American Journal of Case Reports

e-ISSN 1941-5923
© Am J Case Rep, 2021; 22: e933926
DOI: 10.12659/AJCR.933926

Received: 2021.07.09
Accepted: 2021.10.12
Available online: 2021.10.21
Published: 2021.11.23

Polymyalgia Rheumatica in a Patient with Pseudogout and Dementia

Authors' Contribution:
Study Design A
Data Collection B
Statistical Analysis C
Data Interpretation D
Manuscript Preparation E
Literature Search F
Funds Collection G

ABCDEFG 1 Nozomi Aoki
ABCDEFG 1 Taiju Miyagami
ACEF 2 Kiyoshi Shikino
DEF 1 Kwang-Seok Yang
DEFG 1 Toshio Naito

1 Department of General Medicine, Juntendo University Faculty of Medicine, Tokyo, Japan
2 Department of General Medicine, Chiba University, Chiba, Japan

Corresponding Author: Taiju Miyagami, e-mail: tmiyaga@juntendo.ac.jp
Financial support: None declared
Conflict of interest: None declared

Patient: Female, 88-year-old
Final Diagnosis: Polymyalgia rheumatica
Symptoms: Fever and generalized pain
Medication: —
Clinical Procedure: —
Specialty: Rheumatology

Objective: Challenging differential diagnosis

Background: The differential diagnosis of generalized pain includes reactivity associated with bacterial and viral infections, autoimmune rheumatic disease, and orthopedic diseases. Obtaining a detailed medical history and establishing an accurate diagnosis are difficult in elderly patients with dementia. In addition, the differential diagnosis between polymyalgia rheumatica and pseudogout is often difficult. Thus, in our work, we examined the importance of interviewing the family of an elderly patient with dementia.

Case Report: We report the case of an 88-year-old woman with dementia and a history of recurrent pseudogout who presented with a 12-day history of fever and generalized pain. Physical examination findings revealed warmth and swelling in the shoulder joints and right knee. Blood tests indicated increased inflammatory marker levels. The primary working impression was oligo-articular pseudogout. Based on family interview, the patient was seen to manifest atypical symptoms, including movement difficulty. Joint ultrasound findings showed inflammation of the left long head of the biceps attachment. Further, right knee arthrocentesis detected no calcium pyrophosphate crystals. After obtaining a detailed medical history from the patient's family and conducting other diagnostic tests, the patient was finally diagnosed with polymyalgia rheumatica, rather than oligo-articular pseudogout, with rapid improvement after undergoing low-dose prednisolone treatment.

Conclusions: Family interviews can be helpful for obtaining correct diagnosis in elderly patients with dementia.

Keywords: Delayed Diagnosis • Dementia • Polymyalgia Rheumatica

Full-text PDF: https://www.amjcaserep.com/abstract/index/idArt/933926

Indexed in: [PMC] [PubMed] [Emerging Sources Citation Index (ESCI)] [Web of Science by Clarivate]

Background

The differential diagnosis for generalized pain includes reactivity associated with bacterial and viral infections, autoimmune rheumatic disease, and orthopedic diseases. Eliciting an accurate medical history leads to a diagnosis in 80% of cases [1]. However, obtaining a detailed medical history and achieving an accurate diagnosis are difficult in elderly patients with dementia. In addition, elderly patients have multiple comorbidities that complicate diagnosis [2]. Therefore, interviews with family members can lead to diagnosis. Herein, we report the case of an elderly patient with dementia who presented with generalized pain.

Case Report

An 88-year-old woman with dementia (Stage 7a according to the Functional Assessment Staging [3]) reported difficulty in communicating with a home visit service. Four months ago, she had consulted our hospital for fever and right knee joint pain. Right knee arthrocentesis revealed calcium pyrophosphate crystals phagocytosed. At that time, the patient was diagnosed with mono-arthritis pseudogout, also called calcium pyrophosphate deposition disease, or CPPD, of the right knee joint. Since then, she had experienced multiple episodes of right knee mono-arthritis, which were relieved by non-steroidal anti-inflammatory drug (NSAID) therapy.

