Cerebellar infarction after superior petrosal vein injury

Venous infarction as a complication of microvascular decompression (MVD) is a recognized but extremely rare occurrence in an otherwise standard neurosurgical procedure. Sacrificing one or more veins is considered safe by majority of experienced surgeons and authors. However, there has been growing debate about the management of venous trigeminal compression and/or superior petrosal complex (separation vs. coagulation and cutting of the vein), with few papers describing mild to severe complications related to venous sacrifice ¹⁾.

The drilling of the suprameatal bone during the retrosigmoid intradural suprameatal approach (RISA) puts the superior petrosal vein complex at risk of heating and mechanical injury, which may lead to cerebellar swelling and infarction.

Reflecting a dural flap onto the posterior trigeminal nerve root and the superior petrosal vein complex can be a simple way to protect the nerve and the vein during the suprameatal bone drilling during the RISA $^{2)}$.

Case reports

2017

One patient with cutoff SPV trunk encountered cerebellar infarction and recovered completely at 2 weeks after MVD by using intravenous medication 3 .

Fatal cerebellar infarction after sacrifice of the superior petrosal vein during surgery for petrosal apex meningioma ⁴⁾.

2016

Anichini et al. report the dramatic experience during re-exploration for MVD on a male who developed massive cerebellar, brainstem, and brain infarction.

Despite rare, venous infarction after venous sacrifice in MVD is possible and can have catastrophic consequences.

They advise: (1) To try preserving the vein anytime this is possible, especially if it is large in size; (2) if it is decided to sacrifice the vein temporary occlusion while observing changed in the neurophysiology might be safer; (3) when planning an MVD for suspected venous compression, possible alternative forms of treatment should also be considered 5

1) 5)

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2)

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