Microvascular decompression for hemifacial spasm complications

This technique, exposes patients to rare morbidity such as nervous lesion (facial palsy, hearing loss, vestibular disorder), neurosurgical (cerebrospinal fluid leak, infection, bleeding), scarring and general complications (anesthesia complications) 1).

The HemiFacial Spasm 8 Quality of Life Scale (HFS-8) is the reference parameter to investigate efficacy of post-operative results of MVD 2).

In 2018 Sindou and Mercier have been charged by the French Speaking Society of Neurosurgery to conduct a detailed evaluation of the probability of relief of the spasm that MVD is able to obtain, together with its potential complications. For the review, the authors have gone through the reports available from the Pubmed system. Eighty-two publications have been read and analysed, totaling more than 10,000 operated cases. In most series, the percentage of patients with total relief ranged between 85% and 90%. Relief was obtained after a certain delay in as many as in 33%±8% of the patients in many series. For those, delay lasted around one year in 12% of them. When effect of MVD was considered achieved, relief remained permanent in all but 1%-2% of the long-term followed patients. As regards to complications, risk of permanent cranial nerve deficit was evaluated at 1%-2% for facial palsy, 2%-3% for non-functional hearing loss, 0.5%-1% for lower cranial nerve dysfunction. Risk of stroke was at 0.1% and mortality at 0.1%. CSF leakage and related complications could be reduced at less than 2% in most series provided careful closing techniques be applied. Complications were at a higher rate in repeated MVD. MVD is an effective curative method for almost all the patients affected with primary HFS. Because MVD for HFS is functional surgery, scrupulous consideration of its potential risks, together with the ways to avoid complications are of paramount importance. When MVD is estimated to have failed, it is wise to wait one year before considering to repeat surgery, as number of patients may benefit from delayed effect. This is the more so as important as repeated surgery entails a higher rate of complications 3).

In 2017 Zhao et al., retrospectively reviewed 1548 patients with hemifacial spasm who underwent retromastoid suboccipital craniectomy with MVD from January 2009 to June 2013. All patients were followed for >2 years.

Excellent and good results were 92.5% and 4.2%, respectively. Postoperative complications were recorded in 16.09% (n = 249). There was no MVD-related mortality. After MVD surgery, the most frequent complications were occipital sensory disturbance (7.3%), facial nerve palsy (9.7%), and hearing impairment (3.5%). Other complications were as follows: cerebrospinal fluid leakage (n = 24), poor healing wound (n = 14), lower cranial nerve palsy (n = 12), wound infection (n = 4), and hemorrhage (n = 2).
MVD operation is a safe treatment for hemifacial spasm. Facial nerve palsy is the most common MVD-related complication; preservation of the lesser occipital nerve during MVD surgery can decrease the rate of occipital sensory disturbance. Permanent or serious complications are comparatively rare in MVD surgery.

In 2017, the purpose of a study was to determine the long-term efficacy and safety of MVD for HS by assessing the effect of the procedure from the literature published over the last 25 years.

A systematic data review from 1992 to 2015 using specific eligibility criteria yielded 27 studies on MVD for HS, the data of which were pooled and subjected to a meta-analysis.

The pooled odds ratio (OR) revealed by the meta-analysis showed that anterior inferior cerebellar artery was the most common offending vessel in 37.8% (95% confidence interval [CI]: 27.8-47.7%) of the patients. Complete resolution of HS was seen in 88.5% (95% CI: 86.7-90.4%) of the patients after a long-term follow up. The complication rate was low following MVD, the most common being temporary facial paresis in 5.9% (95% CI: 4.3-7.5%) of patients.

MVD is a safe and effective treatment for HS with long-term benefits and a low complication rate.

In a study of 2016 Montava et al., described the efficacy and morbidity of microvascular decompression for hemifacial spasm, evaluate the long-term efficacy on the quality of life and investigate prognostic factors for failure of the procedure. A retrospective study of 446 cases of hemifacial spasm treated by 511 retrosigmoid microvascular decompression over 22 years was conducted. Epidemiological, clinical and imaging findings, treatment modalities and outcomes of patients with pre- and postoperative HSF-8 quality of life questionnaire were studied. Success rate was 82% after first surgery and 91.6% after revision surgery. A low rate of perioperative morbidity was found. Facial palsy was mostly transient (5.5% transient and 0.2% permanent) and cochleovestibular deficit was seen in 4.8% of patients. Revision surgery increased nervous lesions (10.6% to 20.7%). Mean quality of life scores were significantly improved from 18 to 2 over 32, evaluated 7.3 years after surgery. Predictive factors of surgical failure were single conflicts (p = 0.041), atypical vasculo-nervous conflicts involving other vessel than postero-inferior cerebellar artery (p = 0.036), such as vein (p = 0.045), and other compression sites than root exit zone (p = 0.027). Retrosigmoid microvascular decompression is a safe and effective treatment of hemifacial spasm. Revision surgery is not to be excluded in case of failure, but does place patients at risk for more complications. Quality of life is improved in the long-term, indicating objective and subjective satisfaction.

In a study of 2012 MVD successfully relieved HFS in approximately 9 of 10 patients with low rates of symptom recurrence. Complications of this surgery were uncommon and generally transient.

Hearing loss after microvascular decompression for
hemifacial spasm

see Hearing loss after microvascular decompression for hemifacial spasm.

References


