

Lafora disease: A case report

Manel Yahia, Besma Laabidi, Issam M'sakni, Fethi Bougrine, Ammar Bouziani

Department of Pathology, Military Hospital of Tunis, Tunisia

Corresponding author: Dr. Manel Yahia, E-mail: yahia_manel@live.fr

ABSTRACT

Introduction: Lafora disease is a rare and severe form of progressive myoclonus epilepsy. It is an autosomal recessive disease, genetically heterogeneous. **Aim:** Our aim is to study the clinic-pathological features of this rare entity. We report a case of Lafora disease. **Case Report:** We report the case of a 16 year old girl, which shows from the age of 14 myoclonus epilepsy. Neurological examination showed cerebellar syndrome and intellectual deterioration. Skin biopsy was needed to guide the diagnosis. The Lafora disease has a constantly fatal prognosis. Histological examination confirms the diagnosis and molecular study may help to establish a genetic counseling. **Conclusion:** Lafora disease has significant clinical and evolutionary characteristics that should guide the clinician to achieve axillary skin biopsy to find Lafora bodies.

Key words: Lafora; Epilepsy; Skin biopsy

INTRODUCTION

Lafora disease (LD) is an autosomal recessive disease characterized by a progressive myoclonus epilepsies (PME). The diagnosis is suggested by the association, in an adolescent, of epilepsy, myoclonic seizures and progressive cognitive deterioration. The electroencephalogram is characteristic and confirmation is made by histological examination [1]. The evolution is often fatal. We report the case of a 16 year old girl, who presents from the age of 14 seizures and myoclonus.

CASE REPORT

Our case is a 16 years old girl, born from a first degree consanguineous marriage with two sisters died of the same symptoms. The onset of the disease was at the age of 14 by the appearance of generalized tonic-clonic and myoclonic seizures with progressive cognitive deterioration. The skin examination was normal. Neurological examination found a cerebellar syndrome. The electroencephalogram (EEG) showed an epileptic encephalopathy. All the laboratory tests were normal. The magnetic resonance imaging showed

cerebral atrophy. Histological study of skin biopsy performed at the axillary region shows the presence of eosinophils Lafora bodies in cytoplasm of epithelial cells of apocrine sweat glands (Fig. 1). These Lafora bodies were PAS positive (Fig. 2). The diagnosis of Lafora disease was made.

DISCUSSION

Lafora disease is a particularly severe form of progressive myoclonus epilepsy (EMP). It was described for the first time by White in 1988 [1]. The LD is ubiquitous, but more common in the Mediterranean region [2]. Its first manifestations occur during adolescence: generalized tonic-clonic or tonic-clonic seizure, action and rest myoclonus, negative myoclonus, but also partial occipital seizures with amaurosis [3]. The skin lesions are rare.

LD is an autosomal recessive disease. Genetic studies have shown clinical variants of the LD, and spectrum should gradually progress to the elucidation of genetic mechanisms. It has been shown that mutations in Exon 1 of the gene EPM2A could produce a different phenotype with an onset in childhood and sometimes

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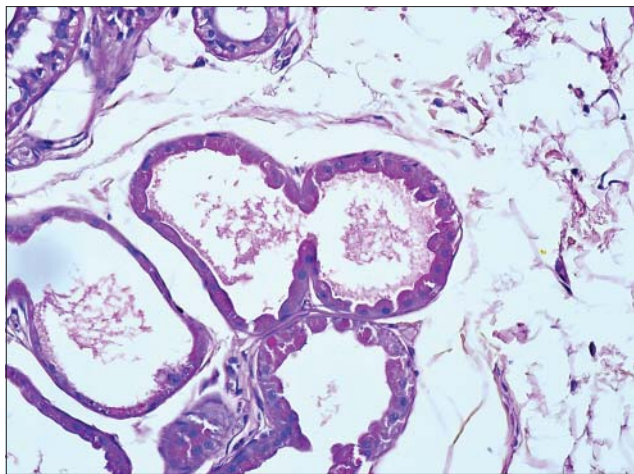


Figure 1: (HEx400) Eosinophilic bodies in the cytoplasm of epithelial cells lining the excretory ducts of apocrine sweat glands.

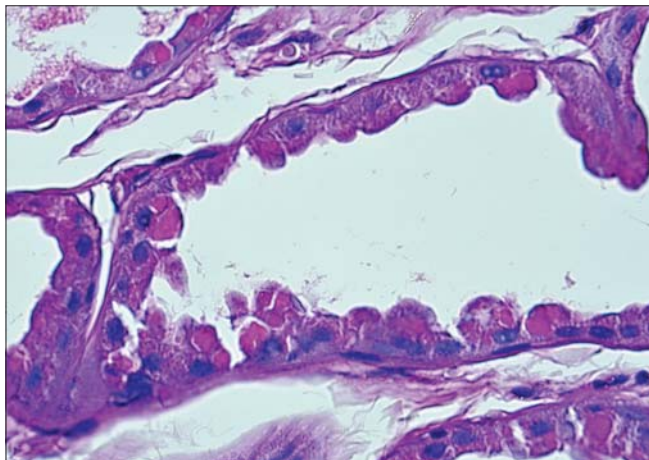


Figure 2: (HEx1000) PAS positive inclusions in the cytoplasm of epithelial cells.

learning difficulties, which are followed later by classic manifestations of the disease [4]. Similarly, EMP2B gene seems to be associated with a slightly longer duration of illness, and a little less severe evolution, independently of the type of mutation or micro deletion observed [5].

The electroencephalogram, which changes may precede the onset of symptoms, initially shows a normal background activity, sometimes slower. In half of the cases there is a diffuse activity polypoints-waves that are sporadic or bursts, spontaneous or provoked by movement or by walking, combined with a gradual slowing of the background rhythm [2]. EEG performed in our patient showed an epileptic encephalopathy. Besides the typical presentation of the disease, there are notable variations that require histological or molecular confirmation.

The role of skin biopsy in the axilla is to confirm the diagnosis of LD. It highlights the Lafora bodies or polyglucosan in the cytoplasm of epithelial cells lining the excretory ducts of apocrine sweat glands. These characteristic PAS positive inclusions are present in several organs such as the brain, heart, liver and skeletal muscle [3]. Lafora bodies are dense polyglucosans and phosphorylated, which resemble to those of normal starch body found in the brains of older people, but their location in the neuron and the dendrites is characteristic of LD. The presence of Lafora bodies in the axillary biopsy in young subjects is pathognomonic of LD. It should however be aware that these characteristic abnormalities may escape some trained eye, and a second reading or new axillary biopsy may be needed [3,6].

Differential diagnoses are discussed in terms of the evolution. At the early stage of the disease, juvenile myoclonic epilepsy or other forms must be discussed. At the status stage the main differential diagnosis is the Unverricht Lundborg disease. However, at the late phase of the LD all EMP etiologies are possible [7].

Drug resistance and psychomotor retardation are limiting factors. Death occurs 2-10 years after the onset with an epilepticus and cachexia [2,5].

CONCLUSION

Lafora disease has significant clinical and evolutionary characteristics. Resistance to antiepileptic and progressive cognitive deterioration should guide the clinician to achieve axillary skin biopsy to find Lafora bodies.

Consent

The examination of the patient was conducted according to the Declaration of Helsinki principles.

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