

Mechanical thrombectomy complications

[Mechanical thrombectomy](#) is associated with a number of intra-procedural or post-operative [complications](#), which need to be minimized and effectively managed to maximize the benefits of [thrombectomy](#).

Procedural complications

Procedural complications include: access-site problems (vessel/nerve injury, access-site hematoma and groin infection); device-related complications ([vasospasm](#), arterial perforation and dissection, device detachment/misplacement); symptomatic [intracerebral hemorrhage](#); [subarachnoid hemorrhage](#); [secondary embolism](#) to new or target vessel territory.

Other complications include: anesthetic/contrast-related, post-operative hemorrhage, extra-cranial hemorrhage and [pseudoaneurysm](#). Some complications are life-threatening and may lead to increased length of stay in intensive care and stroke units. Complications increase [costs](#) and delay the commencement of [rehabilitation](#). Some may be preventable; the impact of others can be minimized with early detection and appropriate management. Both neurointerventionists and stroke specialists need to be aware of the risk factors, strategies for prevention, and management of these complications. With the increasing use of mechanical thrombectomy for the treatment of [acute ischemic stroke](#), [incidence](#) and outcome of complications will need to be carefully monitored by [stroke](#) teams.

In a narrative review, Balami et al. examined the frequency of complications of MT in the treatment of [acute ischemic stroke](#) with an emphasis on periprocedural complications. Overall, from randomized controlled trials, the risk of complications with sequelae for patient from mechanical thrombectomy is ~15%.

They discussed the management of complications and identify areas with limited evidence, which need further research. Search strategy and selection criteria Relevant evidence were found by searches of Medline and Cochrane Library, reference list, cross-referencing and main journal content pages. Search terms included "brain ischemia", "acute ischemic stroke", "cerebral infarction" AND "mechanical thrombectomy", "endovascular therapy", "endovascular treatment", "endovascular embolectomy", "intra-arterial" AND "randomized controlled trial", "non-randomised trials", "observational studies" AND "complications", "procedural complications", "peri-procedural complications", "device-related complications", "management", "treatment", "outcome". The search included only human studies, and was limited to studies published in English between January 2014 and November 2016. The final reference list was selected on the basis of relevance to the topics covered in the Review. Guidelines for the management of acute ischaemic stroke by the [American Heart Association](#), the [European Stroke Organisation](#), multi-disciplinary [guidelines](#) and the [National Institute for Health and Care Excellence](#) (NICE) were also reviewed ¹⁾.

Higher [thrombus](#) density was the independent predictor for [secondary embolism](#). Further studies are needed to investigate its role in the optimization of [mechanical thrombectomy](#) strategy ²⁾.

Subarachnoid hemorrhage

The prognostic relevance of post-mechanical thrombectomy (MT) subarachnoid hemorrhage (SAH) remains controversial. This study aimed to investigate whether the thickness of the SAH clot affects clinical outcomes following MT for M2 occlusion.

Methods: A retrospective analysis was conducted on a prospective database of patients who underwent MT for isolated M2 occlusion. Patients were categorized into three groups based on the presence and thickness of SAH. Clinical and angiographical characteristics and outcomes were compared.

Results: Of the 36 patients included, SAH was observed in 15 (42%). When comparing patients with no SAH (grade 0) or thin SAH (grade 1) (N = 28) with those who had thick SAH (grade 2) (N = 8), patients with Grade 2 SAH required a higher number of passes and had a more severe angulation at M2. Patients with SAH Grade 2 had significantly worse NIHSS scores at 24 h (median, 4 vs. 14), but only one patient was identified as having a symptomatic intracranial hemorrhage. Patients with SAH Grade 2 were found to have a lower rate of favorable outcome (modified Rankin scale 0-2) (23% vs. 75%, $P = 0.0026$) and higher mortality (25% vs. 0%, $P = 0.0499$) at 90 days.

Conclusion: The study found that thick SAH prevents clinical recovery after MT for M2 occlusion, even in cases of successful recanalization, and is associated with an unfavorable outcome. Thick SAH after MT is also linked to an increase in the number of passes and severe angulation at the M2 segment ³⁾

Unclassified

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