Twelve days before her visit to our hospital, she developed fever and had difficulty in moving because of generalized pain. On the same day, a home doctor examined the patient and prescribed NSAIDs. The patient was suspected of having pseudogout in multiple joints. However, her symptoms of fever and general pain were not improved. Therefore, she was admitted to our hospital. As the patient had dementia, interviewing her was difficult. However, an accompanying family member reported that the patient was recently unable to turn over on bed because of generalized pain and thus developed bedsores. Additionally, the family interview revealed the patient had morning stiffness and persistent pain symptoms for approximately 2 weeks, which were suspected to be caused by a new pressure ulcer. On physical examination, the patient's level of consciousness was E4V4M6 on the Glasgow Coma Scale. She had a body temperature of 38.3°C, pulse rate of 83/min, blood pressure of 146/70 mmHg, respiratory rate of 16/min, and oxygen saturation of 98% in room air. There was pain and warmth in both shoulder joints, and bilateral shoulder abduction was restricted to <90°. The right knee was swollen, painful, and warm. A pressure ulcer of the DESIGN-R classification d2 was found in the sacral region [4]. Blood tests showed the following: leukocyte count, 8500/μL (3600-8900/μL); albumin, 3.2 g/dL (4-5.2 g/dL); C-reactive protein (CRP), 7.77 mg/dL (<0.3 mg/dL); erythrocyte sedimentation rate, 101 mm/h (3-15 mm/h); rheumatoid factor, 6.7 IU/mL (<15 IU/mL); and absence of anti-cyclic citrullinated peptide antibody. The liver and kidney functions were unremarkable.

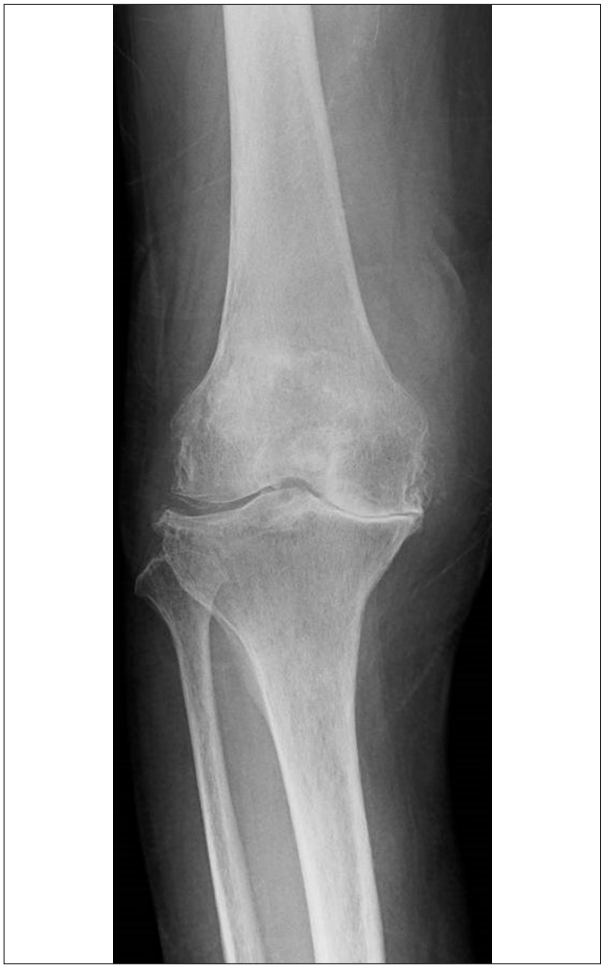

Figure 1. Anterior-posterior frontal view of right knee radiograph: Calcium deposits are observed in the right knee joint lateral meniscus together with medial compartment narrowing and diffuse osteophytes consistent with chondrocalcinosis, pseudogout, and osteoarthritis.

Two sets of blood cultures were obtained, and the results of both were negative. A plain radiograph of the right knee joint revealed calcification of the articular cartilage and changes of osteoarthritis (**Figure 1**). Joint ultrasound examination findings showed adhesive inflammation in the left long head of the biceps in the shoulder, and hyperechoic areas suggestive of pyrophosphate crystals in the right knee joint. Right knee arthrocentesis showed no crystal components or causative organisms could be isolated. Based on these results and the clinical course, the patient was diagnosed with polymyalgia rheumatica (PMR). Then, she received prednisolone (15 mg/day)

Indexed in: [PMC] [PubMed] [Emerging Sources Citation Index (ESCI)] [Web of Science by Clarivate]

therapy. Consequently, her joint symptoms markedly improved within 1 week. Subsequently, prednisolone was tapered off with outpatient follow-up, and no relapse of PMR was observed after 5 months [5,6].

