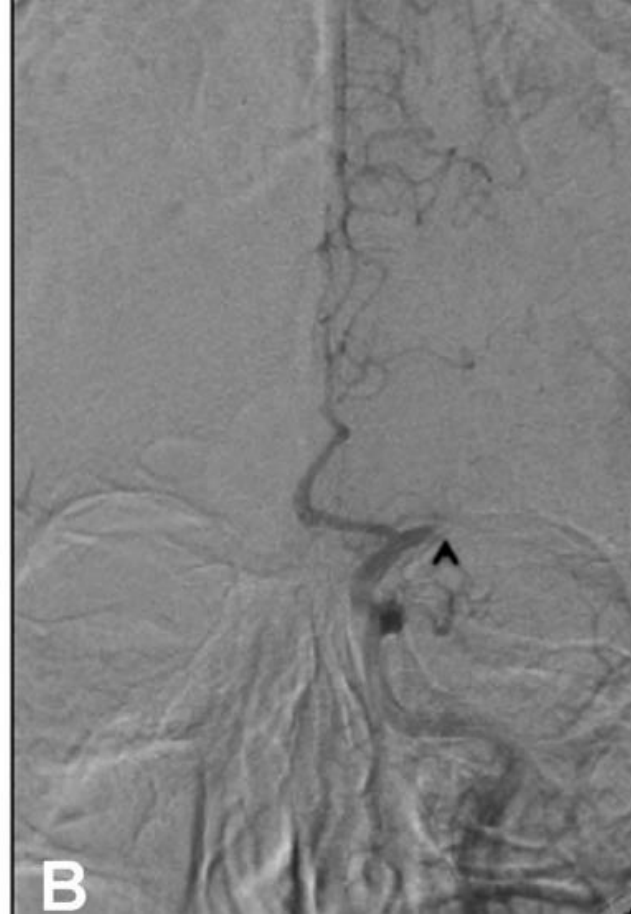
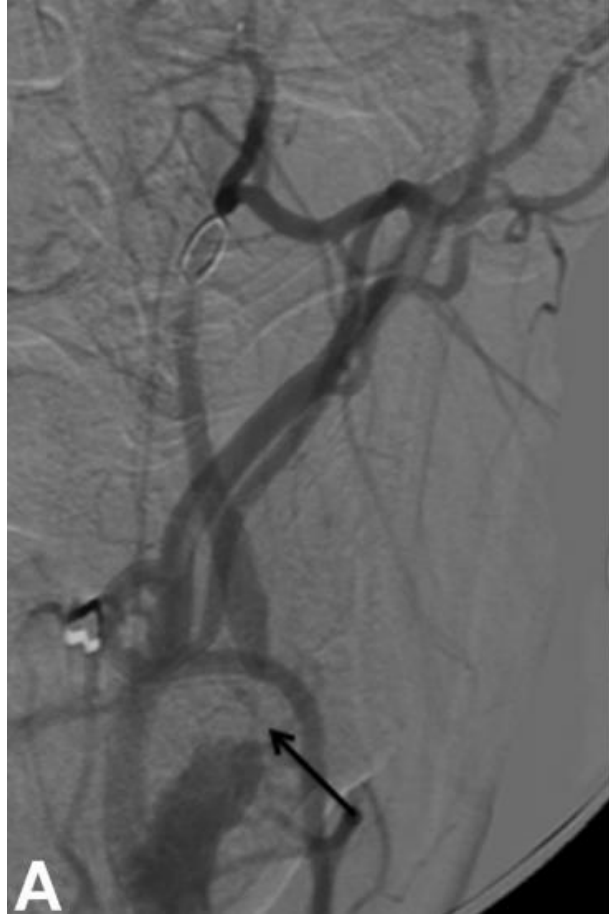
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Introduction

- ◆ Tandem occlusion is defined as stenosis or occlusion of the extracranial carotid artery that is associated with thromboembolism of the intracranial carotid, middle cerebral artery (MCA) or anterior cerebral artery (ACA).
- ◆ 8% of stroke patients.







Introduction

- ◆ Although tissue plasminogen activator (t-PA) is the standard of care in stroke management, only 30% of patients receiving IV t-PA recovered to a good clinical outcome.
- ◆ This poor outcome is attributed to the limited delivery of the thrombolytic to anterior cerebral circulation due to the proximal ICA stenosis/occlusion.

Introduction

- ◆ New endovascular treatment of tandem cerebral occlusions have been developed showing promising results.
- ◆ Two approaches have been described, retro- and anterograde based on the sequence of addressing the two lesions.

Anterograde Approach

- ◆ Anterograde is when extracranial revascularization is done first followed by intracranial recanalization.



