

Evidence Discussion (CMM-604: Posterior cervical fusion)

Risks of posterior cervical fusion surgery include but are not limited to infection, persistent or incomplete relief of symptoms, dural tear, deep vein thrombosis, pulmonary embolus, stroke, bleeding, vertebral artery injury, nerve root injury, spinal cord injury, paralysis and death[1,2]. Complications related to the implants (e.g. misplacement, migration, subsidence, screw failure/backout) are also possible. Late complications include adjacent segment disease and pseudoarthrosis often necessitating revision surgery at the adjacent or index levels. This may start a cascade of multiple fusions, more complications and poor long term outcome. Some of these complications can be devastating and lead to poor outcome. Primary indications for surgery include patients with radiculopathy and/or myelopathy. Other indications include instability in the setting of infection, tumor, trauma and localized or global deformity. Given the potential possibility for significant complications, proper patient selection is critical to minimize the risk benefit ratio. As recommended by the North American Spine Society (NASS) Coverage Policy Recommendations, history, symptoms, physical exam findings and imaging findings should support posterior cervical fusion[3]. Subjective symptoms and examination findings need to be concordant with imaging as is not uncommon for asymptomatic patients to have abnormalities on MRI. [4-6].

Multiple studies have shown that the vast majority of patients with cervical radiculopathy will improve with a 4-6 week course of non-operative treatment. [7-9]. Initial non-operative management is also noted as a recommendation in the North American Spine Society (NASS) Coverage Policy Recommendations [3]. However, for patients with myelopathy or other urgent/emergent conditions (e.g. progressive neurologic deficit, instability due to other disorders) a trial of non-operative treatment would not be necessary.

Contraindications to posterior cervical fusion as noted in the North American Spine Society (NASS) Coverage Policy Recommendations include treatment of discogenic axial neck pain without neurological symptoms, asymptomatic spinal stenosis without MRI evidence of intrinsic spinal cord signal change and no instability during isolated foraminal stenosis surgery.

Jackson et al. noted higher rates of postoperative complications and worse functional outcomes in patients with psychological disorders undergoing spinal surgery [10]. It was concluded that proper identification and treatment of these conditions prior to surgery may significantly improve many outcome measures in this population.

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