

Association Ankylosing Spondylitis and Rheumatoid Arthritis: Study of an Observation

Condé K¹, Makougang C.S², Dragan R.E³, Raftakis I⁴, Badot V⁵, Bentin J⁶

¹Department of Rheumatology University Hospital Center Ignace Déen, ConakryGuinea

^{2,3,4,5,6}Department of Rheumatology, University Hospital Center Brugmann, Brussels Belgium

Abstract: *Rheumatoid arthritis (RA) and Ankylosing Spondylitis (AS) are among the most frequent inflammatory diseases. The coexistence between AS and RA is rare. We report a case of a 48 year old man, who presented with inflammatory low back pain in 2012 and the diagnosis of Ankylosing Spondylitis was reached in agreement with the modified a New York and the ASAS criteria . In 2016, he presented an erosive seropositive for RF and anti CCP polyarthritis. The treatments comprised NSAID's, Methotrexate, and finally anti TNF a blockers.*

Keywords: rheumatoid arthritis, ankylosing spondylitis, antigen HLA

1. Introduction

Rheumatoid arthritis (RA) and Ankylosing Spondylitis (AS) are among the most frequent inflammatory diseases. [1]. Until the years of 70's, the two diseases were not differentiated from each other, and AS was regarded as the vertebral expression of RA, due the name "rheumatoid spondylitis.". Later, the discovery of the association with HLA-B27 and that of the shared epitope changed this consideration [2]. In RA, there exists a female prevalence and the principal clinical expression is a symmetric arthritis of the small joints , the attack of the spinal column is exceptional for the atlanto-axial joint which is a rare complication [1.2]. On the other hand, AS is more frequently described in men and the axial attack is the principal clinical manifestation. Peripheral arthritis is present in 30% of the cases of AS [1.2]. Currently, each disease has well defined classification criteria [3]. However, a problem may endue when the patient presents simultaneously typical symptoms of the two diseases. The coexistence between AS and RA is rare [4], nearly 50 cases were described in the literature, most of them more than 30 years ago.[5].

2. Observation

We report a case of a 48 year old patient, smoker (38 packages/years), without past medical problems, followed Ankylosing Spondylitis since 2012. The diagnosis was reached according to the modified New York and the ASAS criteria (Assessment of international Spondyloarthritis Society). The patient was treated with Etoricoxib 90 mg per day. In November 2016, the patient developed a symmetric, chronic and deforming polyarthritis with exacerbations and remissions involving shoulders, elbows, wrists, PIP, with low back pain with prolonged morning stiffness. He had no fever, cough, urinary infection, digestive disorders or psoriasis. Physical examination revealed a patient in good general state. Palpation revealed swelling of the 1,2 metacarpo-phalangeal joints bilaterally, of the wrists, the right elbow with flexion contracture. At the lumbar level, pain was present with the pressure of the spinous processes. The Schöber test was 10+1, the lateral Schöber was 30 cm, the cervical and dorsal spine were

without normal. Pain was also present at the pressure of sacro-iliac joints with positive Ericksen and Volkmann manoeuvres. No uveitis, cardiac or pulmonary manifestations were present.

Biology revealed a normal blood count, increased inflammatory markers with a st ESR test at 41 mm in the 1st hour, and a C-reactive protein (CRP) positive at 32 mg/l. At the immunological level, the antinuclear antibodies (AAN) were positive to 1/80 of homogeneous fluorescence, so as the anti-Cyclic Citrullinated Peptide (anti CCP) to 328 U/ml, the rheumatoid factor (RF) at 742 U/ml. The anti-dsDNA antibodies (acid desoxyribonucleic double bit) and the anti ENA (extractable nuclear antigens) were negative.

The radiography of the hands was normal, the CT cone beam of the hands was positive of erosions at the level of the wrist and the MCP joints.(figure 1B).

The MRI of the sacroiliac joints and the lumbar spine revealed bilateral sacroilitis (figure 1 C and D) and aseptic spondylodiscitis (Anderson lesions)(figure 2). The genetic tests were positive for HLA (human leucocyte antigen) B27 and HLA DR4.

The patient had no past medical history for tuberculosis and the Mantoux and quantiferon tests were negative.

Besides the diagnosis of AS, the presence of erosive chronic polyarthritis, positivity of the anti-CCP and RF, a diagnosis of seropositive RA was reached in agreement with the criteria of the ACR/EULAR 2010. This association SA and PR were confirmed by the genetic tests.

After confirmation of this association (AS and RA), a treatment with methotrexate 15 Mg/ week, medthyprednisolone 8 mg/day was started with a good clinical response.

