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LETTER TO THE EDITOR

Redefining a diagnosis: from meningeal plasma cell granuloma to rheumatoid meningitis. Report of a patient follow-up

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Sir,

In one of the previous issues of your Journal, we presented a patient with non-infectious meningitis, histologically characterized as plasma cell granuloma [1].

During the further months of follow-up, the patient developed mild normocytic anemia and a moderately elevated level of C reactive protein (CRP, 43.3 mg/l, normal values <5.0 mg/l) with unequivocally elevated levels of the rheumatoid factor (RF, 171.7 IU/ml, normal values <15.0 IU/ml) and antibodies against cyclic citrullinated peptides (anti-CCP, 405.3 IU/ml, normal values <7.0 IU/ml). Although she was initially without signs and symptoms of arthritis, during the following weeks after obtaining these laboratory results the patient developed gradually worsening pain, swelling and morning stiffness of several joints, including both radiocarpal joints, the right elbow, right knee, as well as bilateral talocrural joints (Fig. 1). The clinical presentation consistent with polyarthritis in addition to elevated CRP levels and pronouncedly increased levels of RF and anti-CCP were sufficient for the diagnosis of rheumatoid arthritis. The patient was started on a regimen of a gradually tapered daily dose of methylprednisolone in addition to weekly methotrexate. Treatment led to stable remission of arthritis and further regression of the previously noted neurological deficit.

The clinical course of the patient's disease was followed by the development of our understanding of the clinical context in which the meningeal lesions took place. Although we previously concluded that the plasma cell granulomatous meningitis in our patient was an isolated finding and a primary disease of the meninges, the further disease course warranted a redefinition of the patient's diagnosis, making rheumatoid arthritis the primary disease and (rheumatoid) meningitis its central nervous system manifestation.

Rheumatoid meningitis (RM) is an extremely rare manifestation of rheumatoid arthritis (RA). The largest case series of RM [2] involved 19 patients, most of which were diagnosed with RM post mortem based on autopsy findings (17 of 19 patients). That would probably not be the case nowadays, given the availability and development of sophisticated imaging methods, primarily magnetic resonance imaging. Patients from the case series [2] developed RM late in course of RA (after a median of 14 years following diagnosis of RA). This makes the occurrence of RM as the initial disease manifestation even more unusual, although it was described in the literature in the recent years [3]. Both the lepto- and the pachymeninges may be affected in patients with rheumatoid meningitis [2]. It is interesting to mention that the neurological manifestations observed in our patient (predominantly including seizures and paresis) are considered to be consistent with leptomeningitis, while symptoms such as headache and cranial neuropathies are ascribed to pachymeningitis [4]. Despite the unquestionable utility of imaging methods and

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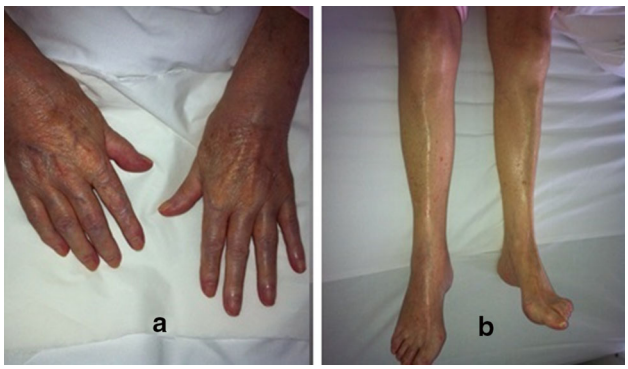

Fig. 1 Physical examination revealed arthritis of both radiocarpal joints (**a**), of the right knee and both talocrural joints (**b**)

cerebrospinal fluid analysis in the diagnostic workup of suspected RM, open meningeal biopsy is the corner stone of diagnosis [5], in conjunction with a positive titer of RF and/or even more specifically anti-CCP, classical serologic markers of RA. However, the usefulness of histopathology is still limited since there is no pathognomonic or even specific histological pattern that would lead to a high suspicion of RM, especially in the absence of other signs of RA. It is noteworthy that a non-specific mononuclear infiltrate including plasma cells was detected in only 63 % of cases in the previously mentioned case series by Bathon et al. [2].

In conclusion, given the rather broad differential diagnostic spectrum of non-infectious non-acute meningitis, it is difficult to establish a diagnosis of RM outside the setting of a previously diagnosed RA. The incidental and unexpected finding of positive RF and anti-CCP and, finally, development of polyarthritis facilitated our patient's diagnosis, which we now consider to be final.

Conflict of interest The authors declare that they have no conflict of interest.

Informed consent Informed consent was obtained from the patient presented in this manuscript.

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