Cerebrovascular complications and granuloma formation after wrapping or coating of intracranial aneurysms with cotton gauze and human fibrin adhesives: Results from a single-center patient series over a 5-year period.

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Abstract:

Object. Reinforcement of intracranial aneurysms (IAs) by wrapping or coating is a well-established therapeutic approach to those IAs not amenable to any other definitive treatment, but has been associated with complications such as parent artery narrowing, granuloma formation, and ischemic stroke. The goal of this study was to systematically investigate cerebrovascular complications following this procedure. Methods. The authors' hospital database was searched for all patients who underwent wrapping or coating of IAs with cotton gauze and human fibrin adhesives between October 2006 and October 2011. The follow-up records of these patients were extracted, including regular clinical visits and vascular imaging. Results. Five hundred sixty-seven patients were treated for IAs over the 5-year period: 303 patients underwent endovascular strategies and 264 underwent craniotomies. Wrapping or coating of IAs was performed in 20 patients (3.5%). Parent artery narrowing occurred in 5 (25%) of the 20 patients and was associated with major ischemic strokes in 4 patients and severe headache in another. Ischemic strokes were associated with parent artery narrowing, which occurred early postoperatively in 2 patients or was a consequence of granuloma formation in 2 patients 1 and 2 months after the procedure, respectively. Conclusions. These data should add to the awareness of significant cerebrovascular complications following wrapping or coating of IAs with cotton gauze and human fibrin adhesives and indicate that major ischemic strokes need to be included in the risk/benefit considerations during decision making for such

treatment strategies. Patients who receive IA wrapping should be monitored and followed up closely for arterial narrowing and granuloma formation.