THE IMPORTANCE OF EARLY DIAGNOSIS OF RHEUMATOID ARTHRITIS TO REDUCE THE RISK OF UNFAVORABLE OUTCOMES: A CASE REPORT

A IMPORTÂNCIA DO DIAGNÓSTICO PRECOCE DA ARTRITE REUMATÓIDE PARA MINIMIZAR AS CHANCES DE DESFECHOS DESFAVORÁVEIS: RELATO DE CASO

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ABSTRACT

Rheumatoid arthritis (RA) is characterized by inflammation of the synovial tissue in multiple joints, leading to tissue destruction, pain, and deformities. This case report aimed to describe the case of a 68-year-old female patient with polyarthritis diagnosed 17 years ago. The physical examination revealed joint deformities in elbows and knees, decreased range of motion in elbows and hands, and edema in ankles and knees. Complementary exams showed positive rheumatoid factor and x-ray with severe joint destruction. These results, combined with clinical history and physical examination, lead to the diagnosis of RA. Early diagnosis of RA is crucial to avoid physical and psychosocial damage, medication costs, joint prostheses, and work absenteeism.

Keywords: Delayed diagnosis; patient harm; rheumatoid arthritis; rheumatic disease.

RESUMO

A artrite reumatoide (AR) é caracterizada pela inflamação do tecido sinovial de múltiplas articulações que leva à destruição tecidual, dor e deformidades. É apresentado o relato de caso de uma paciente de 68 anos que possuía história de poliartrite havia 17 anos e cujo exame físico revelava deformidades articulares de cotovelos e joelhos, bloqueio parcial da mobilidade de cotovelos e mãos, além de edema nos tornozelos e joelhos. Exames complementares evidenciaram fator reumatoide (FR) positivo, e a radiografia indicou severa destruição articular, que, combinados com a história clínica e a avaliação corporal, permitiram o diagnóstico de AR. A fim de evitar danos físicos, psicossociais e gastos com medicações, próteses articulares e afastamentos laborais, o diagnóstico precoce da AR é imperativo.

PALAVRAS - CHAVE: Artrite reumatoide; doenças reumáticas; dano ao paciente; diagnóstico tardio.

INTRODUCTION

Rheumatoid arthritis (RA) is characterized by inflammation of the synovial tissue in multiple joints, leading to tissue destruction, pain, deformities, and reduced quality of life[1]. Although its etiology is complex and largely unknown, studies suggest that genetic and environmental factors influence its pathogenesis[2]. Hands and wrists are the most frequently affected joints, causing pain and morning stiffness when inflamed. The articular cartilage is destroyed as the disease progresses, and patients may develop deformities. Due to the strong genetic influence, family members of patients with RA are considered a risk group for developing the disease, especially in severe forms[3].

The early stage of RA can be considered a therapeutic window since the appropriate therapy

can modify the disease course, resulting in a better prognosis than diagnosis at later stages[4]. To address this issue, the 1987 classification criteria of the American College of Rheumatology, which includes suboptimal characteristics of early RA (e.g., x-ray changes [erosions] and rheumatoid nodules), were reevaluated, leading to a new American College of Rheumatology/ European League Against Rheumatism (ACR-EULAR) criteria in 2010, which focused on the early phase of the disease[5]. The new criteria encompass four domains: joint involvement, serology, duration of symptoms, and acute-phase reactants. Items in each domain are scored, and a minimum score of six is required for classification. Additionally, the criteria can be applied to any patient if two requirements are met: evidence of active clinical synovitis in at least one joint during the physical examination and the absence of other diagnoses that better explain the synovitis[5,6]. The number of affected joints may use ultrasonographic imaging methods and magnetic resonance imaging if doubts remain[5].

Non-pharmacological treatments (e.g., occupational therapy, physical therapy, psychosocial support, and patient and family education) are crucial for managing patients with RA[7]. From a pharmacological perspective, the Brazilian Society of Rheumatology recommends the use of disease-modifying antirheumatic drugs (DMARDs), such as methotrexate and leflunomide, which can be combined with biological disease-modifying antirheumatic drugs and Janus kinase inhibitors[6].

