Case Report / *Olgu Sunumu*

Ege Journal of Medicine / *Ege Tıp Dergisi* 2025; 64 (1): 169-172

A rare cause of sudden and severe shoulder pain: Parsonage-Turner Syndrome a case report

Ani başlangıçlı ve şiddetli omuz ağrısının nadir bir nedeni: Parsonage-Turner Sendromu olgu sunumu

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ABSTRACT

Parsonage-Turner syndrome is a peripheral neuropathy characterized by acute onset shoulder pain, sensory disturbances and weaknesses. The present report discusses a 46-year-old male patient presented to our clinic with acute pain in the right shoulder and notable difficulty in moving the right arm. Given the progression of his symptoms and the intensity of his pain, a clinical suspicion of Parsonage-Turner syndrome was raised. The diagnosis was subsequently confirmed through electromyography. The patient was prescribed pregabalin and enrolled in a physiotherapy program which resulted in a gradual improvement in his symptoms. The differential diagnosis of shoulder pain can be challenging because many conditions exhibit similar symptoms. Key considerations include rotator cuff pathology, cervical radiculopathy, calcific tendinitis, and amyotrophic lateral sclerosis. To accurately distinguish among these conditions, it is imperative to obtain a comprehensive medical history and conduct a thorough physical examination. While there is no specific treatment recommended, managing symptoms effectively and providing pain relief are crucial. Appropriate rehabilitation protocols can help prevent complications. A significant challenge with this syndrome is that many doctors remain largely unaware. Therefore, this case report aims to increase awareness about this condition.

Keywords: Parsonage turner syndrome, brachial neuritis, shoulder pain.

ÖZ

Parsonage-Turner sendromu, akut başlangıçlı omuz kuşağı ağrısı, duyusal bozukluklar ve kas güçsüzlüğü ile karakterize bir periferik nöropatidir. Bu olgu sunumunda, 46 yaşında akut başlangıçlı ve şiddetli omuz ağrısı ile başvuran ve akabinde kas güçsüzlüğü gelişen bir hasta tartışılmaktadır. Motor kaybın progresyonu ve ağrısının yoğunluğu göz önüne alındığında, Parsonage-Turner sendromu ön tanısı ile yapılan elektromiyografi ile doğrulandı. Pregabalin ile medikal tedavisi düzenlenen hasta rehabilitasyon programına alındı. Omuz ağrısının ayırıcı tanısı, rotator manşet patolojisi, servikal radikülopati, kalsifik tendinit, amiyotrofik lateral skleroz, Parsonage-Turner sendromu gibi benzer semptomlara sebep olan birçok hastalık sebebi ile zor olabilir. Ayırıcı tanı yapabilmek için doğru anamnez ve kapsamlı fizik muayene esastır. Önerilen belirli bir tedavi olmasa da semptomları etkili bir şekilde yönetmek ve ağrıyı kontrol altına alabilmek çok önemlidir. Uygun rehabilitasyon protokolleri, komplikasyonları önlemeye yardımcı olabilir. Bu sendromla ilgili olarak hekimlerdeki farkındalık düzeyi yeterli değildir. Bu olgu sunumu ile bu farkındalığın artırılması amaçlanmaktadır.

Anahtar Sözcükler: *Parsonage-Turner sendromu, brakial nörit, omuz ağrısı.*

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Application date: 06.11.2024 Accepted: 18.11.2024

INTRODUCTION

Parsonage-Turner syndrome (PTS), also known as neuralgic amyotrophy or brachial neuritis, is a rare neurological condition that was described in 1948 (1). PTS is more frequent in men than women and is starts with unilateral and sudden onset shoulder pain. Patchy motor weakness and sensory loss arise approximately within days and weeks in the upper extremity (2). Although the annual incidence of PTS was reported as 2/100.000 in old publications, it is stated that the annual incidence has increased to 1/1000, thanks to the increased awareness among physicians (3). This syndrome usually affects adults between ages 20-60. Despite identifying some triggering conditions such as the post-surgical, post-infection, and post-vaccination period, the pathophysiology of the syndrome remains unknown. The diagnosis is made from the history and physical examination findings and confirmed by clinical neurophysiology testing. Written consent was obtained from the patient stating that her medical data could be published.

Case

A 46-year-old male patient, he initially presented to his family physician with sudden onset of right shoulder pain. Over the following 2 weeks, the dull ache spread into the right shoulder, scapula and hand. Over the next few days, the patient's pain increased, and weakness began in the shoulder. He also developed difficulty moving the thumb and index finger of his right hand. As illustrated in Figure-1, physical examination showed atrophy of the right deltoid muscle. There was no restriction in the passive range of motion of the right shoulder, however pain was exacerbated with shoulder movement. Manual muscle testing of supraspinatus and deltoid on the right side were graded 1/5. The patient's elbow joint range of motion and muscle strength were normal. Physical examination showed weakness of the flexor pollicis longus and flexor digitorum profundus to the index finger. The OK sign test was positive in the right hand (Figure-1). Hypoesthesia was detected on the lateral side of the right arm. There was no history of trauma and infection. Seven months before the onset of symptoms, the patient was administered the third dose of the BNT162b2 COVID-19 vaccine. The patient's medical history included diagnoses of diabetes, coronary artery disease, anxiety disorder, obsessive compulsive disorder. Although routine biochemical examinations were within normal limits, the HbA1c value was %12.5 and fasting blood sugar level of 297 mg/dL. Chest X-ray excluded compression mass in the upper lungs which may compress the brachial plexus creating similar symptomatology. No pathology was found in the brain-cervical-brachial plexus and shoulder magnetic resonance imaging. In needle electromyography (EMG), there were no motor unit action potentials in the deltoid muscle and flexor pollicis muscle, in addition, fibrillation and positive sharp waves, which are signs of acute denervation, were observed. The patient was diagnosed with PTS by physical exam and EMG results. Despite taking various medications, such as paracetamol and ibuprofen, there was no relief or improvement in the symptoms during this time. The pain is usually expected to resolve within a week or two, but due to the patient's ongoing severe neuropathic pain, tramadol 50 mg and pregabalin 75 mg twice daily were added to his treatment. A physical therapy program was designed for the patient, including electrical stimulation of the deltoid muscle, analgesic electrotherapy, superficial heat therapy and joint range of motion exercises. After two months his pain was relieved, but muscle weakness continued.

