Arthroplasty versus fusion in single-level cervical degenerative disc disease (2012)

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Overview of the study

Objectives

- To assess the effects of arthroplasty versus fusion for radiculopathy or myelopathy, or both due to single level cervical degenerative disc disease

Methods

- Evidence current up to 25 May 2011
- Participants: Adults (>= 18 years of age) with symptomatic single level cervical degenerative disc disease
- Intervention: Single level anterior cervical discectomy with fusion vs. Anterior cervical discectomy with the placement of an artificial cervical disc
- Outcomes measured:
  - Primary outcomes: arm and neck pain, neck-related functional status, patient satisfaction, neurological outcomes, global health status
  - Secondary outcomes: radiological signs of fusion, revision surgery, mobility on flexion-extension x-rays, work disability

Results & Conclusion

- 9 studies (2400 participants) included

Treatment	Evidence	Quality of evidence
Arthroplasty	Small but significant difference in effectiveness for alleviation of arm pain at one to two years	Low
	- Small difference in effectiveness for neck-related functional status at one to two years - Small difference in neurological outcomes	Moderate
Arthroplasty, fusion	Large and statistically significant difference in segmental mobility at one to two years at the treatment level	High
	No statistically significant difference in secondary surgery at the adjacent levels at one to two years	Low

⇨ There is a tendency for clinical results to be in favour of arthroplasty, but effect size was small and clinically irrelevant for all primary outcomes

Surgery for cervical radiculopathy or myelopathy (2010)

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Overview of the study

Objectives

- To determine whether: 1) surgical treatment of cervical radiculopathy or myelopathy is associated with improved outcome, compared with conservative management; 2) timing of surgery (immediate or delayed pending persistence/progression of relevant symptoms and signs) has an impact on outcome.

Methods

- Evidence current up to 25 June 2008
- Participants: Patients with a clinical diagnosis of cervical radiculopathy or myelopathy
- Intervention: Any form of surgical decompression in the cervical spine, with/ without fusion, designed to alleviate the symptomatic cord or root compression
- Outcomes measured: Surgical morbidity, pain intensity, functional performance of the arms or legs, mood and quality of life

Results & Conclusion

- Two trials (149 participants) included.

Treatment	Evidence	Quality of evidence
Surgical decompression	- Better than physiotherapy or cervical collar immobilization in the short-term for pain, weakness or sensory loss - No significant difference at one year follow-up	Low
	No significant differences between surgery and conservative treatment in three years follow-up	Very low

⇨ There is no reliable evidence on the effects of surgery for cervical spondylotic radiculopathy or myelopathy.