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LETTER TO THE EDITOR

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Cerebral vasculitis due to *Treponema pallidum* infection: MRI and MRA findings

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Sir,
A 44-year-old male was admitted because of recurrent transient ischemic attacks with right-sided hemiparesis. The patient was tested HIV positive 9 months before admission and his infection without an AIDS-defining illness was treated with three different reverse transcriptase inhibitors. In addition, 8 years previously he had suffered from luetic infection and at that time he was treated with tetracyclines. On neurological examination motoric functions of the limbs were unremarkable. Laboratory tests were positive for *Treponema pallidum* hemagglutinin (TPHA), fluorescent treponemal antibody absorption (FTA-ABS) IgG and IGM, as well as Venereal Disease Research Laboratory (VDRL). Cerebrospinal fluid (CSF) disclosed elevated protein content with 87.6 mg/100 ml as well as autochthone IgG (14.7 mg/100 ml) and IgM (2.0 mg/100 ml) intrathecal production. Cultures for bacteria and other microorganisms, including fungi, were negative. Initial MRI demonstrated small hyperintense lesions in the basal ganglia on T2-weighted as well as on diffusion-weighted images (DWI; b=1000 s/mm2; Fig. 1) typical for subacute lacunar infarctions. The MRA showed bilateral severe stenoses of the distal M1 and proximal M2 segments (Fig. 2). With regard to laboratory and neuroradiological findings, active neurosyphilis with vascular involvement was diagnosed. The patient was treated with i.v. ceftriaxone (2 g/day for 21 days), clopidogrel (75 mg/day), and aspirin (100 mg/day). Up to neurological follow-up 2 months later, there was no further ischemic event.

Syphilis remains an important and frequently encountered sexually transmitted disease caused by *Treponema pallidum*. The central nervous system (CNS) may become involved in any stage of the disease from weeks to years after the initial infection. Neurosyphilis is seen primarily in the tertiary and occasionally in the secondary stage of the disease. Pathological findings of neurosyphilis include acute syphilitic meningitis, meningovascular neurosyphilis, and parenchymatous neurosyphilis [1]. Diagnostic confirmation of neurosyphilis requires a positive FTA test and a positive CSF VDRL test accompanied by CSF pleocytosis and elevated CSF protein levels. The meningovascular form of neurosyphilis is usually associated with a prodromal clinical course of weeks to months before the onset of identifiable vascular syndromes. The most common clinical presentation is an ischemic syndrome in a young adult, involving the middle cerebral artery or less commonly the branches of the basilar artery.

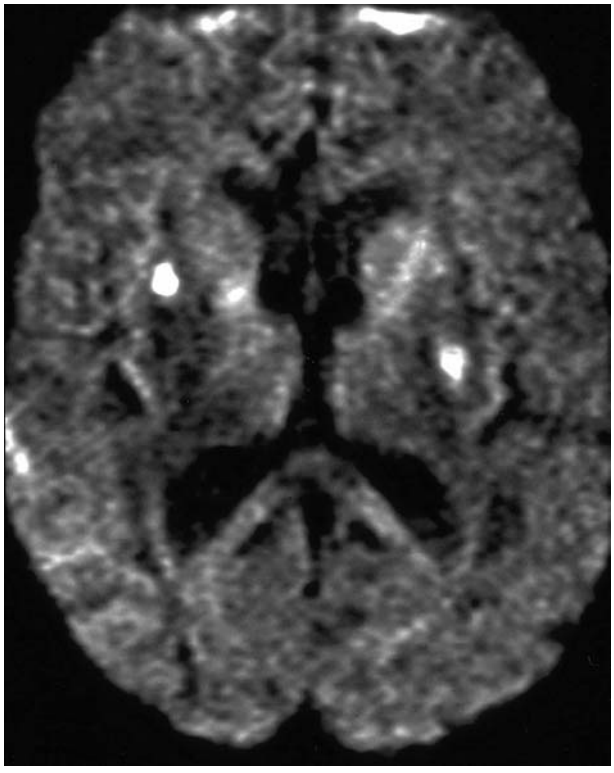

Fig. 1 Diffusion-weighted (b=1000 s/mm^2) axial image at the level of the lateral ventricles demonstrates small hyperintense lesions in the basal ganglia typical for subacute infarctions

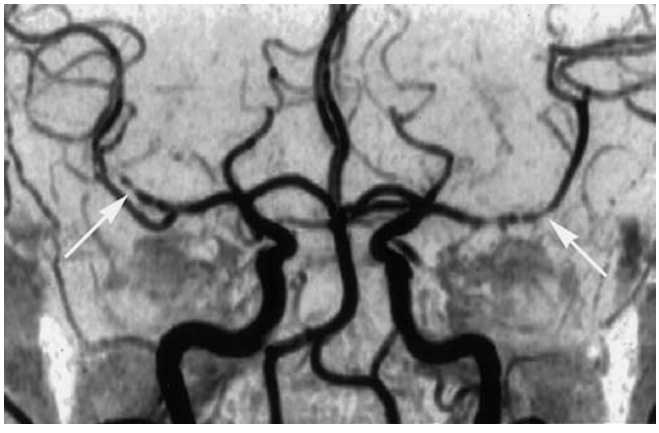

Fig. 2 Coronal 3D time-of-flight MRA shows bilateral severe stenoses of the distal M1 and proximal M2 segments (*arrows*)

Conclusion

Neurosyphilis remains a disease of contemporary society. The disease may mimic other diseases and might be difficult to diagnose; thus, imaging findings of arteritis on MRI and MRA in young adults with symptoms of ischemic stroke should serve as an indicator for meningovascular syphilis particularly in an immunocompromised host prone to opportunistic infection [2]. A complete history and physical examination complemented by appropriate tests including CSF analysis as well as MRI and MRA are essential. Other causes of vasculitis (e.g., autoimmune diseases and vasculitis related to bacterial or viral CNS infections) have to be excluded [3]. With appropriate antibiotic therapy neurosyphilis is a potentially curable disease.

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