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Cases of neuralgic amyotrophy overlooked with combined cervical radiculopathy

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Introduction

Neuralgic amyotrophy, also known as Parsonage-Turner syndrome, is a rare disorder characterized by sudden onset of severe shoulder pain followed by motor weakness and muscle atrophy. It can be easily misdiagnosed or overlooked due to its overlapping symptoms with other conditions. Cervical radiculopathy, on the other hand, is a common condition resulting from nerve root compression in the neck that leads to pain, weakness, and numbness in the arm. Here, we report case of neuralgic amyotrophy overlooked with combined cervical radiculopathy.

Case report

A 64-year-old male presented with severe right shoulder pain that started 4 months ago. He had a history of minor injuries while doing judo several days before he developed symptoms. The pain subsided by 2 weeks but was followed by motor weakness and muscle atrophy in the right deltoid, biceps, and forearm flexor group (figure 1), with manual muscle testing score of Fair+ at most. Cervical spine MRI was performed, and it showed diffuse disc bulging in multiple levels(figure 2). Despite conservative management, motor weakness did not improve, and the patient was consulted for electrodiagnostic studies to decide on surgical intervention.

Electrodiagnostic findings showed mononeuropathy multiplex with significant axonal loss in the axillary and musculocutaneous nerves. Needling electromyography study of muscles innervated by each nerve showed membrane instability, including biceps brachii muscle, deltoid muscle, etc. Cervical paraspinal muscles, which are mostly not involved in simple neuralgic amyotrophy, showed membrane instability which suggested combined cervical radiculopathy.

We gave him high dose oral steroids for two weeks. He reported improvement in muscle strength at follow-up after one month, and manual muscle testing score improved to good grade.

Discussion

The diagnosis of neuralgic amyotrophy is often challenging due to its rarity and variability of presentation. In this case, the initial impression was cervical radiculopathy based on the MRI findings, which delayed the proper diagnosis and treatment. There are number of precipitating factors like trauma, surgery, infections. Our patient had minor trauma history. Many treatments have been tried for NA like steroid, intravenous immunoglobulin, but none have altered the eventual outcome. However, treatment for concomitant musculoskeletal problems may be helpful. The prognosis of NA depends on the extent of nerve damage and can range from complete recovery to permanent disability. 36% recover functionally within 1st year, and 89% recover by the end of the 3rd year. EMG studies can help diagnosis, localizing lesion and determine the extent of axonal loss. Early and accurate diagnosis can avoid unnecessary treatment. Thus, clinicians should consider NA as a possible differential diagnosis in patients presenting with shoulder, arm pain and weakness, especially if there is a history of trauma, vaccination or recent surgery.

Figure 1. picture showing right deltoid muscle and forearm flexor group atrophy

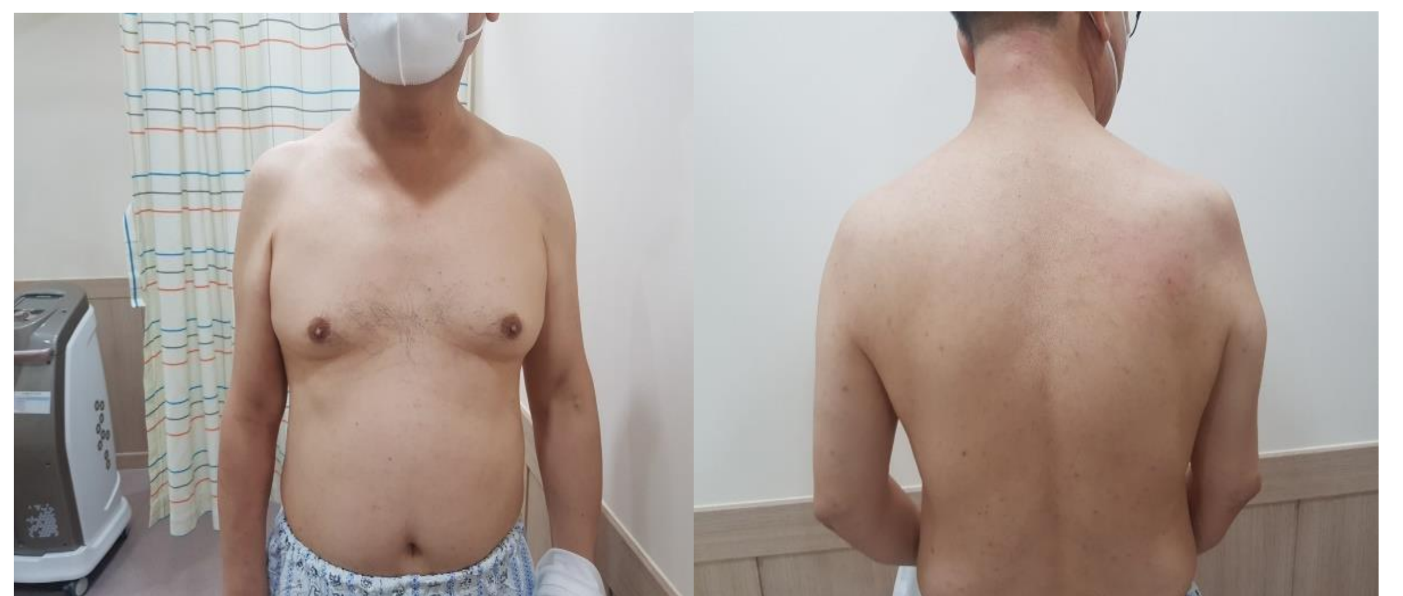

Figure 2. MRI showing diffuse disc bulging in cervical spine