Pandas Disease as a cause of epilepsy? A case report

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Background: PANDAS is an acronym for Pediatric Autoimmune Neuropsychiatric Disorder Associated with Streptococcal infection, a rare disease that usually appears in children. It involves a subset of patients that rapidly develop obsessive compulsive disorder and/or tic disorders after an infection with group A beta-hemolytic streptococci (GABHS). The cause for this is an autoimmune reaction against a pathogen (GABHS) that shares a similar epitope with the basal ganglia, therefore affecting them and interfering (permanently) with their function. Despite the growing number of reported cases, a comprehensive review of the literature did not show any papers suggesting a link between PANDAS DISEASE and epilepsy. There is both clinical and electrophysiological evidence supporting the involvement of the *basal ganglia* in epileptic *seizures.* Basal ganglia affect activity in the frontal cortex through a series of neural projections. Materials and methods: We present the case of a previously healthy 9 year old boy who 2 weeks after a pharyngitis caused by GABHS developed a tic disorder, and a month after that developed generalized tonic-clonic seizures with an epileptogenic focus on the right frontal leads as evidenced by a video EEG. An MRI as well as a SPECT scan showed no abnormalities, but a PET scan showed increased activity in his basal ganglia. Results: the patient was left with epilepsy minimally responsive to antiepileptic drugs. Conclusion: We therefore demonstrate a connection between GABHS infection and frontal lobe epilepsy, by affecting basal ganglia functions.