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PSYCHIATRIC MANIFESTATION AS PART OF PSEUDOBULBAR AFFECT IN POST-STROKE PATIENTS – CASE REPORT

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CASE REPORT **OPEN ACCESS**

ABSTRACT

Introduction: Pseudobulbar affect (PBA) is a neurological disorder characterized by involuntary episodes of laughing or crying that are incongruent with emotional state. This condition is frequently underrecognized after stroke and may significantly impair quality of life, particularly in settings where first-line pharmacological therapy is unavailable.
Methods: We report a case of a 53-year-old woman with a history of ischemic stroke who developed recurrent episodes of uncontrollable laughter and crying for five years. Clinical assessment included CNS-LS, PLACS, and MADRS scores, with follow-up conducted after pharmacological management.
Results: During follow-up, a gradual reduction in the frequency and intensity of emotional outbursts was observed after treatment with sertraline. Improvement in depressive symptoms occurred alongside the reduction of pseudobulbar affect episodes. This therapeutic response represents an individual clinical observation rather than evidence of treatment efficacy.
Discuss: This case highlights the clinical relevance of recognizing pseudobulbar affect in post-stroke patients and suggests that SSRIs may be considered as an alternative option in resource-limited settings.
Conclusion: Careful clinical evaluation of emotional dysregulation after stroke is essential. Observational improvement in this case underscores the importance of accurate diagnosis and highlights the need for further studies to establish effective management strategies for pseudobulbar affect.

Keywords: pseudobulbar affect, stroke, antidepressant.

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INTRODUCTION

Pseudobulbar affect (PBA) is characterized by episodes of involuntary and inappropriate laughing and/or crying that are disproportionate or incongruent with the individual's underlying emotional state.[1,2] These episodes result from a disruption between emotional experience and motor expression, leading to significant psychosocial distress and impaired quality of life.

PBA is most frequently observed in individuals with neurological conditions that affect cortical and subcortical structures, including amyotrophic lateral sclerosis, Parkinson's disease, multiple sclerosis, traumatic brain injury, Alzheimer's disease, and cerebrovascular accidents.[3] Stroke-related PBA is particularly underrecognized and often misdiagnosed as a primary mood disorder, resulting in delayed or inappropriate treatment.

Persistent emotional dysregulation may cause embarrassment, social withdrawal, and functional decline, increasing the risk of secondary psychiatric conditions such as anxiety and depression.[4] Early recognition and appropriate intervention are therefore essential to improve patient outcomes.

METHOD

Presented the case of a 53-year-old female with a history of ischemic stroke who developed recurrent episodes of uncontrollable laughing and crying for approximately five

years. The patient was referred to the Psychiatrist due to persistent emotional dysregulation that significantly impaired her social and occupational functioning.

This case report was conducted with institutional permission obtained from UKRIDA Hospital through formal administrative approval procedures. Verbal informed consent was obtained from the patient, and all identifying information was anonymized.

CASE REPORT

A 53-year-old woman presented to the psychiatric outpatient clinic with complaints of recurrent, sudden episodes of uncontrollable laughter and crying that were incongruent with her emotional state. These episodes had persisted for approximately five years and caused significant embarrassment, frustration, and functional impairment. The patient reported avoiding social interactions and ceasing work due to fear of social stigma.

Five years prior, the patient had suffered an ischemic stroke resulting in right-sided weakness, attributed to poorly controlled hypertension and diabetes mellitus. Neuroimaging results from the initial stroke episode were not available at the time of psychiatric evaluation, as the patient was referred several years after the cerebrovascular event.

On psychiatric evaluation, the patient appeared distressed, with frequent episodes of sudden laughter interrupting her speech. Mood examination revealed depressive features. The Montgomery–Åsberg Depression Rating Scale (MADRS) score was 32, indicating moderate depression. Assessments using the Center for Neurologic Study–Lability Scale (CNS-LS) and the Pathological Laughter and Crying Scale (PLACS) yielded scores of 28 and 30, respectively, both exceeding diagnostic thresholds for pseudobulbar affect.

Pharmacological treatment was initiated with sertraline 25 mg once daily and clobazam 5 mg once daily. After one week of treatment, the patient reported a reduction in the frequency of emotional outbursts. Sertraline was increased to 50 mg daily in the third week, and clobazam was discontinued.

During follow-up, the patient reported excessive daytime drowsiness that interfered with her morning activities after initiating clobazam. Following discontinuation of clobazam, the patient reported improved alertness and functional ability during the morning.

After one month of treatment, both the intensity and frequency of emotional outbursts decreased significantly. At two months, the episodes had resolved, with laughing and crying occurring only in appropriate emotional contexts. MADRS scores improved to 10 at two months and 0 at three months.