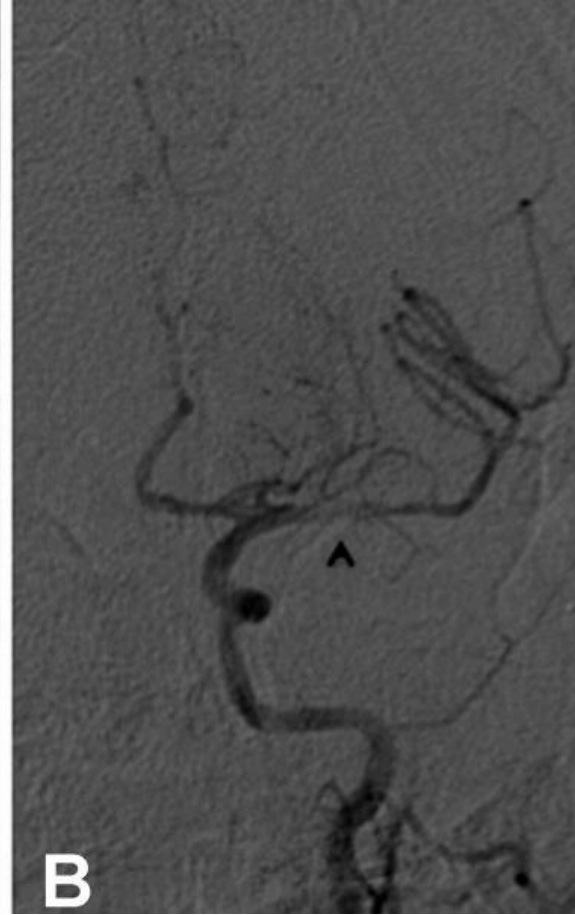
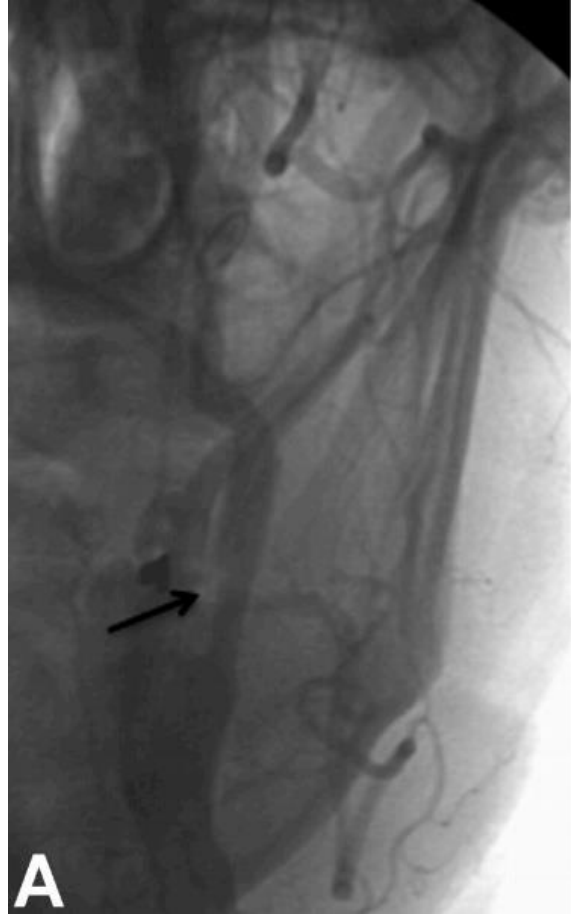
Retrograde Approach

- ◆ Retrograde is intracranial recanalization is done first followed by extracranial revascularization.



Introduction

- ◆ mRS: Modified Rankin Scale measures disability or dependence in activities of daily living in stroke victims.
- ◆ NIHSS: National Institutes of Health Stroke Scale evaluate neurological outcome and degree of recovery in stroke patients.
- ◆ TICl: Thrombolysis In Cerebral Infarction is a angiographic grading system for determining the response of therapy for ischemic stroke.