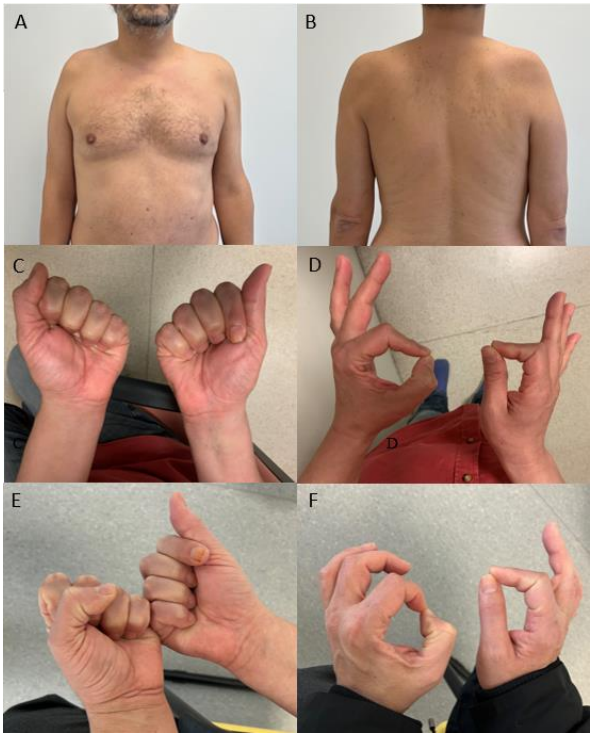

Figure-1. Images A and B were taken during diagnosis; moderate atrophy of the right shoulder girdle with loss of right deltoid bulk compared to the left arm. Images C and D were taken during diagnosis; images E and F were taken during the first-year follow-up. The OK sign test was positive in the right hand, with reduced flexion in the first interphalangeal joint and the second distal interphalangeal joint, as compared with the corresponding joints of the nonaffected hand.

An EMG test was performed again during the 1st year follow-up to determine the patient's prognosis. Nerve conduction studies indicated a significant decrease in the amplitude of the left median and ulnar compound muscle action potential response. At the time of diagnosis, the muscles examined showed total denervation, which persisted according to the results of the control needle EMG.

DISCUSSION

PTS can be diagnosed due to the intense neuropathic pain at the beginning, the rapid development of mono or multifocal paresis and atrophy, mainly in the upper extremity, and slow healing in months to years (4). The symptoms of PTS, a peripheral neuropathy, include acute, intense upper arm pain and muscle weakness (5).

The reported yearly incidence of this syndrome is 1 in 1.000, but a recent study found that because it is difficult to diagnose at an early stage, it is commonly disregarded and misdiagnosed (6). The disease may be hereditary or idiopathic. In the idiopathic type, 50% of patients have been exposed to a prior event (infection, partum, heavy exercise, previous operation or systemic disease) that activates lymphocytes sensitized to the brachial plexus in people who have a genetic predisposition (7). It is unlikely that the patient's PTS was caused by vaccination, as he had received the vaccine a few months earlier. Our patient had a type 2 diabetes mellitus for 10 years, with poor metabolic control. We report the case of a patient affected by this syndrome, which had no triggering factor except diabetes mellitus. Laboratory tests are usually normal in PTS patients, as in our case. Recovery from muscle weakness may take several months to several years, estimated rate of recovery is 36%, 75%, and 89% within 1, 2, and 3 years, respectively. Contrary to the literature, there was no improvement in the patient's condition in the first year of follow-up, and weakness in both the shoulder girdle and fingers continued similarly. Most cases are unilateral, but there are also cases where bilateral involvement has been reported (8).

Diagnosis of PTS based on clinical history, physical examination, EMG results, and imaging findings. EMG, which usually demonstrates patchy nerve loss throughout the whole plexus or acute denervation in just one nerve. EMG should be performed 2-3 weeks after the first appearance of symptoms, since there is no degenerative action potential during the acute period (9).

The treatment for PTS is generally conservative and there is no definitively recommended treatment. Neuropathic pain is a typical symptom of PTS and can be difficult to manage. Initial treatment typically includes opioids, anti-inflammatory medicines, and antiepileptic drugs. It has been reported in the case series that corticosteroids and İntravenous immunoglobulin (IVIG) may be effective in the acute period (10).

CONCLUSION

PTS is a particularly difficult syndrome to diagnose. The diagnosis is determined by ruling out other disorders with similar symptoms, such as rotator cuff pathology, cervical radiculopathy, calcific tendinitis, amyotrophic lateral sclerosis, cervical spine osteoarthritis, and adhesive capsulitis. The primary issue with this syndrome is that many doctors are still largely unaware of PTS. For this reason, this case report aims to raise awareness about PTS.

Ethics and competing interest

Consent for publication: Informed consent was obtained from the patient included in the study.

Availability of data and material: The datasets used and/or analyzed during the current study are available from the corresponding author.

Conflict of interest: The author has no competing interest.

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