

Bell's Palsy Following Lumbar Disc Herniation Surgery: Presentation of A Rare Case Lumbar Disc Herniation and Bell's Palsy

Lomber Disk Hernisi Ameliyatı Sonrası Bell Paralizi: Nadir Bir Olgu Sunumu

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ABSTRACT

Bell's palsy (BP) is an acute, idiopathic, unilateral facial nerve paralysis. Although rare, facial nerve palsy has been reported following prone positioning during surgery. We present a case of BP detected 18 hours after lumbar disc surgery, emphasizing diagnostic and therapeutic considerations.

Keywords: Bell's palsy, spinal surgery, prone position

ÖZ

Bell paralizi (BP), yüz kaslarının tek taraflı felciyle seyreden, ani başlangıçlı ve çoğunlukla nedeni bilinmeyen bir durumdur. Prone pozisyonda cerrahi uygulanan hastalarda nadiren de olsa fasiyal sinir felci bildirilmektedir. Bu olgu sunumunda, lomber disk cerrahisi sonrası postoperatif 18. saatte BP gelişen bir olgu üzerinden tanı, tedavi ve olası nedenler tartışılmıştır.

Anahtar Kelimeler: Bell paralizi, spinal cerrahi, pron pozisyon

Introduction

Bell's palsy (BP) is an acute-onset unilateral lower motor neuron facial paralysis that is idiopathic in the majority of cases (1–4). Possible causes include infections (e.g., viral, such as herpes simplex; bacterial, such as Lyme disease), cerebrovascular events, tumors, trauma, and Guillain-Barré syndrome. The most common mechanism is inflammation and edema that compress the facial nerve within the fallopian canal (3).

Symptoms vary depending on the extent and location of the lesion. Diagnosis is usually clinical; imaging is reserved for atypical cases or when alternative etiologies are suspected (1–4). Steroids and antiviral agents are commonly

used treatments; early administration of corticosteroids has been shown to improve outcomes (5–10).

This report aims to highlight an uncommon case of BP developing after lumbar disc surgery performed in the prone position.

Case Report

Written informed consent was obtained. A 74-year-old male (80 kg) with a history of coronary artery disease and hypertension was scheduled to undergo surgery for lumbar disc herniation because of foot drop. His medications included acetylsalicylic acid, candesartan, and doxazosin. Preoperative examinations were unremarkable.



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Following standard monitoring and induction of anesthesia, the patient was intubated with a 7.5-mm spiral endotracheal tube. Maintenance included 2% sevoflurane in 50:50 O₂-air and a remifentanyl infusion at 0.05 mcg/kg/min. The patient was placed in the prone position with appropriate padding of the head, face, and chest to avoid compression.

Vital signs remained stable throughout the 90-minute procedure. Intraoperative fluid administration totaled 2500 mL, with 600 mL of blood loss and 350 mL of urine output. The patient was extubated uneventfully and transferred to the ward.

At postoperative hour 18, the patient reported right-sided facial numbness. Clinical examination revealed an inability to raise the right eyebrow, drooping of the mouth and forehead on the same side, ptosis, and flattening of the nasolabial fold (Figure 1).

Otolaryngologic evaluation and magnetic resonance imaging revealed no abnormalities. A diagnosis of peripheral facial nerve palsy was considered, likely secondary to prone positioning. Prednisolone (1 mg/kg/day, tapered over 2 weeks) and vitamin B12 (for 1 month) were initiated. To prevent corneal injury, artificial tears, ointment, and eye patches were recommended. The patient was discharged on postoperative day 8, and near-complete recovery was observed at the 5-month follow-up.



Figure 1. Facial asymmetry. Right eyebrow and eyelid drooping and nasolabial sulcus effacement.

Discussion

BP is typically diagnosed clinically, with imaging used only when other pathologies are suspected. Although 80–90% of patients recover fully, residual deficits such as impaired eye closure, an asymmetric smile, or synkinesis may occur (1–4,11,12). Although viral, autoimmune, and ischemic theories have been suggested for its etiology, most cases show spontaneous and complete recovery within the first three months (13). The extent of initial paralysis is a major prognostic factor (1–5).

Corticosteroids are considered first-line treatment, especially when initiated within 72 hours (14). According to the American Academy of Neurology, the recommended dosing includes 1 mg/kg/day for 6 days, followed by a taper to complete a total of 10 days (9,10). Antiviral therapy alone is less effective, but may be beneficial when used in combination with other therapies (6–10).

The prevalence of BP has been reported to increase with age, in diabetic patients, and in the third trimester of pregnancy (11). BP is characterized by involvement of the facial nerve; however in some patients it may be accompanied by additional neurological symptoms, such as facial tingling, neck pain or headache, balance disturbances, weakness of the ipsilateral extremities, and memory problems (15).

Although BP developing after anesthesia is rare, it remains clinically important. BP often represents an idiopathic condition (16). BP resulting from the prone position is thought to be of traumatic origin. Inflammation and edema resulting from compression of the facial nerve, which runs along the fallopian canal in the temporal bone, are the most common causes of BP (3). Lower cranial nerve palsy has been reported in a patient ventilated in the prone position, caused by compression of cranial nerves IX–XII in the mandibular retrocondylar–peripharyngeal space secondary to edema and inflammation (17).

Many cases of facial paralysis reported in the anesthesiology literature have been associated with head malpositioning or excessive jaw maneuvers used to maintain airway patency (18). Tension can occur in the stylomandibular, sphenomandibular, and capsular ligaments during jaw-forward maneuvers, leading to erosion and subluxation of the temporomandibular joint. Anesthesiologists often must apply significant pressure to the jaw, where the facial nerve courses superficially, when positioning face masks for preoxygenation and for mask oxygenation after extubation. Current ventilation masks are designed with anatomically appropriate shapes and sizes, and when used carefully, even with a tight fit, they are highly unlikely to cause nerve paralysis or skin necrosis (19).

However, prolonged application exceeding several hours can often cause circulatory compromise in areas with bony prominences (20,21).

Prone positioning presents challenges in maintaining physiological head alignment. Though rare, facial nerve palsy due to prone positioning has been documented (2,11,17). Improper head positioning, mandibular pressure, or excessive airway maneuvers may be contributing factors (2,17–19). Our case did not involve difficult intubation or mask ventilation; the patient was easily ventilated by a single provider and intubated in a single session. Furthermore, care was taken to ensure that the head remained in the appropriate position while prone. Therefore, the most likely cause of BP in our case was thought to be impaired axonal conduction of the facial nerve due to compression from edema or inflammation within the fallopian canal of the temporal bone.

Conclusion

BP remains a predominantly clinical diagnosis with variable etiology and prognosis. Clinicians should be aware of facial nerve palsy as a potential complication of prone positioning. Early diagnosis and prompt corticosteroid treatment can enhance recovery. Further multicenter studies are needed to establish preventive protocols and management strategies in surgical settings.

Ethics

Informed Consent: Written informed consent was obtained.

Footnotes

Authorship Contributions

Surgical and Medical Practices: A.K., A.S.T., H.K., A.A.Y., Concept: G.K., A.K., A.S.T., Design: G.K., A.K., Data Collection or Processing: A.K., A.S.T., H.K., A.A.Y., Literature Search: G.K., A.K., Writing: G.K., A.K.

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