

Botulinum toxin A injection for focal shoulder dystonia



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INTRODUCTION

Focal dystonia of shoulder is a rare and challenging condition in terms of confirming the specific cause. The pathophysiology that can induce dystonic movement remains unclear. One of the predisposing factors of focal shoulder dystonia is minor trauma. There are several medical treatments available, including Botulinum toxin A injection, which can be helpful for relieving muscle hypertrophy and dystonia. We report a rare case of focal shoulder dystonia that developed following minor trauma of his right upper extremity and subsequently improved after Botulinum toxin A injection.

CASE

A 54-year-old man visited the outpatient clinic of rehabilitation medicine department for abnormal right shoulder movement in January 2024. He suffered minor trauma 1 year ago when he fell backwards on his right hand, and started experiencing involuntary movement 9 months ago. He had a history of autoimmune hepatitis in 2019. During the outpatient visit, he showed right winged scapula, and showed involuntary and repetitive retraction of the right scapula. (Fig 1) Dystonia was relieved only in shoulder retraction, and was present in all other positions including abduction, flexion and rotation. Nerve conduction study showed normal sensory and motor nerve conduction in both median, ulnar, radial, musculocutaneous, axillary, spinal accessory nerves, long thoracic, suprascapular, and dorsal scapular nerve. Electromyographic study showed normal in all examined muscles. However, the major and minor rhomboid muscles showed dystonic involuntary muscle contraction activities during resting position. Botulinum toxin A was injected on right rhomboid muscles, where the dystonic movement was most prominent. Specifically, 70 units were injected into three points of the rhomboid major muscle, with an additional 30 units administered to the rhomboid minor muscle. Following the injection, the dystonic movements improved, and the symptom relief was sustained during a two-week outpatient follow-up. (Fig 2)



Fig. 2 After the Botulinum toxin A injection, right winged scapula and shoulder dystonia improved



Fig. 1 The patient exhibits right winged scapula and shoulder dystonia before the Botulinum toxin A injection

CONCLUSION

Post-traumatic shoulder dystonia is a rare condition that significantly impairs quality of life of the patient. Prompt and accurate diagnosis is essential. Nerve conduction study and electromyography should be conducted for differential diagnosis of nerve and muscle disease, along with a thorough review of medical history and physical examination. Botulinum toxin injection is a viable option for the treatment of dystonia. It is important to target the proper muscle and decide an efficient dose of botulinum toxin.