

## Clinical and Radiological Outcome in 300 Patients with Non-Aneurysmal Sah

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**Abstract :** Background: Spontaneous subarachnoid haemorrhage (SAH) accounts for approximately 5% of all strokes. Patients with spontaneous SAH (as shown by CT or lumbar puncture) undergo investigations to identify or exclude an underlying structural cause, typically cerebral aneurysm. However in 10 - 20% of cases, no structural cause is found. This includes more than one imaging modality (intracranial MRA, CTA, 4DCTA and/or DSA) and in some spinal MRI. Objective: To determine; 1) If an underlying structural or vascular cause can be identified in non-aneurysmal SAH patients by comparing different imaging modalities at presentation and at follow-up. 2) If MRI spine in patients with non-aneurysmal SAH reveals an underlying SAH cause. 3) The functional outcome at discharge. Results: We performed a retrospective analysis of all non-traumatic SAH patients admitted to the Walton centre from January 2009 to December 2015. There were 1457 patients with non-traumatic SAH admitted to the Walton centre of whom 21.8% (n=300) patients were diagnosed with non-aneurysmal SAH. Males were 65.6% and females were 43.3%. The presenting symptoms were sudden onset headache (93.6%), the focal neurological deficit (12%), loss of consciousness (10.6%) and others (6%). About 285 patients received 2 modalities of imaging (CTA & DSA), 192 received 3 modalities of imaging (CTA, MRA & DSA) and 137 received MRI spine (51/137 whole spine). The modified Rankin Score at discharge were: mRS 0 = 292 (97.33%), mRS 1-2 = 6, mRS 6 = 1 (cardiac arrest in IHD patient) and unknown in 1. Follow-up imaging at 3 to 6 months in 190 (63.3%) patients did not identify an underlying cause. Conclusion: This retrospective analysis concludes that non-aneurysmal SAH has a good functional outcome. A single imaging modality (CTA (4DCTA) or MRA or DSA) was adequate to exclude an underlying cause of SAH and a delayed imaging failed to identify a cause. Routinely performing MRI spine in this group of patients appears not to be necessary according to this evidence.

**Keywords :** stroke, non-aneurysmal subarachnoid haemorrhage, neuroimaging, modified rankin score

**Conference Title :** ICNN 2017 : International Conference on Neurology and Neurosurgery

**Conference Location :** London, United Kingdom

**Conference Dates :** February 16-17, 2017