Introduction

Cerebral lesions revealed in cranial MRI are reported to be potentially linked with different modern anti-TNF-α therapies of rheumatoid and inflammatory bowel disease [2, 6, 9, 20, 29, 31, 33]. Occurrences of demyelination in terms of a clinically isolated syndrome or a first manifestation of a former clinically silent multiple sclerosis (MS) have been described as possible consequences of anti-TNF-α therapies [7, 20, 34]; exacerbation of known MS in conjunction with such therapies has also been reported [32, 36]. We present two cases with detection of cerebral lesions on cerebral MRI during anti-TNF-α treatment.

Case report 1

A 55-year-old man was admitted to hospital for progressive neurological symptoms covering senso-motoric hemisyndrome, reduced ambulation distance, physical fatigue and urinary urgency. External MRI showed multiple cerebral lesions. His past medical history was characterized by long standing (over 25 years) psoriatic arthritis, arterial hypertension and lipometabolic disorder.

From March 2003 to May 2005 he received etanercept therapy (Embrel®) for psoriatic arthritis (50 mg subcutaneous every week). Due to detection of cerebral lesions in the external cranial MRI etanercept therapy was discontinued and an alternative treatment applying leflunomide (Arava®) was established in January 2007. From the neurological point of view the patient complained about premature physical fatigue during walking in the left leg and pain in the left hip-, knee- and ankle joints since 2002. In January 2005 he noticed hemiparesis and hemidysesthesia on the left as well as gait ataxia. Intravenous methylprednisolone therapy (1000 mg daily for 5 days) showed no positive effect as the hemisyndrome persisted. During the course reduced ambulation distance, physical fatigue and urinary urgency emerged. Within an ophthalmologic routine check-up a left-temporal scotoma was diagnosed that was not previously noticed by the patient.

On admission neurological examination revealed Lhermitte phenomenon, horizontal nystagmus on gaze to the right, left-temporal scotoma, hemiparesis and...
hemidysesthesia on the left side and ataxia. Left-sided reflexes were increased but no Babinski sign was observed.

Performing cranial and spinal MRI multiple cerebral and spinal T2-hyperintensities were shown. Dissemination in space conforming to the diagnostic criteria of Barkhof and McDonald was proven [1, 18]. No enhancement of lesions was observed after intravenous gadolinium administration. Comparing prior external and current MRI scans, dissemination in time has not yet been established (Fig. 1).

Cerebrospinal fluid (CSF) examination revealed an increased IgG index and oligoclonal bands. Analysis of visual-evoked potentials (VEP), somatosensory-evoked potentials (SEP) of the lower extremities and magnetic-evoked potentials (MEP) of the left arm and both legs showed prolonged central latencies.

Other differential-diagnostic tests did not show evidence for an infectious inflammation, neurosarcoidosis, vasculitis, vitamin deficiency or a metabolic disease.

**Summary**

From our point of view the patient suffers from late-onset MS with a presumably primary-progressive course, firstly manifested through clinical symptoms in 2002. The neurological disease exacerbated in 2005, possibly in the context of anti-TNF-α treatment.

A course of intravenous methylprednisolone (1000 mg daily for 5 days) was applied. On admission to the hospital three months later clinical (neurological examination, expanded disability status scale (EDSS)) and paraclinical (MRI, evoked potentials (EP)) findings were unchanged.

**Case report 2**

A 44-year old man complained about recurrent episodic disturbance of vision on both eyes in the morning. He described moving foggy spots and filaments which disappeared after 20 minutes. External cranial MRI showed multiple supratentorial T2-hyperintensities in the white matter. Upon admission to the hospital the patient negate other symptoms or neurological problems in the past. His past medical history revealed HLA-B27-positive ankyllosing spondylitis, psoriasis ulcerative colitis (UC), diabetes type II, arterial hypertension, hyperlipoproteinemia, sleep apnoe syndrome (SAS) and adipositas (body mass index (BMI): 41).

From August 2006 to December 2007 the patient received adalimumab treatment (Humira®) for ankylosing spondylitis (40 mg subcutaneous every other week). Since November 2007 he noticed visual disturbance on both eyes up to three times per day lasting for maximal 20 minutes. On inquiry these episodes were noticeable after getting up from sleep and disappeared after cessation of adalimumab.

On admission, neurological examination revealed normal parameters. Cranial and spinal MRI showed multiple subcortical white matter lesions with no lesions in the corpus callosum and without enhancement after intravenous gadolinium application. No infratentorial or spinal lesions were detected and no dissemination in space according to revised McDonald diagnostic criteria [18] was assessed (Fig. 2).

CSF examination was normal without detection of oligoclonal bands. SEP from lower extremities yielded prolonged latencies while VEP and MEP rendered normal findings. Other differential-diagnostic tests did not show evidence for an infectious inflammation, neurosarcoidosis, vasculitis, vitamin deficiency or a metabolic disease. Ophthalmologists confirmed our diagnosis of “mouches volantes” (opacity of corpus vitreum).