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CASE REVIEW

Joker's Laughter Complex or Pseudobulbar Affect?

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ABSTRACT

This article begins with a case of a 10-year-old autistic child, who exhibits unpredictable laughter for no obvious reason, to the embarrassment of his parents, especially when the family is in the public area. What is known as the Joker's Laughter Complex - a form of psychological complex - is a rarely understood condition of pseudobulbar affect (PBA).

Keywords: *Center for Neurologic Study Lability Scale, Joker's Laughter Complex, Pseudobulbar Affect, Psychological Complex*

1. INTRODUCTION - A CASE OF THE UNEXPECTED LAUGHTER

In the heart of a bustling city, there was a small, vibrant park that filled with laughter and joy every weekend. On this particular Saturday, the park was alive with the cheerful hum of families enjoying the sunny weather. The air was filled with the scent of blooming flowers and freshly cut grass, and the sounds of children playing echoed from every corner.

Mr and Mrs Xu, parents to 10-year-old Max Xu, decided to take advantage of the beautiful day and visit the park. Max, who was autistic, had always loved the outdoors and the park was his favorite place to explore. He had a curious mind and a fascination with everything around him - especially the ducks in the pond. Max's parents were excited to see him play and interact with his surroundings. They carefully packed a picnic basket, bringing along Max's favorite snacks and a new book about ducks he had been eagerly waiting to read.

As the Xu family settled on a cozy blanket under a large oak tree, Max wandered off to the pond, his face glowing with excitement. He loved watching the ducks paddle around and could spend hours just observing them.

However, as Max approached the edge of the pond, something unexpected happened. He began to giggle uncontrollably, his laughter bursting out with a surprising intensity. Mr and Mrs Xu, initially taken aback, exchanged worried glances. Max's laughter was not just a response to something funny. It was as if it was coming from somewhere deep within him, unbidden and unrelenting.

Pseudobulbar affect (PBA), a condition Max had been identified and diagnosed by a psychiatrist at a public hospital, sometimes caused him to experience sudden, intense bursts of laughter or crying that were out of proportion to his feelings, and "laughed at a time others might deem inappropriate" (Brown, 2024, para. 1). It was a part of his condition that his parents were still learning to navigate, and it often happened in moments that felt out of their control.

As Max continued to laugh, the sounds drew the attention of other park-goers. Parents glanced over with puzzled looks, and children stopped playing to stare. Max's laughter grew louder, and Mrs Xu could see that people were starting to notice more and more. Some people whispered to each other, while others simply stared, unsure of what was happening.

Mr Xu approached Max with a gentle but concerned expression, trying to calm him. "*Hey, Max, are you okay?*" he asked, his voice steady but filled with worry. Max looked up at his father, his laughter momentarily subsiding. He tried to explain, but his words came out between bursts of giggles. "*I … I don't know why … it just happens …*"

Mrs Xu knelt beside the child, feeling a mix of embarrassment and concern. She tried to reassure Max, but her heart ached seeing him so distressed while everyone watched. She could feel the eyes of strangers on her, and it was hard to ignore the growing sense of discomfort. The child's mother said softly, "*Max dear, it's okay. Sometimes our emotions just get a little mixed up. Let's take a deep breath and go back to the blanket.*"

The child nodded, still giggling a little but clearly relieved by his parents' calm presence. With their support, Max managed to regulate his laughter enough to walk back to the blanket.

The family sat together, trying to enjoy their picnic despite the earlier disruption. Mr and Mrs Xu explained to Max that sometimes people did not understand what was happening, and that was alright. The parents reassured the child that it was alright to have these moments and that they would always be there to support him.

As the day went on, Max's laughter subsided, and he was able to enjoy the park with his parents and the ducks once more. His parents learned to navigate these unexpected moments with patience and understanding, knowing that Max's condition was a part of who he was. And - while the experience had been challenging, it also reinforced their commitment to being there for Max through every high and low.

