Neurosyphilis

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Neurosyphilis remains a clinical problem, especially when it presents in an unfamiliar and bizarre fashion. Several recent reports suggest a worldwide increase in the incidence of this condition.[1,2] One should keep a close vigilance as not to miss this treatable condition, since its presentation can reflect affection of different parts of the neuraxis. Neurosyphilis now rarely presents in its classical form of tabes or general paresis, but presents atypically with subtle signs and symptoms.[3] For example, neurosyphilis can masquerade as a stroke-like syndrome,[4,5] intracranial space-occupying lesion,[6,7] dementia,[8,9] psychosis or as movement disorders apart from its classical presentation of chronic meningitis. Cases presenting as dementia with magnetic resonance imaging showing findings suggestive of herpes simplex encephalitis have been reported.[10,11] In this issue cases presenting with stroke secondary to subclavian artery aneurysm[12] and chorea[13] have been presented. Spinal presentations can mimic amyotrophic lateral sclerosis, spinal cord compression or transverse myelitis.[14]

Since the antibiotic era, the spectrum of neurosyphilis is reported to have changed. Of the 241 new cases of neurosyphilis studied by Hooshmand et al.,[15] the majority were asymptomatic and the remainder had atypical syndromes, with only 49% having a reactive non-treponemal serological test for syphilis. A study from South Africa[16] reported that the majority of patients with neurosyphilis presented with subtle clinical signs and with weakly positive or even negative serology. The atypical presentation has been emphasized in an editorial in the British Medical Journal.[17] However, a study from the United Kingdom[18] in 1979 reported 17 cases of neurosyphilis and found that the presentations were not atypical.

Human immunodeficiency virus (HIV) and syphilis affect similar patient groups and co-infection is common. Patients with HIV are at increased risk for neurosyphilis.[19] All patients presenting with syphilis should be offered HIV testing and all HIV-positive patients should be regularly screened for syphilis. Detection and treatment of syphilis can, therefore, help to reduce HIV transmission. Syphilis may present with non-typical features in the HIV-positive patients: there is a higher rate of non-symptomatic primary syphilis and proportionately more HIV-positive patients present with secondary disease. Secondary infection may be more aggressive and there is an increased rate of early neurological involvement. Relapse of infection is more likely in the HIV-positive patient and careful follow-up is required.[20]

The diagnosis of neurosyphilis, or more often the definite exclusion of neurosyphilis as a clinical possibility, remains a difficult problem. *Treponema pallidum*, the causative agent, cannot be cultured in vitro and microscopic techniques are laborious. Thus, diagnosis depends on serologic tests and cerebrospinal fluid (CSF) examination. The diagnosis of neurosyphilis can be made with reasonable certainty if there is an appropriate neuropsychiatric syndrome associated with a positive CSF Venereal Disease Research Laboratory (VDRL) test.[21] The CSF VDRL when reactive, and in the absence of substantial contamination of CSF with blood, is diagnostic of neurosyphilis. The VDRL will be falsely positive only if blood contamination is sufficient to tinge the CSF pink.[22] What if the CSF VDRL is negative? CSF studies are reactive in only approximately 70-75% of neurosyphilis cases.[23] CSF fluorescent treponemal antibody absorption (FTA-AB) test may be the only...
serological evidence of neurosyphilis, and carries the advantage of being highly sensitive. However, a high proportion of cases with a positive FTA-AB in the CSF did not have neurosyphilis. The primary value of the FTA test in CSF may be to exclude the possibility of neurosyphilis if the test result is negative. If the CSF VDRL is negative, a positive FTA-ABS in an appropriate clinical setting, associated with raised CSF cell count, protein or IgG index, is a useful method of identifying neurosyphilis.[22]

Penicillin remains the drug of choice for the treatment of syphilis. Although several studies have suggested that azithromycin may have clinical efficacy, macrolide resistance has been widely documented among strains of Treponema pallidum, and treatment failures have been reported. Ceftriaxone is effective for the treatment of syphilis when used in multiple-dose regimens.[24]

References

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