NEURODEGENERATION WITH BRAIN IRON ACCUMULATION – ATYPICAL PKAN: A CASE REPORT OF HALLERVORDEN-SPATZ SYNDROME WITH NEUROPSYCHIATRIC FEATURES AND SUICIDAL BEHAVIOR

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ABSTRACT
Background: Syndromes with Neurodegeneration with Brain Iron Accumulation (NBIA) are a rare group of neurodegenerative disorders, being Pantothenate Kinase-Associated Neurodegeneration (PKAN), also known as Hallervorden-Spatz Syndrome, the most common NBIA disorder, with an estimated prevalence of 1 in 1 million. In atypical PKAN, motor involvement tends to be less severe, while cognitive decline and psychiatric features, may be the leading, even presenting sign. Objectives: We present a clinical report of suicidal behavior in a patient with this diagnosis, illustrating the relevance of an adequate evaluation and intervention. Methods: In addition to describing the clinical case, searches were undertaken in PubMed and other databases using keywords such as "Iron accumulation", "Hallervorden-Spatz", "PKAN", "Suicide" and "Suicidal behavior". Results: We here report the case of a 52-year-old female patient who attempted suicide by hanging. As far as we know, there are no published reports involving suicidal behavior in this type of neurodegenerative disorders, nor particularly in PKAN. Discussion: Some patients eventually diagnosed with PKAN will initially carry a diagnosis of a psychiatric disease. A high index of suspicion is essential for an adequate intervention involving all neuropsychiatric symptoms.

Keywords: Iron accumulation; Hallervorden-Spatz; PKAN; Suicide,;Suicidal behavior.

NEURODEGENERAÇÃO COM ACUMULAÇÃO CEREBRAL DE FERRO - PKAN ATÍPICO: RELATO DE CASO DE SÍNDROME DE HALLERVORDEN-SPATZ COM CARACTERÍSTICAS NEUROPSIQUIÁTRICAS E COMPORTAMENTO SUICIDA

RESUMO
Introdução: Síndromes com neurodegeneração e acumulação cerebral de ferro (NBIA) são um grupo raro de distúrbios neurodegenerativos, sendo a neurodegeneração associada à pantotenato-cinase (PKAN), também conhecida como Síndrome de Hallervorden-Spatz, o distúrbio mais comum dos NBIA, com uma prevalência estimada de 1 em 1 milhão. Na PKAN atípica, o envolvimento motor tende a ser menos grave, enquanto o declínio cognitivo e as características psiquiátricas podem ser os principais, ou até mesmo os sinais de apresentação. Objetivos: Apresentamos um relato clínico de comportamento suicidário num doente com esse diagnóstico, ilustrando a relevância de uma avaliação e intervenção adequadas. Métodos: Além de descrever o caso clínico, foram realizadas pesquisas na PubMed e em outras bases de dados, usando palavras-chave como "Acumulação de ferro", "Hallervorden-Spatz", "PKAN", "Suicídio" e "Comportamento Suicidário". Resultados: Descrevemos aqui o caso de uma doente de 52 anos que tentou o suicídio por enforcamento. Tanto quanto sabemos, não há relatos publicados envolvendo comportamentos suicidários nesse tipo de distúrbios neurodegenerativos, nem particularmente na PKAN. Discussão: Alguns doentes eventualmente diagnosticados com PKAN terão inicialmente um diagnóstico psiquiátrico. Um elevado índice de suspeição é essencial para uma intervenção adequada que envolva todos os sintomas neuropsiquiátricos.

Palavras-chave: Acumulação de Ferro; Hallervorden-Spatz; PKAN, Suicídio; Comportamento Suicidário.

We report a clinical case of suicidal behavior in a patient with a rare neurodegenerative disorder: Atypical Pantothenate Kinase-Associated Neurodegeneration (PKAN).

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G., a 52 year-old woman, had been diagnosed with PKAN since she was about 19 years old. Besides psychological follow-up due to eating compulsions when she was 45, no psychiatric history was apparent.

Initial psychiatric referral happened in the context of a suicidal crisis, in the outpatient setting. She had been depressed and anxious for two months, reactive to disease and its impact, associated with secondary excessive consumption of alcohol, culminating in such suicidal behavior – attempted suicide by hanging, prevented by relatives. There was no history of other suicide attempts.

Syndromes with neurodegeneration with brain iron accumulation (NBIA) are a group of neurodegenerative disorders characterized by abnormalities in brain iron metabolism with excess iron accumulation in the globus pallidus and to a lesser degree in the substantia nigra and adjacent areas [1]. NBIA disorders are rare and PKAN is the most common, accounting for approximately half of NBIA cases, with an estimated prevalence of 1 in 1 million [2].

PKAN is an autosomal-recessive disorder caused by defects in pantothenate kinase 2 protein, which is encoded by the gene PANK2 [3]. This enzyme phosphorylates pantothenate, the initial and rate-limiting step in coenzyme A biosynthesis [4] a key molecule for the metabolism of fatty acids, carbohydrates, amino acids, and ketone bodies [1]. The eponym Hallervorden-Spatz syndrome originally referred to disorder now known as PKAN, but its use has been discontinued [2].

PKAN may present form early childhood to mid-adulthood [5]. Classic PKAN refers to early-onset (around 3 years old), dystonia-dominant disease that is presumably caused by a complete loss of function of the pantothenate kinase 2 protein. Atypical PKAN, whose phenotype is heterogeneous and more slowly progressive [4] refers to later-onset, parkinsonism-dominant disease that is presumed to arise as a result of partial loss of function of the protein [2]. In atypical PKAN, speech difficulty is a frequent presenting sign [5]. Motor involvement tends to be less severe [1, 6] while cognitive decline and psychiatric features may be the leading, even presenting sign [1, 5, 7]. Among the neuropsychiatric problems experienced by people with atypical PKAN, the most common are impulsivity and obsessive-compulsive disorder. Some patients eventually diagnosed with PKAN will initially carry a diagnosis of Tourette syndrome or other psychiatric disease [2]. Hayflick *et al* [5] found that psychiatric symptoms were prominent in patients with atypical PKAN, and rare in the classic type. These symptoms included personality changes with impulsivity and violent outbursts, depression, and emotional lability.

There currently is no disease-modifying therapy for PKAN [8].

G. was medicated with escitalopram and quetiapine, and within 2 months there was complete remission, with no adverse effects, namely exacerbation of parkinsonic symptoms.

According to our knowledge, there are no other reported cases of suicidal behaviour in PKAN. Atypical presentations, where impulsivity and other personality changes are frequent, might increase the risk of suicidal behaviors, especially when considering the significant impairment and life changes determined by this serious neurological condition.

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