Case of Polymyalgia Rheumatica Misdiagnosed as Infectious Spondylitis

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A 60-year-old woman visited the authors’ clinic with low back pain and arthralgia. Her symptoms had occurred 6 months previously, and she was treated with an epidural injection and a balloon dilatation procedure based on the assumption of spinal stenosis, but both treatments were ineffective. Her low back pain was aggravated, accompanied by fever and chills over a period of 4 months. As a result, she visited another referral hospital and was diagnosed with infective spondylitis associated with the invasive procedure. Her symptoms improved with antibiotics, but they recurred. When she visited our clinic, she still had continuous low back pain and febrile senses. Magnetic resonance imaging of her lumbar spine revealed interspinous bursitis, and 18 F-fluorodeoxyglucose positron emission tomography showed multifocal synovial inflammation. She was diagnosed with polymyalgia rheumatica and treatment was started on prednisolone and celecoxib. Her symptoms improved dramatically and the inflammatory markers normalized. (J Rheum Dis 2018;25:140-143)

Key Words. Polymyalgia rheumatica, Back pain, Arthralgia, Positron emission tomography computed tomography

INTRODUCTION

Polymyalgia rheumatica (PMR) is a chronic inflammatory disease that affects people older than 50 years of age. PMR is more commonly reported in Caucasians and females, and is relatively uncommon among Asian, African-American, and Latino populations [1]. In Korea, PMR is a somewhat rare disease, and the annual incidence rate of PMR during 5 years was estimated to be 2.06 per 100,000 individuals over 50 years of age [2]. The clinical symptoms of PMR are aching and morning stiffness of the shoulders and/or pelvic girdle. The muscles supporting the neck can also be involved, but myalgia of the torso is less common. These symptoms are usually symmetric [3]. The cause of PMR is still unknown, and even the anatomical site of the inflammation is unclear. Both environmental and genetic factors appear to play a role [3]. Diagnosis of PMR is based on clinical features and established criteria but there is no pathognomic test [4]. Because of its inflammatory features and localized musculoskeletal pain, patients with PMR tend to be diagnosed as having an infection. In this report, we describe a case of PMR presented with low back pain with fever, misdiagnosed as infective spondylitis.

CASE REPORT

A 60-year-old woman visited our clinic for low back pain accompanied by mild pain in both knees and the neck. Her symptoms first occurred 6 months before visiting our hospital. At first she had visited a private clinic and had undergone magnetic resonance imaging (MRI) of the lumbar spine as part of her medical evaluation. She had been treated with epidural injection and balloon dilata-
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Figure 1. L-spine magnetic resonance imaging. (A) Diffuse enhancement along capsule and adjacent soft tissue at bilateral facet joint of L1-L5, (B) interspinous bursitis at T12-L5 on T1 weighted image.

www.jrd.or.kr 141
mm/hour. After 4 months, her symptoms were improved and there were no additional flare ups, so daily PDS was reduced to 2.5 mg (Figure 3).

**DISCUSSION**

Because of the absence of a precise pathognomonic test for PMR, many clinicians can misdiagnose it as other inflammatory conditions. In our case, despite several clinical clues suggesting PMR, the history of epidural injection and fever made it more difficult to diagnose her as suffering from PMR. Her partial response to NSAIDs and antibiotics led clinicians to misdiagnose her condition as an infection. However, our detailed medical history review and a careful interpretation of imaging studies make it possible to reach a correct diagnosis.

The diagnosis of PMR is made primarily on clinical grounds. The classification criteria have been proposed by the European League Against Rheumatism and the American College of Rheumatology (EULAR/ACR) as a research tool to identify patients with PMR [4]. However, there remains a need for additional tests to provide diagnostic information, particularly where the diagnosis is not clear. Notably, there is considerable overlap between PMR and seronegative RA in older adults who present with symmetric synovitis.

Our case displayed marked symptoms of PMR according to the EULAR/ACR criteria, but it takes 6 months to be diagnosed as PMR: ≥50 years, both hip and shoulder pain in addition to low back pain and an abnormal CRP or ESR, morning stiffness ≥45 minutes, pain or limited range of motion at the hip, absence of RF or ACPA, and symptom improvement after low dose glucocorticoid
treatment. This shows the difficulties in the early suspicion and diagnosis of PMR.

Although imaging techniques are not the gold standard for the diagnosis of PMR, some modalities such as ultrasonography (US), MRI, and PET/CT can be used to detect underlying inflammation in patients with PMR [5]. Of these approaches, ultrasound is the first choice for the diagnosis of PMR due to its wide availability and recent improvements in the technology. In PMR patients, US can demonstrate synovitis, particularly in proximal joints and subacromial-subdeltoid bursitis. However, since US is considered to be an operator-dependent technology with poor repeatability, a more objective imaging technique has been required.

PET scanning can identify bursitis as well as underlying vascular involvement [6]. A recent study reported that interspinal bursitis is common in patients with PMR, but is not associated with spinal pain. In addition, the most frequent site of spinal pain in patients with PMR was the cervical portion rather than the lumbar spine [7]. Lesions in the spinal processes are more frequently detected with FDG-PET/CT than with MRI. In one previous study, 71% of patients with PMR showed increased FDG uptake in the vertebral spinous processes, while MRI detected only 20% of the corresponding lesions [8]. Salvarani et al. [9] suggested that inflammation of the lumbar bursae may be responsible for the low back pain reported by patients with PMR. This finding was also revealed in this case, in which the patient suffered from low back pain and there was multiple inflammatory bursitis at several C, L-spine level and arthritis on facet joints of L-spine revealed by PET/CT scans. Hence, the FDG-PET/CT scan is thought to be useful in diagnosing PMR by revealing significant uptake in articular and extra-articular sites such as arterial involvement [5,10,11].

In this case, we learned how low back pain can be treated with an injection, and how the subsequent elevation of the inflammatory markers makes diagnosis difficult. The lack of a pathognomonic test to identify PMR can also create confusion. However, it is reasonable to suspect PMR in elderly patients with low back pain and shoulder pain. In addition to careful history taking, some imaging studies such as FDG-PET/CT scan might be helpful in diagnosing PMR in its early stage.

**SUMMARY**

When patients suffer from low back pain accompanied with the symmetric involvement of other large joints, PMR should be included in the differential diagnosis. In addition to careful history taking, FDG-PET/CT scan can be helpful in diagnosing PMR in the early stage.

**CONFLICT OF INTEREST**

No potential conflict of interest relevant to this article was reported.

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