## Common peroneal nerve palsy in maxillofacial surgery setting

### ABSTRACT

Common peroneal nerve palsy in maxillofacial surgery setting is an uncommon and rarely reported complication. A patient who developed common peroneal nerve palsy following reduction and fixation of pan facial fractures under general anesthesia is presented. The patient developed common peroneal nerve palsy on the second postoperative day. He recovered with conservative treatment after 3 months. The authors consider that the nerve palsy was a result of compression of common peroneal nerve related to patient positioning in the perioperative period. Patient- and surgery-related risk factors are also to be considered. Thus, for at risk patients, positioning is of utmost importance in both intra- and peri-operative period.

**Keywords:** Common peroneal palsy, foot drop, maxillofacial surgery, orthotics, supine position

### INTRODUCTION

Peripheral neuropathies or peripheral nerve injuries are a rare complication of surgery, with an incidence ranging between 0.02% and 21%.[1] Postoperative common peroneal nerve palsy is a documented complication following surgery in lithotomy position, particularly gynecologic surgery.[2] It is a rare complication in patients of maxillofacial surgery setting with very few case reports in maxillofacial surgery cases. The authors present a case of postoperative common peroneal nerve palsy in a patient managed for pan facial fractures.

### CASE REPORT

A 35-year-old male (body mass index [BMI] 19) with pan facial fracture was scheduled for open reduction internal fixation. Preoperative workup of the patient did not reveal any abnormality. The patient was induced and maintained under general anesthesia during the surgery. The patient was positioned supine with neutral leg position. The operative time was 6 h and 25 min. The patient complained of weakness and numbness of lower right leg on the second postoperative day. On inquiring, the patient revealed that he was sitting in crossed leg position for a prolonged period on the first postoperative day. Physical examination revealed right foot drop, steppage gait, grade 1/5 weakness of the right ankle dorsiflexion and extensor hallucis longus, grade 1/5 weakness of eversion and grade 5/5 weakness of inversion and plantar flexion. Complete nerve conduction studies confirmed common peroneal nerve palsy right leg. The patient was treated conservatively with orthotics—ankle foot orthotic (foot drop brace) [Figure 1] and physical therapy. After 3 months, his motor power recovered fully with no sensory deficit.

### DISCUSSION

The peroneal nerve branches from the sciatic nerve at the popliteal groove and passes over the lateral head of the gastrocnemius muscle lateral to the groove. Having a very superficial route in the 4 cm long area below the knee and...
around the fibular head and neck, the nerve is only protected by the skin and the superficial fascia. It passes through a fascial fibrous arch surrounded by the long peroneal muscle and the intermuscular septum.\[^{3,4}\] It is vulnerable to stretching and compression injury due to its anatomical position. Nerve injury may be caused due to laceration, contusion, compression, traction, or ischemia.\[^{5}\] According to Warner et al., the risk factors for the development of common peroneal neuropathy included BMI (kg/m\(^2\)) of 20 or less, diabetes, alcoholism, familial neuropathy, and a history of smoking within 30 days of the procedure.\[^{6}\] Prolonged squatting, leg crossing, and yoga may also cause postural peroneal nerve palsy.\[^{7}\]

In our patient, the potential risk factors were prolonged operative time (6 h 25 min) and slender body shape (BMI of 19). Our patient was placed supine with neutral leg position, but he was sitting in crossed leg position for a prolonged duration during the immediate first postoperative day, so the compression of CPN around the fibular head might happen. Although this complication is not fatal and has a good prognosis, it is related with the quality of life.\[^{8}\]

Posture-related neuropathies heal with the help of conservative management alone. 3–4 months of conservative treatment should be considered initially.\[^{9}\] In case of the presence of significant axonal injury, surgical neurolysis or release of the arch located between the two heads of the peroneal muscle are recommended.\[^{7,9,10}\]

In patients with risk factors such as prolonged operative time, slender body shape among other factors, even when the patient is placed in supine position, should have his knee carefully supported in a neutral position, also peroneal nerve function should be evaluated in slender patients with a history of gait disturbance or foot drop after prolonged squatting.

In conclusion, for patients at risk of developing common peroneal neuropathy, intraoperative as well as perioperative patient positioning is of utmost important.

Financial support and sponsorship
Nil.

Conflicts of interest
There are no conflicts of interest.

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