



Hand Deformity in Parkinson's Disease: A Case of Striatal Hand Deformity Mimicking Rheumatoid Arthritis

Parkinson Hastalığında El Deformitesi: Romatoid Artriti Taklit Eden Striatal El Deformite Olgusu

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ABSTRACT

Abnormal postures and deformities can be seen in the hands and feet in parkinson's disease. The most typical deformities seen in the upper extremities are flexion of the metacarpophalangeal joints, extension of the proximal interphalangeal joints, flexion of the distal interphalangeal joints, and ulnar deviation. These deformities may cause rheumatoid arthritis to be misdiagnosed and unnecessary medical treatment given to patients whose Parkinson's findings, such as tremor, bradykinesia, and rigidity, are not fully established. In our case, there was a male patient with hand deformities in his right upper extremity due to Parkinson's disease, and his differential diagnosis was made with rheumatoid arthritis. It was aimed to prevent the progression of deformities by starting physical therapy after the diagnosis was made. This case shows that there may be a diagnosis confusion due to the similar hand deformities in rheumatoid arthritis and Parkinson's disease. To draw attention to this situation, a case of Parkinson's disease with striatal hand deformity is presented.

Key words: striatal hand deformity; Parkinson's hand deformity; hand deformity

ÖZET

Parkinson hastalığında el ve ayaklarda anormal postür ve deformiteler görülebilir. Üst ekstremiteelerde görülen en tipik deformite metakarpofalangiyel eklemlerde fleksiyon, proksimal interfalangiyel eklemlerde ekstansiyon, distal interfalangiyel eklemlerde fleksiyon ve ulnar deviasyondur. Bu deformiteler; tremor, bradikinezi, rijidite gibi parkinson bulgularının tam yerleşmediği hastalarda yanlışlıkla romatoid artrit tanısı konmasına ve gereksiz medikal tedavi verilmesine sebep olabilir. Olgumuzda Parkinson hastalığına bağlı sağ üst ekstremitesinde el deformiteleri olan hasta mevcut olup romatoid artrit ile ayırıcı tanısı yapılmıştır. Hastaya tanı konulduktan sonra fizik tedavi başlanarak deformitelerin progresyonunun engellenmesi amaçlanmıştır. Bu olgu; romatoid artrit ve parkinson hastalığında benzer el deformitelerinin olması sebebiyle bir tanı karışıklığı yaşanabileceğini göstermektedir. Bu duruma dikkat çekmek amacıyla striatal el deformitesine sahip parkinsonlu bir vaka sunulmuştur.

Anahtar kelimeler: striatal el deformitesi, Parkinson el deformitesi, el deformitesi

Introduction

Parkinson's Disease (PD) is a progressive disease characterised by dopamine depletion resulting in motor and non-motor symptoms. Motor signs include bradykinesia, rigidity, tremor and postural instability. Dopamine-enhancing drugs such as levodopa are used in the treatment¹⁻³.

Abnormal postures and deformities of the hands and feet can occur in Parkinson's disease. The most characteristic deformities in the upper extremities include flexion of the metacarpophalangeal (MCP) joints, extension of the proximal interphalangeal (PIP) joints,

flexion of the distal interphalangeal (DIP) joints and ulnar deviation^{4,5}. These deformities can resemble those seen in rheumatoid arthritis (RA), potentially leading to misdiagnosis and unnecessary treatments, especially in cases where classic Parkinsonian features such as tremor, bradykinesia and rigidity are not yet fully established.

This case highlights the diagnostic confusion that may arise due to similar hand deformities in RA and PD. To emphasize this clinical overlap, we present a case of PD with striatal hand deformity.

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Figure 1. Swelling and deformities in the hand when the patient comes.



Figure 2. Right hand radiograph of the patient.

Case

A 69-year-old male was referred to our Physical Medicine and Rehabilitation (PM&R) rheumatology outpatient clinic with a preliminary diagnosis of RA, due to complaints of swelling and pain in the right hand. In the patient's medical history, it was noted that he had undergone surgery for stomach cancer one year prior and coronary bypass surgery six months prior, but had not sought medical attention afterward.