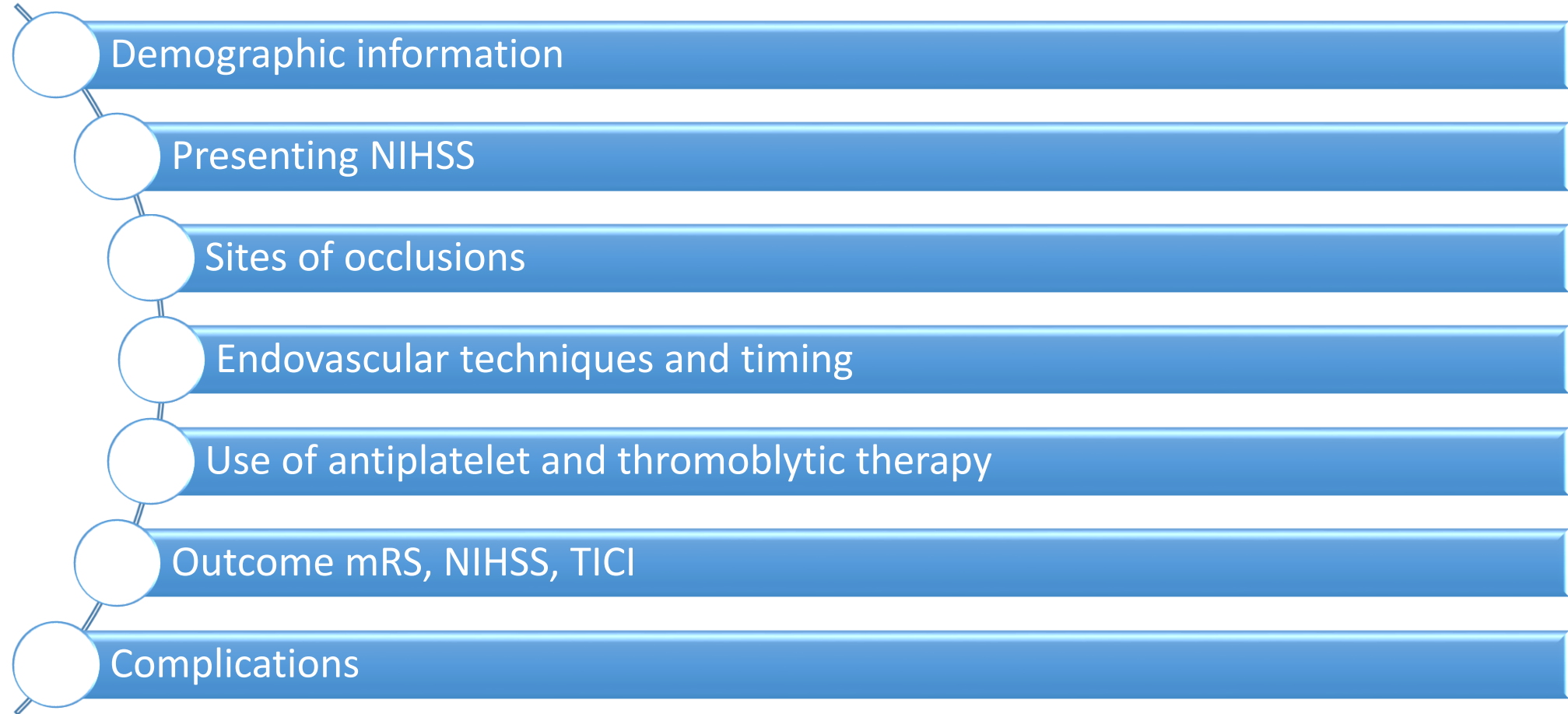
Methodology

- ◆ Literature review was carried out using PubMed.
- ◆ We reviewed studies that described endovascular management for patients with tandem occlusions/stenoses of extracranial and intracranial arteries of the anterior cerebral circulation from the year 2013 to 2015.
- ◆ Inclusion criteria was defined for:
 - ◆ Patients who are ≥ 18 year old at time of diagnosis.
 - ◆ Published in English in Literature.

Methodology

- Exclusion Criteria:
 - Studies that didn't describe most of the parameters of interest.
 - Studies that described the variables and results indiscriminately between patients.
 - Review articles.
 - Published abstracts and conference presentations.
- Analysis was performed using SPSS version 21.

Methodology



Results

- 9 studies were finally reviewed.
- 99 patients were included.
- Median age: 64 years (Range: 18-90)
- Male to female ratio: 3:1.
- Median NIHSS at the time of admission: 16 (SD \pm 5.5).
- MCA was found to be the most common intracranial occlusion site associated with the ipsilateral extracranial carotid artery stenosis/occlusion.

Results

- Mean time from onset of symptoms to recanalization: 412 minutes. (Range: 120-1574)
- Mean time from groin to recanalization: 83 minutes. (Range: 14-180)
- Mean outcome mRS: 2.39 (SD \pm 2.2).
- Overall, 61.9% of patients had mRS of ≤ 2 at 90 days.
- 81.25% of patients who had mRS of ≤ 2 had groin to recanalization time of less than 90 minutes compared to longer procedure time (**p-value: 0.018**).
- 60.5% of patients who received IV tPA had mRS ≤ 2 , while 52.2% of patients who didn't receive IV tPA had similar end results. (**p-value: 0.14**)

Results

- 7% of patients underwent retrograde approach. 85.7% of them had outcome mRS of ≤ 2 compared to 60% of patients with anterograde approach (**p-value: 0.016**).
- Overall, 77.8% of the patients had TICl scale of $\geq 2b$.
- 95.8% who received intravenous t-PA had TICl scale of $\geq 2b$ while 75.7% who did not receive IV t-PA had same TICl scale (**p-value: 0.041**).
- The most common reported complication was cerebral hemorrhage in 13.9% of patients.

Discussion and Conclusion

- Tandem occlusion is a challenging condition to manage.
- Recently, Endovascular treatment have shown promising results.
- However, controversies are present around which endovascular technique to use.
- Our study have shown than groin to recanalization time of less than 90 minutes and the retrograde approach have shown to be favorable prognostic factors based on mRS.
- The use of IV t-PA has been associated with higher TICI scales but did not show statistically superior prognosis.



THANK YOU!

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