By the end of the day, as they packed up to head home, Max looked up at his parents with a smile. "*Thank you, Papa, Mama,*" he said, his voice steady now. "*I had a great day*."

Mr and Mrs Xu smiled back, their hearts full. They knew that while there would be more challenges ahead, their love and support would always help Max find his way through, no matter where the laughter - or tears - might take them.

2. THE JOKER'S LAUGHTER COMPLEX

The above story illustrates a condition that can happen to atypically developed children, adolescents and even adults who just laugh uncontrollably and/or inappropriately in any context (Brown, 2024). Known as the Joker's Laughter Complex (JLC), which is a form of psychological complex[1] (Jung, 1933), the character Joker - created by Bill Finger, Bob Kane, and Jerry Robinson in the DC Comics - is portrayed as a super-villain. The Joker's character made his first appearance in the inaugural issue of Batman on April 25, 1940. As a criminal mastermind, the character is the polar opposite of Batman in both personality and appearance. Initially introduced as a psychopathic character with a twisted, sadistic sense of humor, the Joker was re-imagined as a comical prankster in the late 1950s due to Comics Code Authority regulations. However, the character of Joker returned to his darker, more sinister nature in the early 1970s.

According to Carl Jung (b.1875-d.1961), a psychological complex is a cluster of related thoughts, feelings, and memories that are organized around a central theme or experience, often stemming from unconscious material (Jung, 1933). These complexes are emotional and psychological structures that can influence an individual's behavior, perceptions, and interactions. They arise from personal experiences and are typically rooted in unresolved conflicts or significant life events. Jung (1933) believed that complexes operate outside of conscious awareness and can affect one's thoughts and actions in powerful ways, often causing emotional distress or influencing decisions and relationships.

This psychological condition of Joker's Laughter Complex (JLC) is similar to another condition known as Pseudobulbar affect (PBA), which is a neurological condition characterized by uncontrollable episodes of laughing or crying that are disproportionate or inappropriate to the situation. In this paper, the authors use the two terms JLC and PBA interchangeably as the same condition. These emotional outbursts are involuntary and do not match an individual's actual feelings. Pseudobulbar Affect (PBA) was first coined by Hermann **Oppenheim, a prominent German neurologist,** in 1911 (cited in Goldin, 2020) to describe "spasmodic explosive bursts of laughter or weeping" (Brooks et al., 2013, para. 6) "and various other terms have been used to describe its symptoms" (Goldin, 2020, p. 15). The abnormal condition often occurs in people with certain neurological conditions or brain injuries, where the ability of the brain to control emotional expression is disrupted. According to Moore et al. (1997), "[A]long with depression many patients with amyotrophic lateral sclerosis (ALS; Black, 1982; Davison & Kelman, 1939; McDonald et al., 1994) have sudden outbursts of uncontrollable laughter or tearfulness known variously as affective or emotional lability, pseudobulbar emotionality, or pathological laughter and crying. Such outbursts can occur spontaneously or in response to provocative stimuli such as questions or events" (p. 89).

3. KEY SYMPTOMS OF PSEUDOBULBAR AFFECT (PBA)

The primary symptoms of PBA are (i) sudden and unpredictable episodes of laughing, crying, or both (Brooks et al., 2013); (ii) these outbursts can occur without any trigger or may be out of proportion to the stimulus that caused them (Brown, 2024); and (iii) the laughing or crying episodes are usually brief but can be distressing and socially disruptive (Goldin, 2020; also see Figure 1 for the symptomatological representation of PBA). It is crucial to take note that PBA does not reflect an individual's true emotional state. For instance, a child might cry when s/hey is not sad or laugh in a situation that is not funny.

[1] Jung (1921, 1933) highlighted the crucial role of the unconscious in shaping personality. He suggested that the unconscious is composed of two layers. The first layer, known as the personal unconscious, closely parallels Freud's concept of the unconscious. This personal unconscious encompasses both forgotten information and repressed memories, which influence an individual's psychological complexes and overall behavior.