Despite the high potential for disability, the course of RA can be modified with early diagnosis and proper management, reducing physical, social, and occupational damage that leads to prolonged periods of work absenteeism that directly (or indirectly) impact socioeconomic costs[8]. However, the heterogeneity of the clinical manifestations hamper the early diagnosis of RA, which delays the initiation of treatment.

The present study aimed to highlight the importance of early diagnosis of RA through a case study of a patient with a delayed diagnosis who developed irreversible consequences, joint destruction, and reduced quality of life.

CASE REPORT

MJS is a 68-year-old female retired dressmaker. She was referred to the Rheumatology Clinic at the School Clinic of the Faculty of Medicine of Olinda (FMO) due to polyarthralgia and a diagnosis of “arthritis” and “osteoarthritis” made 17 years ago, occasionally treated with prednisone. After tapering off the medication in February 2021, she attended her first consultation with the specialist without any medication. The patient reported that the pain started insidiously, associated with swelling in the elbow, knee, and ankle joints. The pain had worsened over the past three months, resulting in an inability to walk due to heat and a swollen joint. Regarding factors that reduced or increased the arthralgia, the pain was partially reduced with the use of dipyrone and prednisone but worsened after physical efforts (e.g., household chores). She also reported joint stiffness after resting for more than 30 minutes, which improved throughout the day, and denied experiencing cramps, muscle weakness, or other general symptoms.

During the physical examination, the right elbow and knee and the left ankle presented edema with limited extension in the right elbow and knee; additionally, edema and Bouchard’s nodes were observed on the third proximal middle finger of the right hand (Figures 1 to 4). On palpation exam, she reported pain in the knees, right elbow, shoulders, wrists, and left ankle. On the visual analog scale for pain, she rated it as eight out of ten over the past week. The squeeze test on the left foot was positive.

The x-ray of the hands and wrists revealed reduced joint space, cortical erosions, and the presence of bone cysts. The laboratory tests showed rheumatoid factor (RF) at 45 IU/mL (reference value [RV]: 20 IU/mL); C-reactive protein (CRP) at 53 mg/L (RV: 6 mg/L); 25-Hydroxyvitamin D at 25 ng/mL (RV: 20 ng/mL). Treatment was started with methotrexate 15 mg per week, prednisone 5 mg (half a tablet in the morning), folic acid 5 mg (to be taken the day after methotrexate), calcium carbonate, and vitamin D 50,000 IU.

Considering the diagnostic hypothesis of RA, the 2010 ACR/EULAR criteria were applied, resulting in nine points (involvement of more than ten joints, positive RF, duration longer than six weeks, and altered acute-phase reactants) [9]. At a follow-up appointment three months after starting the treatment, the patient reported improvement in pain (six out of ten over the past

week) and joint swelling, and CRP was normalized. The patient continued with quarterly follow-up.

This case report followed the guidelines of Resolution 466/12 and Circular Letter No. 166/2018 of the National Health Council and was approved by the research ethics committee of the FMO (no. 5.151.987).

