Post traumatic facial nerve decompression: Open surgical vs endoscopic approach

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ABSTRACT

Introduction: Post-traumatic facial nerve palsy (FNP) can lead to significant morbidities leading to long-term functional and psychosocial impairment. The most common cause is temporal bone fracture. It remains the subject of debate regarding the best management of nerve decompression, particularly in severe cases. To study the incidence, prognosis, current management strategies, and surgical approaches for post-traumatic facial nerve palsy, with a focus on the surgical decompression versus emerging endoscopic-assisted techniques. **Materials and Methods:** A scoping review was conducted using PubMed, SageJournal, ScienceDirect and Google Scholar, analyzing studies on the timing, indications, and outcomes of facial nerve decompression in post-traumatic cases. Several English articles and journals were included in this review based on the year of publication from 2005 to 2025. Idiopathic, traumatic injury to the extratemporal facial nerve and non-trauma related facial nerve palsies were excluded. **Results:** Early nerve decompression significantly improves functional recovery in cases with >90% degeneration on electrophysiology or radiological evidence of nerve entrapment. Previously, traditional microscopic open decompression via the transmastoid or middle cranial fossa approach was usually being practiced but recent research highlights the endoscopic-assisted techniques. It is a minimally invasive alternative with enhanced visualization and reduced morbidity. However, challenges remain regarding standardized surgical indications, timing thresholds, and long-term comparative outcomes between techniques. **Conclusion:** Early identification and appropriate patient selection are crucial in optimizing the outcomes of post-traumatic FNP. While endoscopic-assisted decompression shows promise, further prospective studies are needed to define its long-term efficacy and establish standardized treatment guidelines.

Keywords: Facial nerve palsy, post-traumatic nerve injury, decompression surgery, endoscopic-assisted decompression, Temporal bone fracture