CASE REPORT

A Case of Neurosyphilis Presenting With Treatment-Resistant Psychotic Symptoms and Progressive Cognitive Dysfunction

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Abstract

Objective: To describe a case of neurosyphilis presenting with treatment-resistant psychotic symptoms (which responded to antibiotic treatment) and cognitive dysfunction.

Method: A single case report.

Results: We describe the case of a sixty-nine year old man, presenting with psychotic symptoms characterised by persecutory delusions and olfactory hallucinations, and deterioration in cognitive functions. He had late latent syphilis revealed by specific serological investigation. CT scan revealed mild cortical atrophy. The psychotic symptoms did not respond to antipsychotic treatment, however improved following treatment with antibiotics.

Conclusion: This case emphasizes the need to exclude organic causes especially in patients whose symptoms resistant to treatment (German J Psychiatry 2008; 11: 153-155).

Keywords: neurosyphilis, cognitive dysfunction, psychotic symptoms

Introduction

The incidence of syphilis has increased recently along with the increased incidence of HIV infection (Inungu, 1998). Health Protection Agency in 2004 (Frauenfelder, 2006) reported that that the number of new cases of syphilis in the UK rose by 23%. However, it has been recognised that the prevalence of neurosyphilis is low due to widespread antibiotic use. Roberts & Emsley (1992) report that physicians failed to diagnose neurosyphilis in 19 of 21 patients in their case series probably due to low index of suspicion.

We report a diagnostic process and clinical management of a case with neurosyphilis, to prevent further progression by treating with appropriate antipsychotic and antibiotic.

Mr. RB is a sixty-nine year old single Afro-Caribbean man first referred to psychiatric services in July 2001. At the time, he had developed persecutory delusions towards his neighbour, lead him to contact police on numerous occasions. He also had olfactory hallucinations and hypomanic symptoms. He scored maximum points (30/30) on the Mini-Mental State Examination (MMSE). However, on neuropsychological tests, like the Wisconsin Card Sorting Test (WCST) and the Stroop Test, revealed evidence of poor cognitive flexibility, difficulties in set shifting and persevera-
tion. Impairment of immediate and delayed recall was evident in both verbal and visual modalities.

In view of an extensive history of sexual contacts, he was investigated for sexually transmitted diseases. His serological tests for neurosyphilis, likeVDRL and syphilis Ig by ELISA were positive. The TPPA (Treponema pallidum particle agglutination assay) was positive with a titre of 1:20480. His EEG, CT scan, liver function tests, thyroid function test, vitamin B12 and folic acid levels were normal. Thus, a diagnosis of late latent syphilis was made. The patient was treated with benzathine penicillin; unfortunately, he did not complete the recommended course. His hypomaniac symptoms subsided with carbamazepine. However, psychotic symptoms did not respond to antipsychotic treatment. Since 2003 he was tried on several antipsychotics by the community mental health team, which included trifluperazine, olanzapine, risperidone, aripiprazole, flupenthixol and quetiapine, without any success.

In May 2007, he presented with new symptoms of being agitated. His confusion was associated with significant deterioration in cognitive functions. In addition, he continued to have olfactory hallucinations and paranoid delusions. His cognitive function had deteriorated gradually over the previous 3 to 4 years, with a rapid deterioration in the three months preceding the referral. On the Mini-Mental State Examination (MMSE), he scored 22 out of 30, losing 3 points in orientation to time and place, as well as in recall of three objects. Neuropsychological tests were not performed due to doubts about his ability to co-operate with lengthy cognitive assessments.

The physical examination revealed visual impairment (due to band keratopathy caused by chronic uveitis) and corneal degeneration. He had stooped posture and slowness of movements. No other neurological signs were present.

In view of the previous history of syphilis and deterioration of cognitive functions, he was re-referred to the genito-urinary medicine clinic for a review. The genito-urinary medicine team were of the impression that he had symptoms suggestive of neurosyphilis and further investigations, including a lumbar puncture, were planned. However, Mr. RB refused the lumbar puncture. His repeat haematological, liver function tests, thyroid function test, vitamin B12 and folic acid were normal. ELISA for IgG, VDRL and TPPA (titre of 1:10240) were positive for syphilis. A CT scan revealed mild cortical atrophy.

Mr. RB commenced on a 28-day course of doxycycline 200mg twice daily taken orally. In addition, treatment with the antipsychotics flupenthixol 12mg and quetiapine 250mg was continued. A significant improvement in his paranoid delusions and olfactory hallucinations was observed within 2 to 3 weeks commencing treatment with doxycycline. There was no major improvement in his cognitive functions; however, there were no further episodes of confusion.

### Discussion

Neurosyphilis can occur at any stage of the syphilitic disease. Symptomatic neurosyphilis has a variable presentation of neurological syndromes, due to the infection of the central nervous system or endarteritis by Treponema pallidum (UK national guidelines, 2002). The most common manifestations of symptomatic neurosyphilis are Tabes dorsalis and general paralysis of the insane.

Psychiatric symptoms are well known from the time when neurosyphilis was first discovered. Kraft-Ebbing first reported that general paresis can present with neurosyphilis (Hutto, 2001). Generally, it starts with non-specific symptoms of personality change and amnesia but gradually, it can present with mood changes, psychotic symptoms and worsening of cognitive functions, associated with more crippling paralytic symptoms during later stages of the disease (Hutto, 2001). In fact, it can present with any kind of psychiatric symptoms.

The classical manifestation of neurosyphilis is not observed frequently at present. A number of reasons have been suggested, including the extensive use of antibiotics, partial treatment of the infection and co-infection with other sexually transmitted diseases. For example, it has been established that faster evolution of late syphilis occurs in HIV positive patients, with enhanced surveillance revealing that more than a third of patients with syphilis are infected with HIV (Frauenfelder, 2006). In our patient, it is likely that this manifestation (of neurosyphilis) was due to partial treatment with penicillin. Ideally, CSF examination should be performed to confirm or refute the diagnosis of neurosyphilis. However, our patient refused to undergo lumbar puncture for CSF treponemal test. The CT scan in our patient revealed cortical atrophy, which was in keeping with published literature (Holland, 1986; Pavitharan, 1993 and Gürses, 2007). Psychiatric symptoms improved with addition of antibiotic therapy to his antipsychotic medication, similar to the case series by Sanchez (2007).

This case report emphasizes the need to have a high index of suspicion of neurosyphilis in patients with significant past sexual history, presenting with psychiatric symptoms, especially when resistant to antipsychotic treatment.

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### References


UK National Guidelines for management of late syphilis published-1999, revised 2002