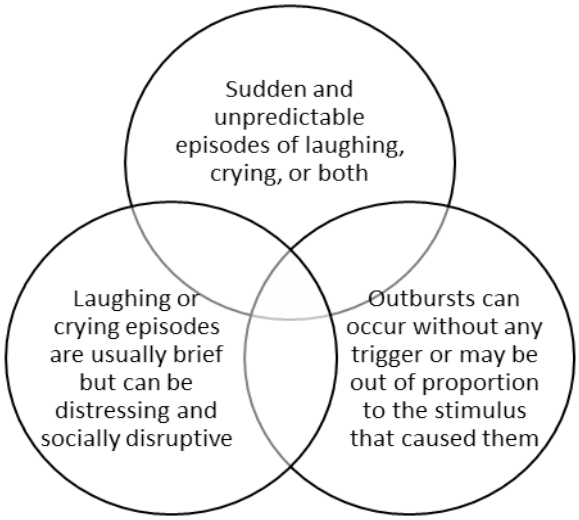

Figure 1. Symptomatology of Pseudobulbar Affect (PBA)

4. ANY RELATION TO AUTISM SPECTRUM DISORDER (ASD) AND PSYCHOSIS?

PBA is distinct from psychiatric conditions like autism spectrum disorder (ASD) and psychosis (King & Reiss, 2013). However, it can coexist with these two conditions, often leading to a diagnostic confusion and even misdiagnosis. Individuals with ASD do exhibit sudden laughter or crying without any link to the immediate context and often parents and teachers wonder what could have trigger that unexplained behavior. ASD, a developmental disorder, involves challenges with social interaction, communication, and repetitive behaviors but does not inherently include uncontrollable emotional outbursts like those seen in PBA. Regardless, autistic individuals may display unusual emotional responses, which could be mistaken for PBA.

Psychosis, characterized by a disconnection from reality, may include emotional disturbances, but these are typically linked to delusions or hallucinations. In contrast, PBA is strictly related to neurological disruption rather than a break with reality. However, when PBA occurs in individuals with conditions like multiple sclerosis, traumatic brain injury, or stroke, it can sometimes be misinterpreted as a psychiatric issue.

5. HOW IS PSEUDOBULBAR AFFECT (PBA) FORMALLY ASSESSED?

Assessing PBA involves a careful neurological evaluation to distinguish it from psychiatric disorders. Tools like the Center for Neurologic Study-Lability Scale (CNS-LS; Moore et al., 1997) are used to quantify the frequency and severity of the episodes. The CNS-LS has been validated in amyotrophic lateral sclerosis (ALS) and multiple sclerosis (MS) patient populations (Moore et al., 1997; Smith et al., 2004). Recently, a Chinese translation of the assessment tool has been made available by Chen et al. (2024). In addition, it is important to have a detailed history of the patient's medical background, including any neurological disorders or brain injuries, is crucial for an accurate diagnosis. Additionally, input from family members or caregivers can provide valuable context regarding the nature and impact of the episodes.

5.1 Treatment for Pseudobulbar Affect

Generally, the treatment for PBA involves medication. The most commonly prescribed drugs are dextromethorphan/quinidine (Nuedexta), which is specifically approved for PBA, and antidepressants such as selective serotonin reuptake inhibitors (SSRIs) or tricyclic antidepressants (TCAs). These

medications help to regulate neurotransmitter activity in the brain to reduce the frequency and intensity of emotional outbursts. Non-pharmacological approaches, such as behavioral therapy, psychotherapy and counseling, may also be beneficial, particularly in helping individuals and their families manage the social and psychological effects of PBA.

6. CONCLUSION

PBA can significantly impact quality of life, but with proper diagnosis and treatment, individuals can often achieve better control over their emotional responses.

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8. COMPETING INTERESTS

Authors have declared that no competing interests exist

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