

Laterality of MCA Occlusion as a Predictor of Peri-Procedural Intubation During Thrombectomy

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Introduction

The role of intubation for thrombectomy patients remains controversial. In our practice we perform thrombectomies under monitored sedation for all patients with middle cerebral artery (MCA) syndrome unless clinical or neurologic status necessitates intubation.

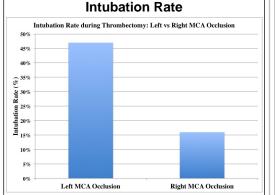
Methods

A retrospective analysis was conducted examining patients who underwent thrombectomy for MCA occlusion from April 2014 to December 2016. Only patients with an M1 or M2 segment MCA occlusion were included. Patient charts were reviewed for laterality and segment of MCA occlusion, in addition to need for intubation before or during the procedure. Fisher's exact test was used to compare intubation rates for patients with left versus right MCA occlusion undergoing thrombectomy. Logistic regression was performed to adjust for additional confounders.

Conclusions

Patients undergoing thrombectomy for left MCA syndrome have increased odds of requiring intubation compared to right MCA syndrome.

Left vs Right MCA Thrombectomy



47% of patients with a left MCA occlusion required intubation whereas 16% of patients with a right MCA occlusion required intubation.

Results

Eighty-seven patients underwent mechanical thrombectomy for MCA occlusion. 51 patients (59%) underwent thrombectomy for left MCA occlusion and 36 patients (41%) underwent thrombectomy for right MCA occlusion. 47% of patients with a left MCA occlusion required intubation whereas 16% of patients with a right MCA occlusion required intubation (Figure 1).

By Fisher's exact test, patients with a left MCA occlusion had a 4.5 odds ratio of requiring intubation (p<0.01). This relationship remained significant when adjusting for additional confounders including age, gender, NIH stroke scale, and administration of TPA (p<0.01). The most common causes for intubation were failure to protect airway and agitation. We believe aphasia secondary to left MCA syndrome is a significant factor correlating to need for intubation in this population, as lack of communication can result in agitation, inability to follow commands, and overall inferior procedural conditions. Physicians performing thrombectomy for stroke should be cognizant of the higher rate of intubation in left MCA syndrome as this can streamline care for these patients.

Learning Objectives

By the conclusion of this session, participants should be able to:

1. Identify the increased odds of intubation for patients with left MCA syndrome that undergo thrombectomy.

2. Discuss, in small groups, institutional experiences about the differences in intubation rates for thrombectomy with right versus left MCA syndrome.

3. Identify a sub-population of patients that may have additional risk of intubation to further optimize the endovascular management for these patients.

References

1.Bushnell C, Phillips-Bute B, Laskowitz D, Lynch J, Chilukuri V, Borel C: Survival and outcome after endotracheal intubation for acute stroke. Neurology 52:1374-1374, 1999

2.Steiner T, Mendoza G, De Georgia M, Schellinger P, Holle R, Hacke W: Prognosis of stroke patients requiring mechanical ventilation in a neurological critical care unit. Stroke 28:711-715, 1997

3.Takahashi C, Liang CW, Liebeskind DS, Hinman JD: To tube or not to tube? The role of intubation during stroke thrombectomy. Frontiers in neurology 5, 2014