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A case of acute brachial neuritis due to Pressure change around brachial plexus structures

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Introduction

Most variations of the subclavian artery are related to the origins of the branches of the thyrocervical trunk and internal thoracic artery. The thyrocervical trunk devides into four major branches, one of which is the transverse cervical artery. In this case, we present the case of a young man in which acute brachial neuritis occcured in the upper trunk of the brachial plexus accompanied by vascular compression due to transverse cervical artery.

Case Report

A 30-year-old male patient visited our hospital outpatient department with complaints of shoulder pain that occurred during weight lifting and subsequent persistent muscle weakness. The patient had received previous treatment with prolotherapy and acupuncture at another hospital, but did not show significant improvement. At the time of the visit, limitations in right shoulder adduction and flexion were observed and the patient reported visual analogue scale (VAS) pain score of 7. Trigger point injections (TPI) in the shoulder area were performed, followed by a spinal nerve block two weeks later. At the follow-up visit, two weeks after the nerve block, the patient reported a significant improvement in pain compared to before, but still complained of 30-40% pain when performing shoulder movements, particularly in the front area.

At the level of the brachial plexus cord, there was a crossing point where an artery passes horizontally and the Brachial plexus descends vertically. In this area, the plexus was located at a superficial level and was in close contact with the crossing artery. The crossing and tender points were found to be in the same location. Injection of triamcinolone near the proximal site of the intersection of the brachial plexus and artery was performed. At the next visit, shoulder pain has improved to a VAS score of 3. It has been revealed in the ultrasound findings at the Rt neck C8 level that the level of the brachial plexus is lower than before.

Discussion

Acute brachial neuritis is an uncommon disorder characterized by severe shoulder and upper arm pain followed by marked upper arm weakness. In this case, acute brachial neuritis occurred suddenly while the patient was lifting weights at the gym. Before treatment, ultrasound examination revealed an abnormal acute angulation of the nerve bundle, but after anti-inflammatory treatment, the ultrasound showed a change to a more obtuse angle of the nerve bundle. The changes observed in the ultrasound finding are considered to be highly correlated with the improvement of symptoms. The cause of neuritis is not clearly known, but in this case, changes in pressure between the brachial plexus and transverse cervical artery were observed on ultrasonography findings. It is possible that the patient's neuropathy may have been caused by pressure on the nerves, which could have been triggered by strength training exercises.

Figure 1. pre - injection

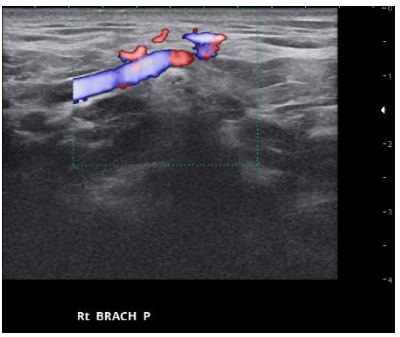

Figure 2. post - injection