Protective coating of cranial nerves with fibrin glue (Tissucol) during cranial base surgery: technical note.

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Abstract:

OBJECTIVE: Cranial nerve deficit, either transient or permanent, is a common postoperative complication after cranial base surgery. Frequently, this occurs because intracranial nerves are directly involved in the cranial base lesion. However, any cranial nerve adjacent to the lesion can be damaged because of direct or indirect manipulation during surgery, leading to severe morbidity. We describe a new technique in which the adjacent intracranial nerves are protected from surgical trauma by coating the nerves with a biological two-component fibrin glue (Tissucol; Immuno A.G., Vienna, Austria).

SURGICAL TECHNIQUE: The technique was performed in patients who underwent cranial base surgery for different types of lesions. After exposure of the operating field, the cranial nerves that were at risk of operative trauma were coated with a thin layer of fibrin glue using a double lumen catheter within a traditional suction device.

RESULTS: With the application of fibrin glue, a protective layer of a rubbery consistency is formed around the nerve. No intraoperative complications or adverse effects of the application were noted. Moreover, no surgical injury of the nerves occurred and no or minimal postoperative cranial nerve deficit was noted in the coated nerves.

CONCLUSION: Although it is difficult to compare the postoperative cranial nerve deficit in the

coated nerves with a control group, we think that this technique is a valuable method to minimize or avoid intraoperative cranial nerve injury during cranial base surgery.