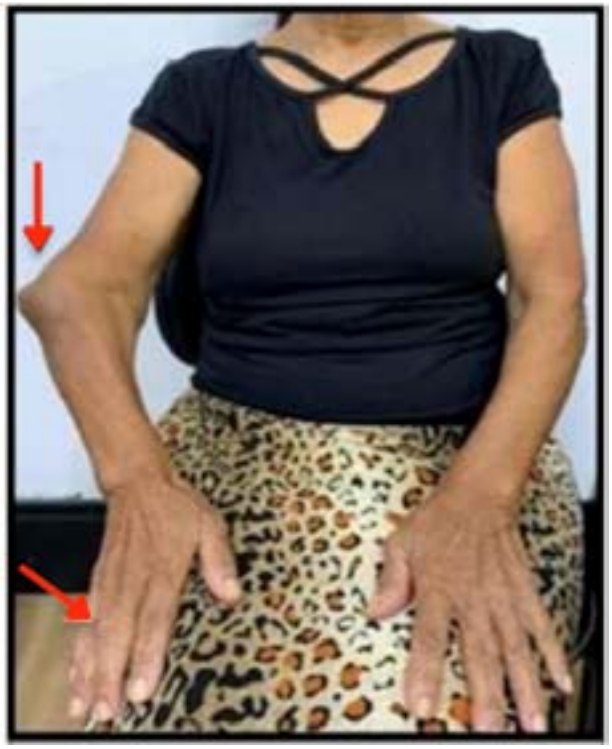

Figure 01: Deformity of the right elbow, with limited joint extension and swelling in the 3rd proximal interphalangeal joint of the right hand.

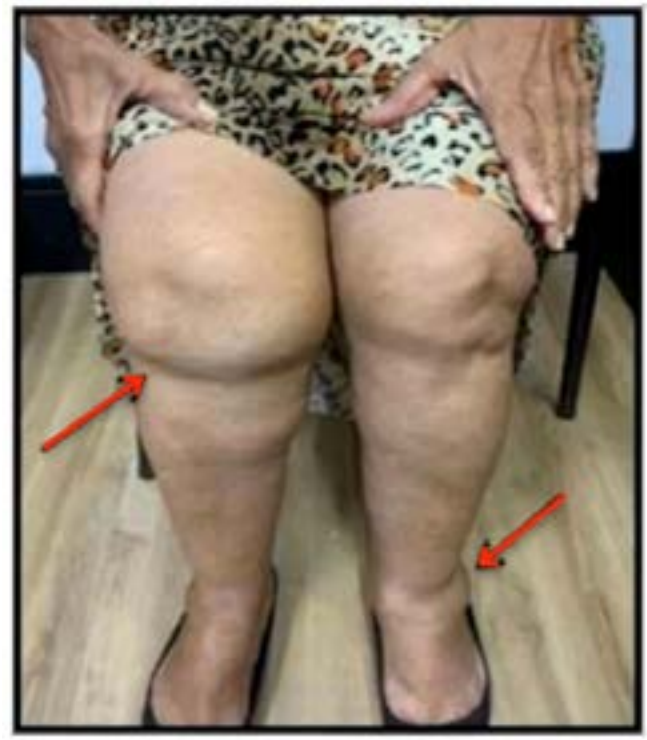

Figure 02: Swelling of the knees (right greater than left) and ankles (left greater than right) with decreased range of motion.

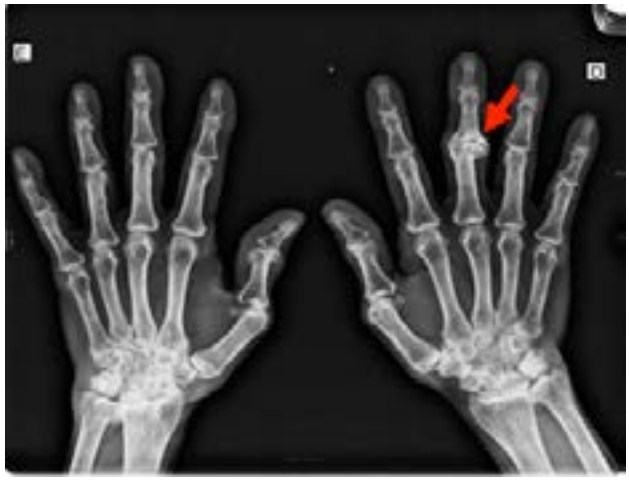

Figure 03: X-ray of the hands showing joint space narrowing and erosions in the carpus; the red arrow indicates narrowing space and erosions in the 3rd proximal interphalangeal joint of the right hand.

