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Original Research Paper

General Medicine

TOPIC: LAFORA DISEASE-A RARE CASE OF PROGRESSIVE MYOCLONIC EPILEPSY IN AN ADOLESCENT MALE

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KEYWORDS :

INTRODUCTION:

Lafora disease is a rare, genetic disorder of autosomal recessive inheritance characterized by presence of inclusion bodies (Lafora bodies) in the cells of heart, liver, muscle, and skin. It presents as a neurodegenerative disorder causing impairment of cerebral cortical neurons [1]. The disease usually manifests in previously healthy adolescents, and death commonly occurs within 10 years of symptom onset [2]. The two genes known to be involved in Lafora disease are *EPM2A* and *NHLCR1* [3]. Approximately 90% of cases of Lafora disease are caused by mutations in either the *EPM2A* or the *EPM2B* gene, which encode, respectively, a glycogen phosphatase called laforin and an E3 ubiquitin ligase called malin [4] We hereby present a case of 21-year-old male presenting with progressing myoclonus and Lafora bodies in axillary skin biopsy thereby confirming the diagnosis of Lafora body disease.

Case Report:

21 year old male patient present with complains of multiple episodes of brief, sudden, jerky movement of the whole body with progressive decline in cognition since 19 years of age and of born of consanguineous marriage and it was full term normal delivery. No use of drug and radiation exposure during pregnancy. His growth and development were normal with no relevant family history. He was admitted in ICU and started on antiepileptic drugs, Antibiotics. he was already on tablet valproic acid clobazam then started on levetiracetam, lamotrigine phenobarbitone, zonisamide and carba mazepine.

On examination his pulse 102/min, blood pressure was 110/70 mm Hg, systemic examination was normal. Physical examination revealed no swelling, erythema but difficulty in walking independently, dysarthria, behavioral changes.

On routine blood tests Hemoglobin was 13.8 gm/dl TLC 8530 cells per cu mm, platelets 1,39,000 cells per cu mm. Urine analysis shows raised proteins (2+), Pus cells 2-4 per hpf, 15-20 RBCs per hpf and casts, crystals and bacteria were absent. Kidney function and Serum electrolytes were normal. ECG was sinus rhythm. Magnetic resonance imaging(MRI) and electroencephalography were performed .MRI Brain was normal

EEG suggestive of Dys III Bilateral PHR and posteriorly dominant generalized IEDs, Sleep- marked activation, recorded multiple episodes of myoclonic jerks. CECT Chest shows Moderate loculated collections on right side with large air pocket in apical segment of right upper lobe s/o empyema. Progressive neurological deterioration and lack of response to therapy planned for axillary Skin biopsy and was positive for Polyglucosan Bodies suggestive of Lafora Body disease

Image

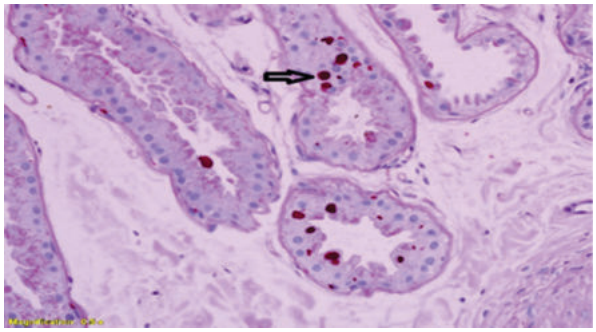

Image 1: Axillary skin biopsy reveals(PAS +) periodic acid-Schiff polyglucosan inclusions (Lafora bodies)

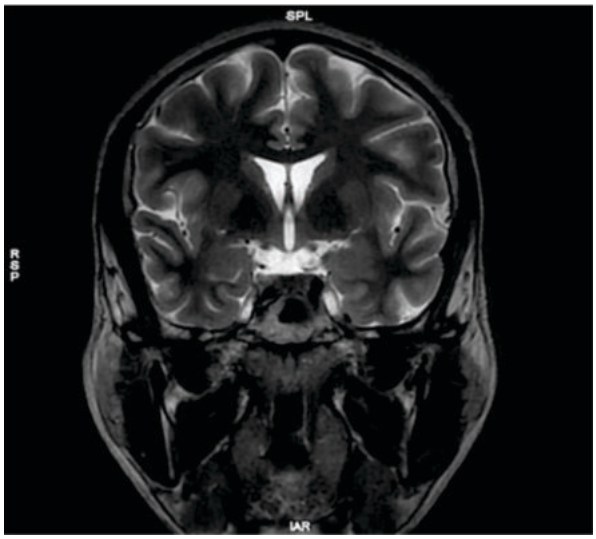

Image 2: Magnetic resonance imaging of brain having normal finding

DISCUSSION

Progressive myoclonus epilepsy (PMEs) belongs to a group of inherited neurodegenerative disorders characterized by progressively worsening myoclonus and epilepsy, variable neurological dysfunction (ataxia, dementia), and possible associated signs and symptoms. LBD is one of the main teenage-onset PMEs [6]. The first symptoms of LBD appear during late childhood or adolescence (range 8–19 years; peak 14–16 years) [6]. The evolution of the disease is often fatal [7], with death commonly occurring within 10 years of symptom onset [2], most commonly due to pneumonia or complications related to degeneration of the nervous system [8]. Most patients are completely normal in childhood, except for early

learning difficulties in some. The early symptoms can include headache, decline in school performance, and convulsive seizures [9, 10]; however, it generally presents with tonic clonic seizures, followed by non-synchronized, rapid, and massive myoclonic jerks in the extremity and mouth. Rapid progressive dementia and global cognitive dysfunction develop 2–6 years after disease onset [5]. Over time, those affected with Lafora disease have brain changes that cause confusion, speech difficulties, depression, decline in intellectual function, impaired judgement, and impaired memory. If areas of the cerebellum are affected by seizures, it is common to see problems with speech, coordination, and balance in patients with Lafora disease [1]. Currently, there is no efficacious treatment that controls the seizures and improves the cognitive decline in this disease [11]. Antiepileptic drugs (AEDs) are partially effective in the treatment of myoclonus and seizures but do not have a major influence on the progression of cognitive and behavioral symptoms [12, 13]. The diagnosis is based on detection of Lafora bodies on apocrine and eccrine sweat gland biopsies [5] and genetic testing. Cranial images may be normal at the beginning, but with disease progression, diffuse atrophy may be seen; EEG is also normal at the beginning, with theta and delta activity appearing with the progression of the disease. Lafora disease diagnosis can be made by detection of polyglucosan aggregates in myoepithelial cells surrounding sweat glands, also called Lafora bodies. However, distinguishing Lafora bodies from normal apocrine cell granules may be difficult, making genetic testing the preferred diagnostic method [14].

CONCLUSION

Axillary skin biopsy being a more convenient, cost effective, minimally invasive, and safer method remains primary diagnostic modality. Axillary skin biopsy is diagnostic as it has a greater number of apocrine and eccrine gland. Despite rare condition, LBD should be considered as differential diagnosis in patients with myoclonic epilepsy progressing to neurological deterioration and cognitive decline with high frequency in first degree marriage.

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Consent

Written informed consent was taken from the patient for publication of this case report and accompanying images.

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