

Pathological Crying as a Manifestation of Right Caudate Nucleus Infarct

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Abstract

Background: Emotional lability is described as stereotypical affective outbursts which is not reflective of internal emotion. We present a case of caudate nucleus infarct presented as pathological crying.

Case Description: A 56 year old man presented with abrupt onset history of pervasive episodes of crying since a week. His brain imaging had shown an acute infarct in right caudate nucleus.

Conclusion: Our patient had episodes of pathological crying due to disruption in subcortical-thalamic-ponto cerebellar network. It is important to note that physicians and psychiatrist should be aware of unusual manifestation of right caudate nucleus infarct as pathological crying.

Keywords: Pathological Crying; Caudate Nucleus; Stroke.

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INTRODUCTION

Emotional lability is defined as stereotypical affective outbursts which is not reflective of internal emotion of patients having neurological damage. This usually results from disruption of the cortico-limbic-subcortical-thalamic-ponto-cerebellar network which is involved in emotional expression and regulation. We report a patient with acute right caudate nucleus infarct presenting with emotional lability in the form of pathological crying spells.

CASE DESCRIPTION

A 56-year gentleman, right-handed and normotensive, without any preceding history of neurological and psychiatric disorder, presented with history of pervasive episodes of crying since one week. The crying episodes start abruptly without any apparent provoking factor, and was inappropriate to the situation, and unable to control it.

On examination patient did not have any

lateralising neuro-deficits. His blood parameters including thyroid profile were within normal limits. His electroencephalogram (EEG) did not show any epileptiform discharges. His MRI brain revealed an area of restricted diffusion in the body of right caudate nucleus (7.1mm x 6.1 mm in size) appearing hyperintense on T2/FLAIR and isointense on T1-suggestive of acute infarct involving the right caudate nucleus. (see fig.). He was treated with Ecosprin 150mg, Escitalopram 10mg, and Atorvastatin 20mg per day. During 3 month follow up he was maintaining well.

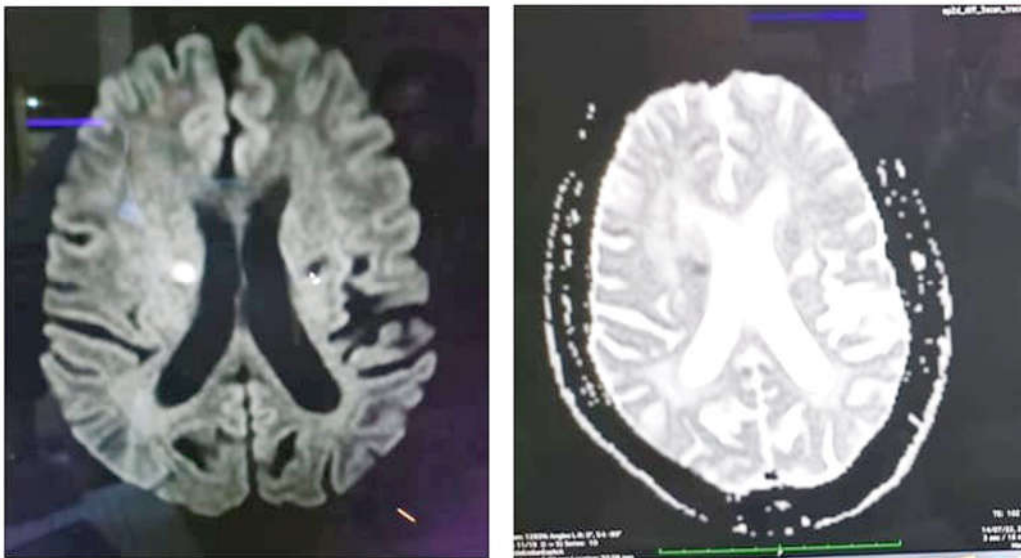


Fig. 1: Small area of diffusion restriction noted in the body of right caudate nucleus with ADC reversal -s/o Acute infarct.

DISCUSSION

Pseudo bulbar affect (PBA) are known by different names, but most widely used terms are emotional lability, emotional incontinence and pathological laughing and crying (PLC). Involuntary emotional expression disorder or IEED has been proposed as a newer terminology. Pseudo bulbar affect occurs due to disparity between an individual emotional experience and his or her emotional expression. Affected individuals will not be able to control their laughter or crying.

Episodes of involuntary laughter or crying first appeared in literature in 1872 by Charles Darwin in patients of neurological diseases.¹ Oppenheim used the term "Pseudo bulbar affect" (PBA) as spasmodic explosive bursts of laughter or weeping.²

The lesions which give rise to this effect are usually situated in subcortical white matter especially the posterior portions of the frontal lobe, basal ganglia and the internal capsule.

Earlier studies suggest that behavioural and cognitive abnormalities are seen as prominent features of caudate vascular lesions.³ Loss of striatal efferent projections from caudate nucleus results in loss of function in cortical zones. Basal ganglio-thalamo-cortical loops crossing occurs in the caudate nucleus. The caudate nucleus connects association cortex, including frontal, parietal and temporal lobes with deeper anatomical structures by cortico-pallido-nigra-thalamic cortical loops.³

Poeck⁴ and Cummings *et al*⁵ have proposed various criterias for diagnosis of pseudo bulbar affects (Table 1)

Table 1: Comparison of Poeck’s Criteria and Cummings Criteria

Poeck Criteria	Cummings Criteria
1. Episodes are inappropriate to the situation, precipitated by non specific stimuli.	1. Episodes are inconsistent with / greatly exaggerated compared with what the patient is feeling.
2. No correlation between emotional expression and how patient is feeling.	2. Paroxysmal quality at onset, often occur in an inappropriate context.
3. Each episode builds up paroxysmally or stepwise, decreases slowly, difficult to control the extent/ duration.	3. " Wait out" period before the patient can return to pre-episode activities.
4. No episodic mood changes corresponding to episodes, no sense of relief as affects expressed.	-

PBA can be seen in multiple neurological diseases including conditions like amyotrophic lateral sclerosis, parkinsons disease, multiple sclerosis, stroke, dementia, and in cerebello pontine angle tumors. It can also be seen in psychiatric disorders with mood or affect disturbance.⁶ However, our patient had no prior psychiatric illness and no other neurological illness except involvement of basal ganglia stroke.

Emotional incontinence in stroke is usually seen when areas like lenticulo-capsular region, basis pontis, medulla oblongata or the cerebellum is involved.

CONCLUSION

We report rare presentation of caudate infarct presenting as pathological cry.

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