

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/338750304>

Effects of cerebellar transcranial direct current stimulation upon kindled seizures depends upon PPAR γ modulation

Conference Paper · January 2020

CITATIONS

0

READS

15

2 authors:



Michael Pervak

Odessa National Medical University

13 PUBLICATIONS 1 CITATION

SEE PROFILE



Godlevsky L.

Odessa National Medical University

231 PUBLICATIONS 595 CITATIONS

SEE PROFILE

Some of the authors of this publication are also working on these related projects:



Neoangiogenesis in pentuylenetetrazol - kindled rats [View project](#)



PC-based automatic laparoscopic diagnostics [View project](#)

report a case with similar seizure pattern in a patient with structural abnormality.

Findings

A 3-year-old male patient presented to the emergency department with progressing disequilibrium and headache since 1 month before admission. Headache, frequent staring and jerking followed by brief falling were also seen. This was the first onset seizure. Patient had a complete immunization schedule. History of previous illness was denied. Neurological examination showed myoclonic jerks followed by atonia, hence no weakness of the extremities. Routine laboratory findings was unremarkable and electroencephalogram study showed multifocal epileptiform discharges in both frontal region, left parietal and right temporal region. Head MRI with contrast showed multiple cavernoma in both cerebral hemisphere and bilateral lateral periventricle with the diameter of 0.6–2.66 cm. Patient was then discharged on valproic acid and had controlled seizure until now.

Conclusion

Myoclonic astatic seizures is a rare condition with potential genetic cause. This case shows that structural abnormalities might be a cause of similar seizure pattern. Valproic acid is shown to be effective in controlling seizure of this patient.

doi:10.1016/j.jns.2019.10.917

WCN19-0924

Journal of the Neurological Sciences 405S (2019) 104580

Poster Session 2

Wings of fall

S. Dubey^a, V. Ramakrishnan^a, A. Dubey^b, S. Yadalla^a, N. Prabhu^a, T.N. Dubey^c

^aMeenakshi Medical College Hospital and Research Institute, Department of Neurology, Kanchipuram, India

^bSAIMS Medical College and PGI, Neurology, Indore, India

^cGandhi Medical College, Neurology, Bhopal, India

Introduction

Nature of injury in trauma patients is multifactorial with patterned or unpatterned, predictable or unpredictable presentations. Hence basic, routine and customized evaluation of each patient is mandatory.

Case report

A 51 years old male presented with giddiness and fall on uneven hard surfaced ground followed by sudden onset of weakness of both the upper limbs. Weakness was in the form of difficulty to lift both arms above shoulder but intact distal motor activities. He had no headache, loss of consciousness, seizures, lower limb weakness, sensory impairment, bladder/bowel incontinence or other neurological abnormalities.

Observations

On examination, there was proximal muscle weakness of both the upper limbs with weakness of left trapezius and weakness in right serratus anterior muscle with local tenderness in the left scapular region with no sensory impairment with preserved reflexes bilaterally.

We found bilateral winging of scapula due to injury of:

- 1) Long thoracic nerve innervating right serratus anterior causing weakness on the right side, and
- 2) Left spinal accessory nerve innervating trapezius on the left side.

The possible mechanism maybe traumatic compressive nerve injury by ruling out spinal cord, root, plexus injury by imaging and neurophysiological study.

Conclusion

Atypical complex nerve injury usually results either from traction or heavy impact mechanism.

Acute bilateral different types of winging of scapula due to trauma is a rare presentation. Head to foot clinical examination is inevitably essential to reveal hidden, unnoticed problems irrespective of whether the patient is symptomatic or asymptomatic.

doi:10.1016/j.jns.2019.10.918

WCN19-0926

Journal of the Neurological Sciences 405S (2019) 104581

Poster Session 2

Effects of cerebellar transcranial direct current stimulation upon kindled seizures depends upon PPAR γ modulation

M. Pervak, L. Godlevsky

Odessa National Medical University, Biophysics- Informatics and Medical Devices, Odessa, Ukraine

The purpose of the investigation was to estimate the effectiveness of peroxisomal proliferator-activated γ -receptors (PPAR γ) modulation upon the antiseizure effects of transcranial direct current stimulation (tDCS). In rats with the kindling syndrome was induced by i.p. injections of pentylenetetrazol (PTZ; 30.0 mg/kg daily, for three weeks). For tDCS active electrode was located over cerebellar zone of cranium (10 mm²). The latent period of seizures induced by a test injection of PTZ (30 mg/kg) increased significantly (by 22.5% on average $P < .05$ vs. control) after tDCS (600 μ A, 10.0 min, cathode on the skull surface). Such stimulation prevented the development of generalized clonic-tonic seizures in 5 out from 11 rats, and decreased the duration of ictal discharges about two times ($P < .05$). After administration of an antagonist of PPAR γ , bisphenol A diglycidyl ether (2,2'-(1-methylethylidene) bis(4,1-phenyleneoxymethylene)] bis-oxirane, BADGE, 100 mg/kg, i.p.), tDCS did not lead to an increase in the latency of PTZ-induced seizures. The latter parameter was shorter than that in the tDCS group with no injection of the γ receptor antagonist and did not differ from the control. The seizure latency in this case was smaller than that in the tDCS group (by 31.6% on average, $P < .05$), and the seizure severity was greater by 52.3% ($P < .05$). tDCS performed after pioglitazone (50,0 mg/kg, i.p.) administration caused complete prevention of generalized clonic-tonic fits with the absence of seizures in 4 out from 11 rats ($P < .05$). Hence, gained data points on PPAR γ role in the realization of antiseizure effects of cerebellar tDCS.

doi:10.1016/j.jns.2019.10.919