



Childhood Craniopharyngioma: Understanding Excessive Daytime Sleepiness

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DESCRIPTION

Childhood Craniopharyngioma (CC) is a rare type of brain tumor that affects the pituitary gland, a small gland located at the base of the brain. While treatment advancements have improved survival rates, patients often face long-term consequences, one of which is increased daytime sleepiness.

Understanding childhood craniopharyngioma

Childhood craniopharyngioma typically arises near the pituitary gland, exerting pressure on surrounding brain structures. As a result, it can disrupt hormonal regulation, leading to a unlimited of complications. Common symptoms include headaches, vision problems, hormone imbalances, and cognitive impairments. Treatment often involves surgery, radiation therapy, or a combination of both, aiming to remove or shrink the tumor while preserving neurological function.

Daytime sleepiness in childhood craniopharyngioma patients

Daytime sleepiness is a prevalent issue among childhood craniopharyngioma survivors, even years after treatment.

Hypothalamic damage: The tumor's proximity to the hypothalamus, a vital brain region responsible for regulating sleep-wake cycles, can lead to damage or dysfunction. Disruption of hypothalamic pathways may impair the brain's ability to maintain a healthy sleep pattern, resulting in excessive daytime sleepiness.

Hormonal imbalance: Craniopharyngioma often interferes with hormone production and secretion, particularly those related to sleep regulation, such as melatonin and cortisol. Hormonal imbalances can disrupt the body's circadian rhythm, causing sleep disturbances and excessive daytime sleepiness.

Neurological sequelae: Surgical intervention and radiation therapy aimed at treating craniopharyngioma can cause neurological sequelae, including cognitive deficits, mood

disorders, and sleep disturbances. These complications may exacerbate daytime sleepiness and reduce overall quality of life.

Impacts of daytime sleepiness

The consequences of increased daytime sleepiness extend beyond mere fatigue. Patients may experience:

Impaired cognitive function: Daytime sleepiness can impair cognitive function, including attention, memory, and problem-solving skills. Children may struggle academically, while adults may face challenges at work or in daily activities.

Reduced quality of life: Persistent fatigue and daytime sleepiness can significantly impact quality of life, leading to mood disturbances, social withdrawal, and decreased participation in recreational activities.

Safety risks: Excessive sleepiness poses safety risks, particularly when driving or operating machinery. Impaired alertness increases the likelihood of accidents, endangering both patients and others.

Management of daytime sleepiness

Managing daytime sleepiness in childhood craniopharyngioma patients requires a multidisciplinary approach:

Hormone replacement therapy: Addressing hormonal deficiencies through hormone replacement therapy can help restore normal sleep-wake cycles and alleviate daytime sleepiness. Melatonin supplements may also be prescribed to regulate sleep patterns.

Behavioral interventions: Implementing good sleep hygiene practices, such as maintaining a consistent sleep schedule, creating a favorable sleep environment, and avoiding stimulants before bedtime, can improve sleep quality and reduce daytime sleepiness.

Cognitive-Behavioral Therapy for Insomnia (CBT-I): Cognitive-behavioral therapy for insomnia facilitates in treating sleep disturbances associated with childhood craniopharyngioma. By

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Received: 01-Mar-2024, Manuscript No. JTRR-24-25363; **Editor assigned:** 04-Mar-2024, JTRR-24-25363 (PQ); **Reviewed:** 18-Mar-2024, QC No. JTRR-24-25363; **Revised:** 25-Mar-2024, Manuscript No. JTRR-24-25363 (R); **Published:** 01-Apr-2024, DOI: 10.35248/2684-1614.24.9:214

Citation: Chen C (2024) Childhood Craniopharyngioma: Understanding Excessive Daytime Sleepiness. J Tum Res Reports. 9:214.

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addressing maladaptive sleep behaviors and cognitive patterns, CBT-I helps patients develop healthier sleep habits and manage daytime sleepiness effectively.

Medication: In some cases, stimulant medications may be prescribed to improve wakefulness and combat excessive daytime sleepiness. However, their use should be carefully monitored to minimize potential side effects and dependency.

Increased daytime sleepiness is a common and challenging issue faced by childhood craniopharyngioma survivors.

Understanding its underlying mechanisms and implementing appropriate management strategies are potential for improving patients quality of life and reducing associated risks. By addressing hormonal imbalances, optimizing sleep hygiene, and utilizing therapeutic interventions, healthcare providers can help patients effectively manage daytime sleepiness and lead fulfilling lives beyond cancer treatment.