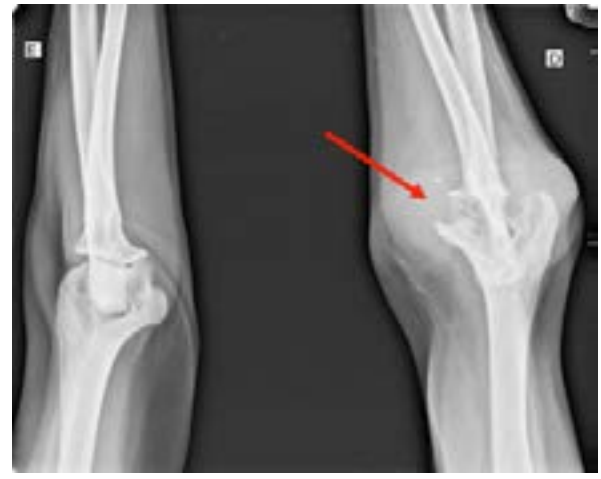

Figure 04: X-ray of the elbows showing joint destruction in the right elbow (arrow) with significant decreased range of motion.

DISCUSSION

Advances in the diagnosis of RA facilitate early detection and monitoring of disease activity, contributing to appropriate and effective treatment[2]. Despite these advances and the available treatments, many patients affected by autoimmune rheumatic diseases progress to unfavorable outcomes. These outcomes can be influenced by intrinsic (e.g., genetic predisposition, sex, and family history) or extrinsic factors (e.g., delayed recognition by general physicians and difficulty accessing specialists)[8].

The duration of symptoms required to define early RA varies according to the literature[5]. Historically, RA was considered "early" if symptoms lasted less than five years; however, this period was reclassified to less than two years in the 1990s, emphasizing the first 12 months of clinical manifestations, which classify RA as "very early"[6]. The diagnostic criteria are based on clinical findings and complementary exams, including the disease progression, the presence of autoantibodies RF, anti-citrullinated peptide antibodies, elevated inflammatory markers (CRP and erythrocyte sedimentation rate), and compatible changes in imaging exams[5]. Besides the articular symptoms, the disease can cause extra-articular manifestations, such as rheumatoid nodules, interstitial lung disease, or cutaneous vasculitis[10]. In this case report, the lack of early diagnoses led to joint destruction with a significant limitation in the range of motion and walking ability and reduced quality of life. Patients with RA can also develop cardiac complications and infections, which increase mortality rates[11]. Estimates suggest a poor long-term prognosis, as 80% of affected patients will have some degree of disability after 20 years, and their life expectancy is reduced by 3 to 18 years[12].

The European League Against Rheumatism considers the risk factors for unfavorable progression listed in Chart 1. Monitoring these factors is crucial for identifying patients at higher risk of severe and debilitating disease progression and indicates a need for more rigorous clinical surveillance and more aggressive treatment[6].

Chart 01 - Factors for a bad prognosis in rheumatoid arthritis
Persistently moderate or high disease activity despite DMARD treatment
Presence of initial erosions
Failure of two or more csDMARDs
Presence of RF* or anti-CCP** (or both), especially at high levels
High number of swollen joints
High levels of acute-phase reactants

*rheumatoid factor ** anti-cyclic citrullinated peptide

Given the need for early identification and monitoring of poor prognosis factors in RA, access to specialist physicians, especially rheumatologists, must be ensured for the population. However, the training of general physicians is essential since they are the first line of healthcare assistance for the population. They need to be capable of recognizing the disease, initiating early therapy, or referring patients as needed.

FINAL CONSIDERATIONS

RA is an autoimmune polyarthritis that can lead to joint destruction and significantly impact quality of life. Despite advances that facilitate early diagnoses, some patients still progress to unfavorable outcomes, possibly due to modifiable factors, such as difficulties faced by general physicians in establishing the diagnosis, limited access to specialists, and failure to recognize poor prognosis factors. This aspect also included the lack of individualized treatment based on local realities and difficulties accessing complementary exams. However, factors inherent to the patient (e.g., genetic predisposition) influence the outcome.

Searching for goals that enhance early diagnosis of RA will contribute to reducing morbidity in affected patients.

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