In July 2017, the patient presented a flare with arthritis of the elbows, wrists, the hands, an ESR at 56 mm/h, and a CRP was 40.8 mg/l. The indices of activity and quality of life were to raised (the BASFI 9.8/10 and the BASDAI

8.5/10, HAQ 48/60 and the DAS-28 5.8). The ultrasound of the wrists showed synovitis and tenosynovitis grade III using the Rower Doppler modality (figure 1A). Consequently, we increased the a dose of methotrexate at 20 Mg/week and methylprednisolone at 16 mg/day. In February 2018, a biological treatment with an anti TNF was started (Adalimumab) 40 Mg subcutaneously every other week. This biological therapy reduced significantly the degree of inflammation and the indices of activity of the disease (table 1).

3. Discussion

Rheumatoid arthritis (RA) and Ankylosing Spondylitis (AS) are among the most frequent chronic inflammatory diseases, showing various clinical, serologic and genetic characteristics, affecting the joints, the entheses and internal organs [1]. Association of RA and AS is rare [4]. Fallet and al. [6] described nine cases. According to them, the probability of the two diseases at a patient is of 1/50 000 to 1/200 000. In 1995, Toussirot and al. [7] described three patients, and after a review of the literature, they analyzed 44 similar cases. According to these authors, a typical patient with the coexistence RA and AS is a man who developed an axial spondyloarthritis at the age of 20-30 years, who developed symptoms of peripheral arthritis in the following years.

RA is associated with HLA-DR4 or DR1 genes (60% of the cases) while AS is associated with antigen HLA-B27 (at 95% of patients SA) [4]. Toussirot and al. [7] found a prevalence of 6.6% of HLA B27 in patients with RA. However, the presence of HLA-B27 among RA patients reached does not increase the incidence of the enthesitis nor the herald of sacroiliitis [1, 7].

RF is present in 70%-90% in RA and their levels can be in direct correlation with the gravity of the disease [8]. Nevertheless, RF is not specific, as it can be present in other diseases [4]. Although 10 to 15% of the patients with AS may be tested positive for RF, their titles are generally weak [9], contrary to our patient. The Anti CCP can be present at only 67% of RA patients but are highly specific (> 96%) for the RA diagnosis [10]. The antibodies for CCP and RF are generally not found among patients with AS. Our patient had a seropositive symmetric polyarthritides, bilateral sacroiliitis, positively checked for HLA B27, thus fulfilling classification criteria for RA and AS.

In RA and AS, there is an important production of pro-inflammatory cytokines such as the TNF (tumor necrosis Factor) [11]. Treatment with anti TNF agents is highly efficacious and that was the case with our patient.

4. Conclusion

The combination of rheumatoid arthritis and ankylosing spondylitis is rare but real and represents a real diagnostic and therapeutic challenge for the rheumatologist. The question whether this association is a pure coincidence or some individuals are predisposed to such an association remains largely debated.

5. Declaration of interest

The authors declare no conflict of interest.

References

- [1] Barczyńska T A, Węsierska M, Żuchowski P, Dura M, Zalewska J et al. Coexistence of rheumatoid arthritis and ankylosing spondylitis. *Reumatologia* 2015; 53, 5: 279–285.
- [2] Baksay B, Dér A, Szekanecz Z, Szántó S, Kovács A. *ClinRheumatol.* Coexistence of ankylosing spondylitis and rheumatoid arthritis in a female patient 2011; 30 :1119–1122.
- [3] Van der Horst-Bruinsma IE, Lems WF, Dijkmans BA. A systematic comparison of rheumatoid arthritis and ankylosing spondylitis. *ClinExpRheumatol* 2009; 2 : 43–9.
- [4] Azevedo VF, Buiar PG. Concurrent rheumatoid arthritis and ankylosing spondylitis in one patient: the importance of new classification criteria. *Rev Bras Reumatol* 2013;53(1):111–119
- [5] Major P, Resnick D, Dalinka M, Kline P. Coexisting rheumatoid arthritis and ankylosing spondylitis. *AJR Am J Roentgenol* 1980; 134(5):1076–9.
- [6] Fallet GH, Mason M, Berry H, et al. Rheumatoid arthritis and ankylosing spondylitis occurring together. *Br Med J* 1976; 1: 804–807.
- [7] Toussirot E, Acquaviva PC. Coexisting rheumatoid arthritis and ankylosing spondylitis discussion of 3 cases with review of the literature. *ClinRheumatol* 1995; 14: 554–560
- [8] Wilson D. Rheumatoid factors in patients with rheumatoid arthritis. *Can Fam Physician* 2006; 52: 180–181.
- [9] Van der Horst-Bruinsma IE, Lems WF, Dijkmans BA. A systematic comparison of rheumatoid arthritis and ankylosing spondylitis. *ClinExpRheumatol* 2009 ; 27: S43–9.
- [10] Zhao J, Liu X, Wang Z, Liu R, Li Z. Is it necessary to combine detection of anticitrullinated protein antibodies in the diagnosis of rheumatoid arthritis? *J Rheumatol* 2010 ; 37(12) :2462–5.
- [11] Appel H, Loddenkemper C, Miossec P. Rheumatoid arthritis and ankylosing spondylitis – pathology of acute inflammation. *ClinExpRheumatol* 2009; 27 (4 Suppl 55) : 15–19

