Bilateral Brachial Plexus Injury after Prone Positioning during COVID-19 Infection

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A 59-year-old man sustained a severe COVID-19 infection that required to be move him in the prone position that was maintained for 18 consecutive hours with the thorax sustained by one pillow and with a face support. The neck was leaning forward while arms rested adducted along the body. After 12 days, during sedation interruption, patient showed bilateral brachial pan-plexus paralysis. Clinical assessment excluded the presence of other peripheral nerve or spinal cord injuries. A computed tomography scan of the brain and cervical spine did not provide more information on the cause of this paralysis. Although patient showed a bilateral pan-plexus paralysis, after 10 weeks, the examination revealed partial recovery. On the left side, he presented a T1-hand.[1] The right side showed a posterior cord lesion with weakness of the deltoid revealing a partial recovery. MRI of the bilateral brachial plexus was performed after 2 weeks later and showed absence of nerves interruptions (►**Fig. 1**). The left brachial plexus revealed increased widespread short tau inversion recovery (STIR) signal of the C5 to C8 roots (except T1), of the upper and middle trunks, and of all the cords. On the right side, an increased STIR signal focused on C8 root, lower trunk, and the posterior and medial cords. After 7 months from injury, the patient presented for a clinical progressive complete recovery on the right side. On the left side, shoulder and elbow muscles revealed partial recovery.

Most frequently, traumatic injuries of the brachial plexus are due to traction or stretch injuries.[2-4] The mechanism underlying traction can be due to a forcible widening of the shoulder–neck angle by downward traction on the arm or a widening of the scapolohumeral angle.[5] In this patient, a wide shoulder–neck angle could be responsible for the traction of the brachial plexus because the chest was resting on a pillow while the shoulders fell down without support. In this case, with an overweight and brachytype person, traction of the brachial plexus may have been highlighted the wrong position for a wide shoulder–neck angle.

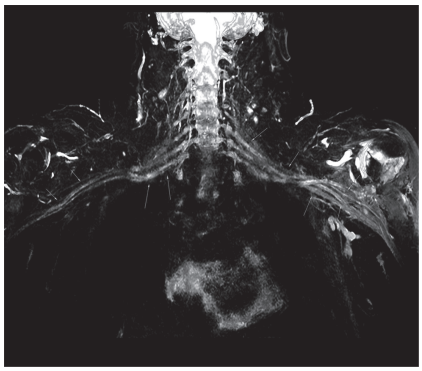

Fig. 1 Magnetic resonance imaging of the cervical roots and brachial plexus evaluated on coronal plane obtained by using short tau inversion recovery sequences. Increased signal and thickness on the left brachial plexus indicate edematous changes (arrows) on C5 to C8 roots, upper and middle trunks, and cords. Slight thickening (arrows) is also demonstrated on the right brachial plexus C8 root, lower trunk, and posterior and medial cords.

Conflict of Interest
None declared.

References

1 Bertelli JA, Ghizoni MF. C5-8 brachial plexus root injury: the "T-1 hand." J Neurosurg 2012;116(2):409–413
2 Narakas AO. Lesions found when operating traction injuries of the brachial plexus. Clin Neurol Neurosurg 1993;95(Suppl):S56–S64
3 Kim DH, Murovic JA, Tiel RL, Kline DG. Mechanisms of injury in operative brachial plexus lesions. Neurosurg Focus 2004;16(5):E2
4 Coene LN. Mechanisms of brachial plexus lesions. Clin Neurol Neurosurg 1993;95(Suppl):S24–S29
5 Di Lazzaro V, Giambattistelli F, Pravatà E, Assenza G. Brachial palsy after deep sleep. J Neurol Neurosurg Psychiatry 2014;85(12):1409–1410

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