Microvascular decompression of cochleovestibular nerve
Yap L, Pothula VB, Lesser T

CRD summary
The review investigated the selection criteria, effectiveness and safety of microvascular decompression of the cochleovestibular nerve for patients with cochleovestibular neurovascular compressive syndrome. Due to major shortcomings (specifically lack of controls) in the included studies and deficiencies in the review process, the authors’ conclusions are not appropriate or reliable.

Authors’ objectives
To assess the surgical criteria, effectiveness and safety of microvascular decompression (MVD) of the cochleovestibular nerve for patients with cochleovestibular neurovascular compressive syndrome (CNVC).

Searching
MEDLINE was searched from 1966 to February 2008. Minimal search terms were reported. Reference lists from published reviews of microvascular decompression were searched for relevant studies.

Study selection
Eligible studies were clinical studies and case reports that included participants with microvascular decompression surgery of the eighth nerve for cochleovestibular symptoms of any degree. Studies that included patients with other diagnoses, but who also had some degree of cochleovestibular symptoms were excluded.

In the included studies, participants had either tinnitus, vertigo or hearing loss or a combination of these symptoms. Primary outcomes measured in the studies were mostly improvement in vertigo or tinnitus; hearing improvement was measured in most studies as a secondary outcome. One study measured patient improvement in overall disability. Improvement was measured by patient satisfaction and subjective assessment of complete relief or marked improvement of symptoms. Adverse effects and criteria for surgery were measured.

The authors state neither how studies were selected nor how disagreements were resolved.

Assessment of study quality
The authors did not state that they assessed validity.

Data extraction
Data were extracted on percentage of patients with a good surgical outcome and adverse effects.

The authors stated neither how data were extracted nor how disagreements were resolved.

Methods of synthesis
The included studies were synthesised in narrative format.

Results of the review
Nineteen (n=545) of 22 eligible studies were included; results from a consecutive series of three patients (n=3) were also included in the review. Five studies were case reports and some had retrospective analyses. Follow up ranged from three months to 13 years seven months.

Surgical outcomes: Complete relief or marked improvement in symptoms from microvascular decompression ranged from 75% to 100% for vertigo and from 27.8% to 100% for tinnitus. Hearing improvement after microvascular decompression was reported for more than 49 of the 545 participants.

Adverse effects: Postoperative deterioration in hearing was reported for 34 of 545 (6.2%) participants. Other
complications were uncommon.

Authors' conclusions
The authors concluded that microvascular decompression of the eighth nerve in selected patients with CNVC can alleviate symptoms safely.

CRD commentary
The research question for the review was not clearly expressed. Only one electronic database was searched and no attempts were made to identify unpublished studies, so publication bias could not be excluded. The authors did not state whether language restriction was undertaken, so language bias could not be excluded. A wide variety of study designs eligible for inclusion included non-controlled case series. Methods used to select studies for the review and extract data were not reported and it appeared that no validity assessment was undertaken, so reviewer error and bias could not be excluded and the validity of the data were unclear. Measurement of the primary outcome was subjective assessment of improvement by patients who underwent an intervention. Given that it did not appear that any of the included studies were controlled, measurement bias could not be excluded. The authors acknowledged the difficulty in identification of symptoms due to CNVC from other causes, so applicability of these results to patients with CNVC cannot be definitive.

Due to major shortcomings (specifically lack of controls) in the included studies and deficiencies in the review process, the authors’ conclusions are not appropriate or reliable.

Implications of the review for practice and research
Practice: The authors stated that no firm recommendations to change clinical practice could be made.

Research: The authors stated that there was a need for well-designed randomised controlled trials that used well-validated, sensitive and agreed outcome measures.

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Record Status
This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.