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The link between tics and streptococcal infection: A case report[☆]

Relación entre tics e infección estreptocócica: a propósito de un caso

Dear Editor:

Tics are repetitive, stereotyped movements that may be suppressed voluntarily. Patients feel the need to perform them as a means of relieving a mental or physical sensation that precedes them¹; the most frequent cause is Tourette syndrome (TS).² Researchers have tried to establish a link between tics and infection with Group A β -haemolytic streptococcus (GABHS).³ With this in mind, we present the case of a tic arising years after the patient had experienced Sydenham chorea (SC), a condition associated with GABHS, and we discuss the relationship between those episodes.

The patient was a 9-year-old girl who had experienced acute predominantly right-sided chorea, preceded by changes in handwriting and scholastic achievement. Anti-streptolysin antibody (ASLO) titre 1152; echocardiography showing mild mitral regurgitation; normal brain MRI; normal ceruloplasmin; and normal metabolic and hormonal studies. After being diagnosed with SC, she was treated with haloperidol, which improved symptoms, but the chorea persisted during 2 years. Since that time, she has received monthly prophylactic treatment with penicillin G. At the age of 13, she reported motor disorder in the form of brusque dorsal flexion of the left ankle when walking, causing the joint to click. This event could be prevented voluntarily, although the patient felt inclined to provoke it in order to relieve a feeling of tension in that joint. Traumatology study yielded normal results. ASLO: 285 (similar to previous studies); pharyngeal exudate presented normal

flora. Symptoms resolved spontaneously in 1 year without treatment.

The role played by GABHS in tic aetiopathogenesis is a topic of debate. Tics are known to be movement disorders that are frequently associated with streptococcal infection; on some occasions, they meet diagnostic criteria for TS.³ Nevertheless, the nature of this association is unclear.⁴ For example, we know that GABHS may provoke SC, which is the neurological autoimmune manifestation of rheumatic fever; it presents with chorea and other neuropsychiatric symptoms⁵ and tics in some cases.^{5,6} The same autoimmune mechanism may be involved in both syndromes. In fact, patients with SC have been described as being more susceptible to drug-induced tics than other patients.⁷ Doctors have also indicated that children with a prior history of tics are more likely to develop Sydenham chorea.⁸ In this sense, the autoimmune nature of this association between entities is reinforced by the concomitant finding of specific anti-basal ganglia antibodies and high ASLO titres in patients with TS.⁹ Lastly, another argument supporting the presence of an autoimmune aetiopathogenic link between tics and streptococcal infection is the description of paediatric autoimmune neuropsychiatric disorder associated with streptococcal infections (PANDA). This disorder is defined by relapsing-remitting episodes of tics and/or obsessive-compulsive disorder associated with a recent streptococcal infection and attributed to an autoimmune mechanism,¹⁰ although whether or not it really exists is currently a very controversial topic.¹¹

In our case, the motor disorder described by the patient met clinical criteria for a tic, and was interpreted as a simple motor tic of the foot during walking. Such tics, while less frequent than others, have been described in the literature.¹² Therefore, the presence of SC and tics in the same patient suggests yet again the possibility of a link between tics and streptococcal infection; the novel finding in our case is that the tic appeared years after SC. This being the case, our patient may have developed an increased propensity for tics after having SC. This would probably have been caused by the presence of circulating anti-basal ganglia antibodies. The possibility of there being

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a relapsing-remitting PANDA process due to reinfection was less likely, since ASLO titres were not high at the time when the tic appeared, the pharyngeal exudate culture was normal, and the patient was being treated prophylactically with penicillin.

In conclusion, although the association between tics and streptococcal infection is well-documented in the literature, the nature of that link is unclear, and further studies will be needed to offer an explanation.

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