



Management of acute intracranial vertebrobasilar artery occlusion: Single institution's experience of Mechanical Thrombectomy utilizing stent retrievers

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Introduction

The management of acute intracranial vertebrobasilar-artery-occlusion(VBO) has steadily been increasing since the advent of stent retrievers but often with high mortality and morbidity. The aim of the current study is to report the outcomes of mechanical-thrombectomy in posterior-circulation, with focus on efficacy and efficiency of stent-retrievers.

Methods

We retrospectively reviewed our endovascular database for all patients treated with stent-retrievers for posterior-circulation stroke from august2012- Dec2014. Eight-patients were identified. Occlusion location, time to revascularization from the start of intervention, devices used, pre-procedure IV-tPA status, pre-procedure NIHSS status and outcomes were analyzed.

Results

Eight patient were included in the analysis .The average NIHSS score at presentation was 19.37(SD 7.61,median18.5). Basilar-terminus (Figure1A)was the commonest location(5/8,62.5%) followed by mid-basilar(2/8,25%) and proximal-basilar(1/8,12.5%). 37.5%(3/8),patients received tPA prior to revascularization. We used solitaire-device in 4/8(50%), solitaire-with-penumbra aspiration(solumbra) in 3/8(37.5%) and trevo-device in 1/8(12.5%).

The mean time from presentation to initiation of the endovascular-procedure was 58 min(SD19.66, median 51).The mean time for recanalization from the start of angiography was 30.14 min(SD 9.35,median 36). In 7(87.5%)patients revascularization was successful (Thrombolysis-in-Cerebral-Infarction[TICI] score of 2 or 3).A TICI-score of 3 (figure 1C)was achieved in 62.5% patients.Two patients died during their hospital-stay, one of them had TICI 0-revascularization, presentation NIHSS was 25 and other had a presentation NIHSS of 30(TICI-score 3).

At the follow-up(mean 94.38 days,range 14-218 days), 5 patients(62.5%) had achieved good outcome (modified-Rankin-Scale[mRS]0score = 2) and 3(37.5%) had poor-outcomes(mRS Score 3-6). If mortality is excluded good-outcome was achieved in 83.33% patients.

Conclusions

Historically, published cases series have shown poor outcomes with high mortality. Our series have not only shown mortality in the acceptable range but also good outcomes in patients who were discharged from the hospital. Moreover we were able to achieve good outcomes in 9/10(90%) patients who were not IV tPA candidates. Data in this series show that good outcomes could be achieved in the revascularization of posterior circulation occlusions with acceptable lower mortality rates with newer stent retriever techniques

figure 1A



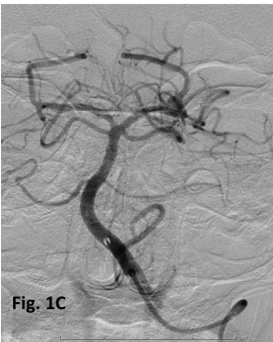
Basilar top occlusion

Figure 1B



Triaxial system, 5max ace, velocity microcatheter and synchro 2

Figure 1C



TICI 3 recanalisation

Learning Objectives

the readers will become aware of the safety and efficacy of stent retrievers in the management of posterior circulation stroke.