Effect of fibrin glue injection into the cavernous sinus for hemostasis during transcavernous surgery on the cerebral venous draining system.

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Abstract:

BACKGROUND: The extradural temporopolar transcavernous approach can be used to treat central skull base pathologies, but control of bleeding from the opened cavernous sinus is essential. Oxidized cellulose cotton packing and fibrin glue injection can be used, but the effect on the postoperative venous draining pattern remains unclear. OBJECTIVE: To investigate changes in the venous drainage pattern immediately after transcavernous surgerywith and without fibrin glue injection into the bleeding cavernous sinus. METHODS: A total of 82 patients treated via the transcavernous approachwere retrospectively divided into 2 groups based on the hemostasis methods. Both pre-And postoperative angiography and/or 3-dimensional computed tomography venography were available for 24 patients in the cotton packing group and 12 patients in the fibrin glue group. RESULTS: Postoperative change in the venous draining pattern was observed in 5 of the 24 patients in the cotton packing group and in 3 of the 12 patients in the fibrin glue group. One of the 82 patients showed postoperative brain swelling due to obstruction of the sphenoparietal sinus. The volume of injected fibrin glue ranged from 0.5 to 2.5 mL (mean, 1.1 +/- 0.5 mL), but none of the patients had brain swelling. CONCLUSION: Direct fibrin glue injection into the opened cavernous sinus is relatively safe, but a change in the venous draining pattern occurs in 25% of patients. The study indicates the potential danger of the change in the venous draining pattern and recommends limiting the injection volume of fibrin glue in transcavernous surgery to avoid complications related to

venous congestion.