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Titel des Beitrags:
Endovascular Treatment of Acute Intracerebral Artery Occlusions with the Solitaire Stent: Single-Centre Experience with 108 Recanalization Procedures

Abstract:
Background and Purpose: Stent retrievers are currently displacing ‘classical’ thrombectomy devices for recanalization in acute ischaemic stroke. The aim of our study was to show the procedural efficacy and safety of the Solitaire stent retriever as part of our multimodality endovascular approach in the treatment of ischaemic stroke.
Methods: Between March 2008 and December 2009, 104 patients [53 females (51%), 51 males (49%), mean age 67.3 years (range 31–96)] with 108 territorial occlusions were treated with the Solitaire stent alone or in conjunction with other endovascular stroke devices. All patients were referred to our service after clinical evaluation by a team of stroke neurologists as part of our standard treatment algorithm with 0.9 mg/kg i.v. recombinant tissue-type plasminogen activator and endovascular continuation of treatment in CT angiography-proven main branch occlusion. The time of angiography was defined as the moment of groin puncture. Final reperfusion success was rated according to the Thrombolysis in Cerebral Infarction (TICI) scale; the first persistent Thrombolysis in Myocardial Infarction (TIMI) 2/3 reperfusion was used for time-to-reperfusion measures.
Results: Fifty-eight patients were treated in conjunction with intravenous lysis, 32/104 received intra-arterial lytics. Twenty-five territories were treated with the Solitaire alone; the remaining 83 were
treated with a combination of mechanical thrombectomy devices or aspiration thrombectomy followed by or in conjunction with the Solitaire. The most frequent combination was a proximal aspiration/distal access catheter and Solitaire (62/108). In 15/108 procedures, temporary stenting without thrombectomy was performed. Eighty-three successful thrombectomy attempts were performed in the remaining 93 territories. The mean number of Solitaire passes was 2.46 (median 2, max. 12). The mean time from onset to reperfusion was 265 min (range 56–1,031), median 230 min; the mean angio-to-reperfusion time was 47 min (5–186), median 38.5 min. A subanalysis showed a significant reduction of the angio-to-reperfusion time when the Solitaire was used (48.7 vs. 68 min). The rate of final TICI 2b/3 reperfusion was 79% for the anterior and 77.9% for the posterior circulation (TIMI 2/3 for both: 92.5%). During or after the first deployment of the Solitaire, 72.8% showed TIMI 2/3 reperfusion. The mean National Institute of Health Stroke Scale score on admission was 15.3 and decreased by 7.8 points at clinical discharge. The overall mortality at discharge was 16% in the anterior and 47.8% in the posterior circulation group. There were 2 cases of periprocedural intracranial haemorrhage, unrelated to the Solitaire, 6 patients had evidence of subarachnoid haemorrhage, 2 potentially related to the Solitaire deployment. Vasospasm was seen in 13% of the target vessels. One device was inadvertently detached during retrieval. All these complications had no clinical consequence. Conclusions: Our single-centre experience proves the technical feasibility and safety of the Solitaire for the treatment of acute intracranial vessel occlusion and approves previous reports with smaller patient numbers. Further multicentre studies with a randomized and prospective design will be necessary to verify the results.

Stichworte: Stroke; Endovascular treatment; Stent retriever; Solitaire

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