

The pathogenesis of delayed epidural hematoma after lateral suboccipital retrosigmoid approach for microvascular decompression

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Introduction

Delayed epidural hematoma (EDH) after lateral suboccipital retrosigmoid approach for microvascular decompression (MVD) is extremely rare. Moreover, the pathogenesis of its supratentorial extension is obscure. The purpose of this study was to analyse delayed EDH after MVD and to prevent surgical morbidity.

Methods

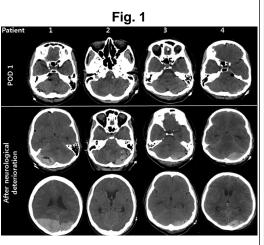
Between April 1997 and June 2016, over 3300 patients underwent MVD for neurovascular compression syndrome by a single neurosurgeon. The medical chart of four patients with delayed EDH were retrospectively reviewed.

Results

The median time from MVD to re-CT scan was 58 hours (range, 33 -100). All patients underwent hematoma evacuations. Intraoperative findings during hematoma evacuation revealed only an oozing hemorrhage from the transverse sinus with no definitive bleeding focus. The patients spent a median of 21.5 days (range, 11 -39) at the hospital. At the last followup, all patients had fully recovered without significant neurological deficits and exhibited complete relief or minimal symptoms from hemifacial spasm (HFS).

| Table 1 | | | | |
|--------------------------------------|--|-----------|------------------------|------------------------------|
| Patient | 1 | 2 | 3 | 4 |
| Age | 60 | 56 | 40 | 51 |
| Sex | F | F | F | F |
| Diagnosis | HFS | HFS | HFS | HFS |
| Affected side | R | L | L | L |
| Reason for re-CT | Drowsiness | Dizziness | Vomiting dysarthria | Rt weakness Drowsiness |
| Time to re-CT (hr) | 33 | 100 | 73 | 43 |
| EDH location | Both | Infra | Both | Both |
| Treatment for EDH | Hematoma evacuation | | | |
| Revision Op finding | No definitive bleeding focus, T-sinus oozing | | | |
| Hospital stay (day) | 39 | 11 | 13 | 30 |
| Post-MVD f/u duration (day) | 748 | 473 | 448 | 116 |
| At last f/u | | | | |
| Outcome of MVD (residual symptom) | 0 | 30% | 0 | 0 |
| Facial palsy | n | n | n | n |
| Hearing loss | n | n | n | У |
| Other sequalae | Dizziness | n | n | Gait disturbance Diplopia |

Characteristics of patients with delayed EDHs after MVD



The patients complained of neurological changes, and CT scans were performed at a median of 58 hours (range, 33 – 100) after the surgeries. CT scans performed after neurological deterioration showed large EDHs that involved the posterior fossa and extended supratentorially except in Patient 2. All patients underwent hematoma evacuations.

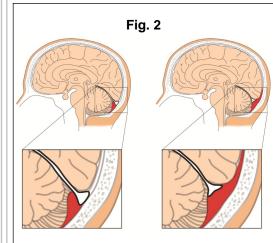
Conclusions

Delayed EDH after posterior fossa surgery such as MVD with small cranial opening is an extremely rare complication. The pathogenesis is postulated as the gradual EDH accumulation during the period of cerebellar shrinkage, detachment of the transverse sinus from the overlying cranium, and its supratentorial extension. CSF should be gradually drained during surgery. And CSF replacement with saline and one or two dural tacking sutures at the end of surgery can be helpful in preventing the delayed EDH.

Learning Objectives

Identify the characteristics of delayed EDH after lateral suboccipital approach for MVD.

Know how to prevent delayed EDH.



The pathogenesis of delayed EDH is postulated as the gradual EDH accumulation during the period of cerebellar shrinkage, detachment of the transverse sinus from the overlying cranium, and its supratentorial extension.

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