RESULT

Following pharmacological management, the patient demonstrated a progressive reduction in the frequency and intensity of emotional outbursts. Within the first week of treatment, episodes of uncontrollable laughing and crying occurred less frequently. After dose escalation of sertraline and discontinuation of clobazam, further improvement was observed.

By the second month of follow-up, pseudobulbar affect episodes had resolved, with emotional expression occurring only in appropriate social and emotional contexts. Depressive symptoms also improved significantly, reflected by a reduction in MADRS scores from 32 at baseline to 10 at two months and 0 at three months.

The patient reported improved daily functioning, including resuming morning activities and social interactions. Follow-up was conducted regularly by the psychiatrist, with coordination involving the general practitioner to monitor symptom recurrence and medication tolerance.

At the 18-month follow-up, the patient remained clinically stable. Due to temporary limitations in medication availability and sustained symptom remission, sertraline was gradually tapered after one year of treatment. However, upon reaching a dose of 12.5 mg, the patient reported recurrence of involuntary laughing episodes. Sertraline was subsequently increased to 25 mg daily, resulting in the resolution of symptoms. At the time of manuscript preparation, the patient continues treatment with sertraline 25 mg daily and remains clinically stable.

DISCUSS

Poeck described four key criteria for diagnosing pseudobulbar affect: emotional responses inappropriate to context, incongruity between emotional experience and expression, lack of voluntary control over episodes, and absence of emotional relief following episodes.[5] The patient in this case fulfilled all four criteria.

Validated instruments such as the CNS-LS and PLACS are useful for quantifying symptom severity and supporting diagnosis.[6,7] In this case, both scales exceeded established diagnostic cut-off points, strengthening the clinical diagnosis of PBA.

The behavioral pattern observed in this patient, characterized by sudden and stimulus-incongruent episodes of laughing and crying, is consistent with the clinical features of pseudobulbar affect. Although neuroimaging data were unavailable, previous studies have suggested that pseudobulbar affect may arise from disruption of neural circuits involved in emotional regulation, particularly cortico-ponto-cerebellar pathways. Dysfunction within these networks may impair modulation of emotional expression, resulting in exaggerated or involuntary affective responses that are incongruent with the patient's subjective emotional state.[5,8,9,10]

The elevated baseline MADRS score in this patient raises important considerations regarding the differentiation between pseudobulbar affect and primary depressive disorder. In this case, depressive symptoms were likely reactive in nature, emerging in response to chronic emotional dysregulation, social embarrassment, and functional impairment caused by longstanding pseudobulbar affect. The phenomenology of the patient's emotional outbursts—characterized by sudden, stimulus-incongruent laughing and crying—was more consistent with pseudobulbar affect than with mood-congruent depressive affect.

Improvement in depressive symptoms occurred in parallel with the reduction of pseudobulbar affect episodes. This temporal association may reflect alleviation of psychosocial distress as emotional regulation improved, as well as the antidepressant effect of sertraline. However, given the single-case nature of this report, the relative contribution of mood improvement versus direct modulation of pseudobulbar affect symptoms cannot be clearly disentangled and should be interpreted cautiously.

Although the exact pathophysiology of PBA remains unclear, current evidence implicates dysfunction of cortico-ponto-cerebellar circuits involved in emotional regulation. Damage to these pathways disrupts the cerebellum's modulatory role, resulting in exaggerated or inappropriate emotional expression.[5,8,10] Abnormalities in serotonergic, dopaminergic,

and glutamatergic neurotransmission further contribute to symptom development.[8,9]

The FDA-approved treatment for PBA is the combination of dextromethorphan hydrobromide and quinidine sulfate, which modulates glutamatergic and sigma-1 receptor activity.[11,12] However, this medication is not available in Indonesia, necessitating alternative therapeutic strategies.

Antidepressants, particularly selective serotonin reuptake inhibitors, have demonstrated efficacy in reducing PBA symptoms by enhancing serotonergic neurotransmission. Compared with tricyclic antidepressants, SSRIs offer a more favorable side-effect profile, especially in older adults.[13,14] In this patient, the use of sertraline was associated with improvement in both pseudobulbar affect episodes and comorbid depressive symptoms, supporting its utility as a practical treatment option in resource-limited settings.

CONCLUSION

Pseudobulbar affect is an underrecognized complication of stroke that may significantly impair quality of life. In settings where dextromethorphan–quinidine is unavailable, SSRIs may be considered as an alternative therapeutic option. Clinical improvement observed in this case, including sustained stability at long-term follow-up, should be interpreted cautiously and highlights the need for further studies to better establish effective management strategies for pseudobulbar affect.

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