Pseudobulbar affect post stroke

Maruzairi H and Koh CH
Department of Psychiatry, School of Medical Sciences, Universiti Sains Malaysia, Kelantan, Malaysia

ABSTRACT

Pseudobulbar affect (PBA) is a disorder characterised by uncontrolled outburst of laughing or crying that lack of an appropriate environmental trigger and may be exaggerated or incongruent with the underlying emotional state. PBA symptoms are common among patients with neurological conditions due to dysfunction in the cortico-pontine-cerebellar circuit. In view of the common features shared by PBA and depression, it is often not recognised in a general medical setting and may be misdiagnosed as depression. Early recognition of PBA by using specific diagnostic criteria will help to improve patient's quality of life.

Keywords: Cerebrovascular accident, stroke, pseudobulbar affect

INTRODUCTION

Pseudobulbar affect (PBA) is a disorder of affect that is characterised by uncontrolled outburst of laughing or crying that lack of appropriate environmental trigger, and may be exaggerated or incongruent with the underlying emotional state. PBA and other disorder of affect are not included in DSM-based diagnostic criteria or International Classification of Disease coding system. PBA symptoms are common among patients with neurological conditions. A clinic-based study reported that 36.7% of 5,290 patients had symptoms suggestive of PBA. [1]

The pathophysiology of PBA has not been fully understood. It was suggested that PBA symptoms arise from a widely dispersed neural network involving the frontal, parietal and brainstem regions while another theory involve dysfunction in the cortico-pontine-cerebellar circuit. Serotonin may be involved, through its role in the diffuse cortico-limbic networks involve in emotion, or via serotonergic neurotransmission in the cerebellum. Glutamate dysregulation is another important pathophysiology. [2]

PBA was found to significantly impair patient's social and occupational functioning. It is an added burden to the already considerably disabled patient. It reduced the patient's quality of life; PBA episodes are usually embarrassing to the patient as well as the carer, it cause disability is social situation, and increase the risk of depression and anxiety. [3]

In view of the great impact of PBA on

Correspondence author: Maruzairi HUSAIN
Department of Psychiatry, School of Medical Sciences, Universiti Sains Malaysia,
16150 Kubang Kerian, Kelantan, Malaysia
Tel: 609 7676710, Fax: 609 7659057
E mail: drzairi@usm.my

patient, the treatment is imperative. Treatment for PBA mainly involve modulation of serotonergic and glutaminergic neurotransmission. Antidepressants including tricyclic antidepressants (TCAs) and selective serotonin reuptake inhibitors (SSRIs) were used as the off-label medications until Dextromethorphan/quinidine (DMQ) received the approval from FDA for the treatment of PBA. [4]

CASE REPORT

A 65-year-old man was known to have diabetes mellitus and hypertension, with associated long-term complications (ischaemic stroke twice in the past four years and right lower limb amputation due to infected diabetic foot ulcer) was referred to psychiatry unit after being admitted to medical ward for uncontrolled diabetes, as he was noted to have intermittent uncontrolled crying episodes.

Since his second stroke in November 2012, the patient has been having intermittent crying spells at almost daily basis which occurred without apparent triggers and would remit spontaneously. It was initially mild and less frequent, but it slowly increases in frequency and intensity. The crying spells appeared very spontaneously and were unpredictable. He could not state the reason for this emotional outburst and aware that on many occasions, cried in situations that were inappropriate (crying when watching comedy drama in the television). He would also cry in the middle of a conversation of which nothing sad was mentioned. He once in a while would also laugh for no apparent reason, but this problem did not occur frequently and was dismissed by the patient. He denied symptoms of depression, mania, anxiety or psychosis. His wife did not notice any deterioration of memory that 'out of keeping' with his age.

Examination revealed spontaneous crying episodes that remitted spontaneously. His speech was slurred, but relevant and not dysphasic. He claimed to be euthymic, but the affect was inappropriate and labile. No hallucinatory behaviour. He appeared frail, with bilateral symmetrical mild upper and left lower limb weaknesses. He had cardiomegaly, with bilateral mild pitting pedal oedema. Examinations of other systems were grossly normal.

Mental state examination was normal and Elderly Cognitive Assessment for elderly (ECAQ) was used for cognitive assessment and he scored 8/10. Clock Drawing Test (CDT) was 4/4. The diagnosis of PBA was made and he was started on sertraline 25mg once daily.

DISCUSSION

Depression is the most common misdiagnosis for PBA. [3] In fact, our patient was initially referred for treatment of depression. Failure to recognise PBA in a busy general medical setting is understandable in view of the common features shared by the two different conditions. However, there are many clinical features are helpful to distinguish the two conditions. Crying in depressive episodes usually last for weeks or months whereas in PBA, crying usually last for only seconds to minutes. Crying in PBA is usually unrelated or incongruent to the underlying mood. Other symptoms of depression such as fatigue, anorexia, insomnia, anhedonia, hopelessness and guilt are usually absent in PBA. However, coexistence of depression and PBA will understandably complicate the picture. [2]

Cumming *et al.* had suggested a set of diagnostic criteria for PBA, named as the Involuntary Emotional Expression Disorder. [5] The proposed criteria consist of Essential criteria and Supportive criteria. The essential criteria is the patient experience episodes of involuntary or exaggerated emotional expression that result from a brain disorder, including episodes of laughing, crying, or related emotional displays;

- Episodes represent a change in the patient's usual emotional reactivity, are exaggerated or incongruent to the patient's subjective emotional state, and are independent or in excess of the eliciting stimulus.
- Episodes cause clinically significant distress or impairment in social or occupational functioning.
- The symptoms cannot be attributed to another neurological or psychiatric disorder or to the effects of a substance.

Supportive criteria include:

- Patient may experience the accompanying autonomic changes like flushing of face, and pseudobulbar signs like increase jaw jerk, exaggerated gag reflex, tongue weakness, dysarthria, and dysphagia.
- Patient may exhibit a proneness to anger.

Our patient fulfilled all the Essential criteria and he also exhibited some pseudobulbar signs like dysarthria. Further closer neurological examination might reveal more signs.

Treating PBA symptoms will reduce distress which leads to improvement in the patient's quality of life. Besides medication, psychoeducation to the patient, the main carer and children are crucial. As education improves their understanding of illness as well as compliance, they will be better equipped to handle various situations that might arise out of the illness. That is why the importance of family support in his rehabilitation and recovery is emphasised to the children or family members.

REFERENCE

1: Benjamin RB, David C, Jonathan F, et al. PRISM: A Novel Research Tool to Assess the Prevalence of Pseudobulbar Affect Symptoms across Neurological Conditions. PLoS ONE; 8:e72232, 2013.

2: Miller A, Pratt H, Schiffer R. Pseudobulbar affect: the spectrum of clinical presentations, etiologies and treatment. Expert Rev Neurotherapeutics, 2011; 11:1077-88.

3: Roy ES, Michael SS, Michael SO, et al. Pseudobulbar affect: prevalence and quality of life impact in movement disorders. J Neurol. 2010; 257:1382–7.

4: Erik PP. Current concepts in the pharmacotherapy of pseudobulbar. Affect Drugs 2011; 71:1193-207.

5: Cumming JL, Arciniegas DB, Brooks BR, et al. Defining and diagnosing involuntary emotional expression disorder. CNS Spectr. 2006; 11:1-7.