Fibrin glue injection for cavernous sinus hemostasis associated with cranial nerve deficit: A case report.

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Abstract:

Introduction: Fibrin glue injection has been utilized to control intraoperative cavernous sinus (CS) venous bleeding. There have been no reported complications related to this maneuver. We present a case where a patient developed a sensory trigeminal nerve (TN) deficit, after injection of fibrin glue into the posterior CS during resection of a petrosal meningioma. Case Report: A 40 year-old female with radiation induced petrous apex meningioma. Operation: The patient underwent resection of the lesion via a posterior fossa approach. After complete resection of the lesion, the involved dura was excised to the junction of the superior petrosal sinus and the posterior wall of the CS, where venous hemorrhage ensued. This was easily controlled with injection of fibrin glue into the posterior CS. The remaining of the procedure was uneventful. Postoperatively, the patient developed new onset ipsi-lateral facial numbness. There was dense hypoalgesia and hypoesthesia in the trigeminal V1 and V2 distribution, and less effected, in V3. The motor trigeminal function was intact. Post-op MRI demonstrated total gross resection; however, there was expansion of the CS by the fibrin glue. Repeated post-op MRI at three months, demonstrated resolution of the CS expansion (see Fig. 1). However, the patient's sensory TN deficit persisted after 18 months follow-up. Discussion: To our knowledge, this is the first case report describing a cranial nerve deficit following fibrin glue injection into the CS. The CS expansion on the post-op MRI is attributed to the fibrin glue, which produced a compressive lesion on the trigeminal ganglion (TG) with the resultant sensory deficit. This situation is analogous to percutaneous balloon compression (PBC) of the TG for the treatment of trigeminal neuralgia. A known complication of PBC is TN sensory deficit, which has been shown to relate to the

amount and duration of PBC pressure on to the TG. Though fibrin glue injection may achieve satisfactory cavernous sinus homeostasis, the volume and rate of injection should be kept in mind to avoid a compressive lesion on traversing cranial nerves and surrounding structures, or retrograde filling of the venous tributaries. (Figure Presented).