

Ventriculoperitoneal shunt complication after dual antiplatelet therapy

Especially, invasive procedures like [external ventricular drainage](#) (EVD) or [ventriculoperitoneal shunt](#) (VPS), which are inevitable for patients presenting with [hydrocephalus](#), might lead to [intracerebral hemorrhages](#) (ICH) or [contusions](#) along the trajectory of the [catheters](#). However, abrupt cessation of [antiplatelets](#) should be avoided, since it might increase the risk of [thromboembolism](#), especially during the acute period after [stent](#) placement ¹⁾.

Balancing the risk of stent-associated thromboembolism and perioperative hemorrhagic events is challenging. There are no evidence-based guidelines for the management of DAPT in patients who have recently undergone placement of neurovascular stent and require intracranial surgical procedures. Previous retrospective studies suggested that VPS in patients on DAPT might be associated with an increased risk of ICH; however most of the hemorrhages were asymptomatic ^{2) 3)}

The effect of the loading dose of antiplatelets prior to the stent coiling procedure in an unsecured [wide necked](#) ruptured intracranial aneurysm is not known.

In the series of Lodi et al carefully selected patients, therapeutic dual antiplatelet loading prior to Stent-assisted coiling of ruptured wide necked intracranial aneurysm was not associated with increased bleeding complications. However, thromboembolic events remain the main challenge. Further study is required to confirm the safety of antiplatelet loading in stent assisted ruptured intracranial aneurysm coiling ⁴⁾.

For wide-necked aneurysms, a stent may be used to prevent the coils from herniating out of the aneurysm into the blood vessel. When a stent is used, the patient is required to be on ASA (most commonly indefinitely, although certain centers stop all antiplatelet drugs after 1 year) and clopidogrel or alternative agents such as ticagrelor or prasugrel (typically for 3–6 months). Therefore, stent-assisted coiling is generally avoided in ruptured aneurysms, in part due to the fact that if an EVD, ventricular shunt, or craniotomy is needed it may require temporary reversal of antiplatelet medication, which increases the risk of acute in-stent thrombosis. However, it has also been undertaken successfully in ruptured cases, with 93% technical success, clinically significant ICH in 8% (including 10% known to have EVDs), and significant thromboembolic events in 6% ⁵⁾.

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