The patient denied prior joint swelling or morning stiffness. On examination, swelling and restricted movement in the right wrist, along with swelling, pain and deformity in the MCP, PIP and DIP joints of the right hand were observed (Fig. 1). Bunnell-Littler and MCP squeeze tests were performed on examination. Rigidity and cogwheel phenomenon were present in both the right upper and lower limbs.

A resting tremor was noted on the tongue and lips, along with marked bradykinesia. The patient exhibited a flexed posture and a slowed gait. He was able to maintain balance while standing, but had impaired balance when attempting to sit upright in bed for prolonged periods.

Laboratory tests revealed normal acute-phase reactants except for anemia. Rheumatoid factor (RF), anti-CCP, ANA, ENA, thyroid antibodies, infectious and hepatitis markers were all within normal limits (Table 1). Magnetic resonance imaging of the hand and wrist showed mild joint effusion and tendon sheath fluid consistent with mild tendinitis. There was no evidence of hyperalgesia, allodynia or vasomotor changes suggestive of shoulder-hand syndrome. Trophic changes observed in the right hand and both toenails were referred to dermatology, but no additional pathology was found. X-rays showed deformities without erosions (Fig. 2). Doppler ultrasound ruled out deep vein thrombosis or thrombophlebitis. Except for the hand swelling and mild pain, the patient's general condition was stable.

The patient was referred to the neurology department, where a diagnosis of Parkinson's disease was made. Treatment with pramipexole and selegiline (dopaminergic agents) was initiated. The hand swelling and deformities were interpreted as striatal hand deformity due to Parkinson's disease. A rehabilitation program was started. During inpatient follow-up, the swelling and deformities regressed with rehabilitation, but reappeared after the exercises were discontinued. The patient was discharged with a home exercise program, and follow-up with neurology and PM&R clinics was recommended.

Table 1. Lab values

WBC	5.46	Normal	CCP	<10	Negative
HMG	11.5	Normal	ALT	19	Normal
PLT	284000	Normal	AST	26	Normal
CRP	<2	Normal	KREATİNİN	0.7	Normal
ESR	15	Normal	ANTI-HBS	493.3	Positive
TİT	Negative	Normal	ANTI-HBC IGM	0.071	Negative
RF	<20	Normal	ANTI-HBC IGG	1.73	Negative
ANA	Negative	Negative	ANTI-HAV IGG	0.009	Positive
ENA	Negative	Negative	ANTI-HCV	0.031	Negative

Discussion and Conclusion

Hand and foot deformities in Parkinson's disease were first described in 1864 and later elaborated upon by various researchers⁶. When flexion and ulnar deviation of the MCP joints are observed, differential diagnoses should include RA, systemic lupus erythematosus (SLE), Osteoarthritis, Jaccoud's arthritis, Dupuytren's contracture, Trigger finger, De Quervain's tenosynovitis, dystonia, Parkinson's disease, and advanced age^{4,5,7}.

The term striatal hand deformity is used based on the hypothesis that lesions in the neostriatum (putamen and caudate nucleus) contribute to these deformities⁵. However, the exact pathogenesis remains unclear. Potential contributing factors include dystonia, little finger spasm and rigidity. These deformities may progress to fixed contractures over time, underscoring the importance of early recognition and intervention to preserve quality of life.

In rheumatoid arthritis, deformities typically present symmetrically, involving both hands and are accompanied by radiological evidence of joint involvement. In contrast, striatal hand deformities are usually unilateral at onset, appearing on the side where Parkinson's disease (PD) first manifests and where motor symptoms are more pronounced, despite normal radiographic findings⁸.

Striatal hand deformities in Parkinson's disease can mimic RA and lead to misdiagnosis and inappropriate treatment. Accurate diagnosis requires careful clinical evaluation. The absence of arthritis, lack of erosions on radiographs and normal laboratory values can help rule out inflammatory arthritis. Recognizing these Parkinson-related deformities is crucial to avoid unnecessary therapies and maintain functional independence.

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