Aspirin in intracranial surgery

Aspirin has been identified as an important risk factor in the development of postoperative intracranial hemorrhage following intracranial surgery [1].

Thrombocytopenia and other hemostatic disorders were frequently associated with post-operative hemorrhage after intracranial meningioma surgery, while no surgical factors could be defined. Extending coagulation tests and specific replacement therapy may prevent hematoma formation and improve the patients outcome [2].

The majority of Neuroanesthesiologists felt that aspirin was a risk factor for postoperative hemorrhages associated with intracranial procedures, but most adopt no policy regarding its preoperative discontinuation [3].

Two patients are reported in whom repeated postoperative hematomas appeared to be secondary to aspirin-induced platelet defect. Routine bleeding and clotting studies will not demonstrate this platelet-induced coagulopathy. A previous history of massive aspirin ingestion makes such a coagulopathy a serious consideration, but the platelet defect may occur with small doses of aspirin. Such aspirin ingestion should be viewed with great concern by the neurosurgeon. The defect is treatable by platelet transfusion [4].

Administration of antiplatelet agents (aspirin and nonsteroidal anti-inflammatory drugs) was the most commonly associated risk factor [5].

In 2013 a small clinical series suggests that placement of a VP shunt in patients on dual antiplatelet therapy may be associated with an increased, but low, rate of symptomatic intracranial hemorrhage. It appears that in patients who are poor candidates for open surgical clipping and have aneurysms amenable to stent-assisted coiling, the risk of symptomatic hemorrhage may be an acceptable trade-off for avoiding risks associated with discontinuation of antiplatelet therapy. The authors' results are preliminary, however, and require confirmation in larger studies [6].

Ventriculoperitoneal shunt placement is a common procedure for the treatment of hydrocephalus following diverse neurosurgical conditions. Most of the patients present with other comorbidities and receive antiplatelet therapy, usually acetylsalicylic acid (ASA).

Of 172 consecutive patients undergoing VP shunt placement between June 2009 and December 2015, 40 (23.3%) patients were receiving low-dose ASA treatment. The primary outcome measure was bleeding events in ASA users versus nonusers, whereas secondary outcome measures were postoperative cardiovascular events, hematological findings, morbidity, and mortality. A subgroup analysis was conducted in patients who discontinued ASA treatment for < 7 days (n = 4, ASA Group 1) and for ≥ 7 days (n = 36, ASA Group 2). RESULTS No statistically significant difference for bleeding events was observed between ASA users and nonusers (p = 0.30). Cardiovascular complications, surgical morbidity, and mortality did not differ significantly between the groups either. Moreover, there was no association between ASA discontinuation regimens (< 7 days and ≥ 7 days) and hemorrhagic events.

Given the lack of guidelines regarding perioperative management of neurosurgical patients with antiplatelet therapy, these findings elucidate one issue, showing comparable bleeding rates in ASA users and nonusers undergoing VP shunt placement [7].

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