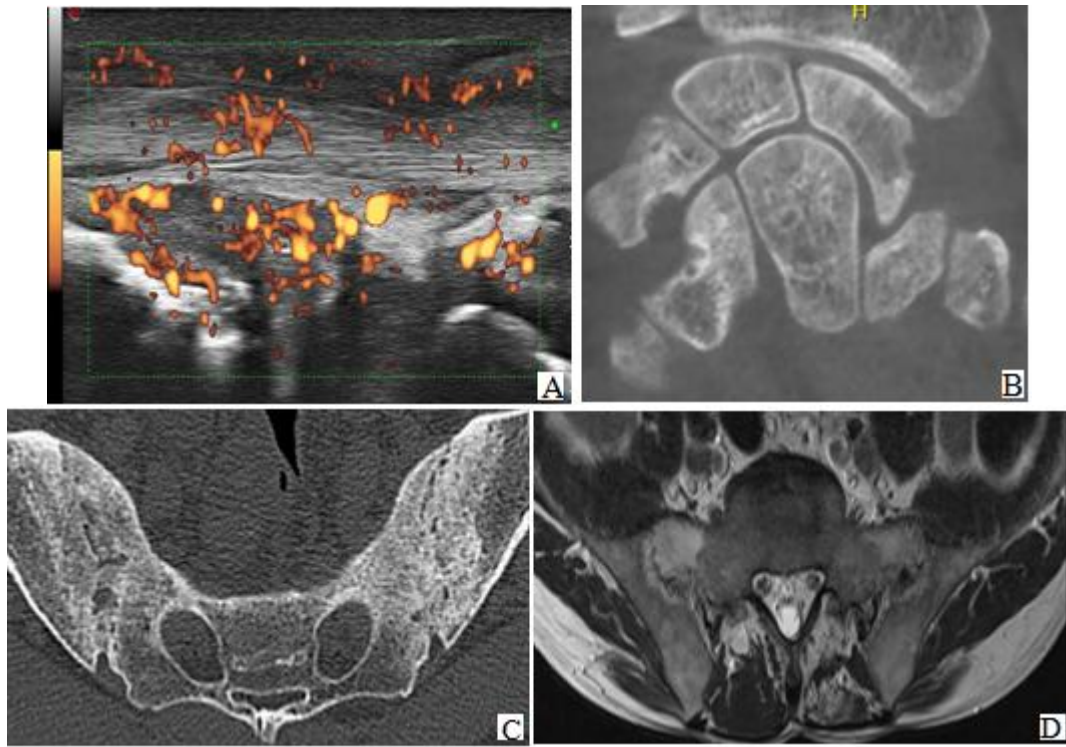


Figure 1: A. Right wrist ultrasonography: Grade III synovitis. B. CT cone beam of hands: erosive bones of carp. C. Scanning sacroiliacs: erosions with tendency to ankylosis and significant sclerosis on both sides of the sacroiliac joints. D. T2-weighted MRI of sacroiliacs: sacroiliitis with sacroiliac medial fusion and fatty degeneration.

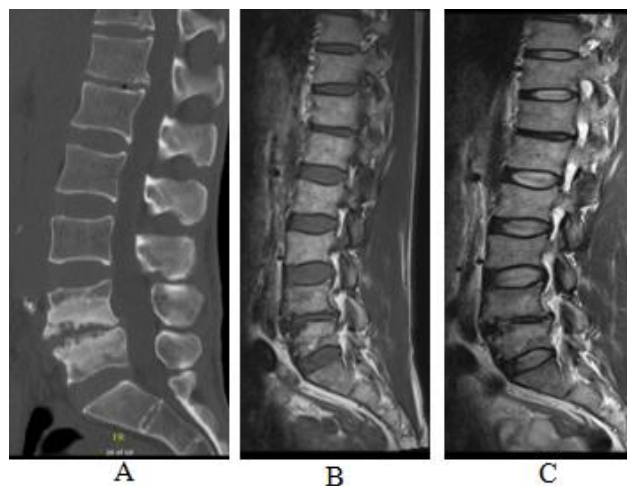


Figure 2: (A) Lumbar scan : Spondylolysis with L4-L5 erosions. Lumbar MRI in T1 (B) and T2 (C) weightings: Anderson spondylodiscitis.

Table 1: Evolution of quality of life and activity indices of RA and AS

	November 2016	July 2017	February 2018
SR (mm/h)	41	56	21
CRP (mg/l)	32	40,8	7,1
DAS-28	4,75	5,8	2,67
HAQ	35/60	48/60	25/60
BASFI	6/10	9,8/10	3,5/10
BASDAI	5,2/10	8,5/10	2,8
ASDAS	4.5	5.1	1.45