Discussion

In this case, it was challenging to differentiate PMR from pseudogout. The patient had pain and warmth in the right knee joint, similar to the previous episode of pseudogout. Calcium pyrophosphate dihydrate deposition disease (CPPD) was initially suspected. Hyperechoic findings were noted on joint echocardiography, suggestive of pseudogout, and calcification in the joint fissures was observed on joint radiography, corresponding to CPPD, based on the diagnostic criteria [7]. As this was an elderly patient with dementia, eliciting information concerning the location of the pain and other problems was difficult. A medical interview with the family revealed that the patient's pain was severe, she could not turn over on bed, and that a new pressure ulcer had formed. Therefore, the patient was not considered to have single-joint pseudogout. Physical examination was performed to evaluate pain in the shoulders and right knee joint. All required criteria (age >50 years, pain in both shoulders, and elevated CRP levels and red sedimentation rate) were met. The evaluation according to the combined clinical and ultrasound criteria was as follows: morning stiffness for >45 min (2 points); restricted range of motion (1 point); absence of rheumatoid factor and antibody to cyclic citrullinated peptide (2 points); at least 1 shoulder with subdeltoid bursitis, biceps tenosynovitis, or glenohumeral synovitis; and at least 1 hip with synovitis or trochanteric bursitis (1 point). As the total score in our patient was ≥5 points (6 points), she was diagnosed with PMR [8]. Since there were no findings of vasculitis on ophthalmic examination, headache, or tenderness in the temporal artery, the possibility of giant cell arteritis was excluded. Interestingly, a previous study reported that PMR is difficult to diagnose in elderly patients with dementia [9]. Eventually, the patient was diagnosed with PMR based on the physicians' evaluation, laboratory and imaging studies, and family interview.

Another study reported that 13% of pseudogout cases were associated with PMR [10]. Among the pseudogout types, crowned dense syndrome was more challenging to be diagnosed as PMR compared to the other types [11]. Thus, we considered PMR as a mimicker of CPPD, especially in elderly patients with dementia.

Conclusions

Interviewing elderly patients with advanced dementia can be difficult. Moreover, they might have multiple comorbidities, making them vulnerable to early closure due to pre-existing conditions or previous episodes. Hence, a detailed family interview is essential to make a correct diagnosis. It is essential to work closely with family members and caregivers in the future to prevent diagnostic errors.

Acknowledgements

We would like to thank Editage (www.editage.com) for English language editing.

Declaration of Figures' Authenticity

All figures submitted have been created by the authors who confirm that the images are original with no duplication and have not been previously published in whole or in part.

References:

1. Peterson MC, Holbrook JH, Von Hales D, et al. Contributions of the history, physical examination, and laboratory investigation in making medical diagnoses. West J Med. 1992;156:163-65
2. Panagioti M, Stokes J, Esmail A. Multimorbidity and patient safety incidents in primary care: A systematic review and meta-analysis. PLoS One. 2015;10:e0135947
3. Reisberg B. Functional assessment staging (FAST). Psychopharmacol Bull. 1988;24:653-59
4. Sanada H, Iizaka S, Matsui Y, et al. Clinical wound assessment using DESIGN-R total score can predict pressure ulcer healing: Pooled analysis from two multicenter cohort studies. Wound Repair Regen. 2011;19:559-67
5. Dejaco C, Duftner C, Cimmino MA, et al. Definition of remission and relapse in polymyalgia rheumatica: Data from a literature search compared with a Delphi-based expert consensus. Ann Rheum Dis. 2011;70(3):447-53
6. Birra D, Zoli A, Peluso G, et al. FRI0319 Predictors of complete remission in polymyalgia rheumatica. Ann Rheum Dis. 2017;76:608
7. Rosenthal AK, Ryan LM. Calcium pyrophosphate deposition disease. N Engl J Med. 2016;374:2575-84
8. Ozen G, Inanc N, Unal AU, et al. Assessment of the new 2012 EULAR/ACR clinical classification criteria for polymyalgia rheumatica: A prospective multicenter study. J Rheumatol. 2016;43:893-900
9. Alisky JM. Do not overlook polymyalgia rheumatica as a cause for immobility in poorly communicating dementia patients. South Med J. 2008;101:1277-78
10. Pego-Reigosa JM, Rodriguez-Rodriguez M, Hurtado-Hernandez Z, et al. Calcium pyrophosphate deposition disease mimicking polymyalgia rheumatica: A prospective follow up study of predictive factors for this condition in patients presenting with polymyalgia symptoms. Arthritis Rheum. 2005;53:931-38
11. Aouba A, Vuillemin-Bodaghi V, Mutschler C, De Bandt M. Crowned dens syndrome misdiagnosed as polymyalgia rheumatica, giant cell arteritis, meningitis or spondylitis: An analysis of eight cases. Rheumatology (Oxford). 2004;43:1508-12

Indexed in: [PMC] [PubMed] [Emerging Sources Citation Index (ESCI)] [Web of Science by Clarivate]