

Case Report

Carboplatin-induced reversible ptosis

Mary Stephen¹, P. Jayasri²

¹Department of Ophthalmology, Sri Venkateswara Medical College and Research Institute, ²Department of Ophthalmology, Indira Gandhi Medical College and Research Institute, Puducherry, India.



*Corresponding author:

Dr. Mary Stephen,
Assistant Professor,
Department of Ophthalmology,
Sri Venkateswara Medical
College and Research Institute,
Puducherry, India.

stephen6752@gmail.com

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ABSTRACT

Neurological side effects have been reported with various chemotherapy drugs, especially platinum derivatives. Ptosis is one such complication which is rarely encountered. We report a case of ptosis and its complete recovery, which had a temporal relation to carboplatin, a platinum-based chemotherapeutic agent. A 48-year-old male patient with colon cancer on carboplatin noticed drooping of the right eyelid after the second cycle of treatment, which worsened gradually in three weeks. Detailed ophthalmological and neurological evaluation was carried out, and no significant association was made. Onset of ptosis correlated with treatment of carboplatin and on reviewing existing literature available diagnosis was made. Over the course of four weeks, the ptosis gradually resolved completely once the carboplatin treatment cycle was completed without the need for surgical intervention. This case highlights the importance of identifying carboplatin as the cause of ptosis and the potential of platinum-based compounds leading to neurological effects. Prompt recognition can lead to complete resolution.

Keywords: Ptosis, Carboplatin, Chemotherapy, Platinum compounds, Reversible

INTRODUCTION

Platinum-based chemotherapy agents are widely used in the treatment of malignancies such as colon, ovarian, lung, and testicular cancers. Carboplatin and oxaliplatin are two commonly used in the group. Most chemotherapy agents have various side effects, including few serious effects, and platinum compounds have been reported to cause hematological, gastrointestinal, and neurological toxicities.^[1] Ptosis is a rare neurological adverse effect of certain platinum-based chemotherapeutic agents. We present a case of ptosis occurring as a side effect of carboplatin with complete resolution in a patient with colon cancer.

CASE REPORT

This is a case of a 48-year-old male with the adenosquamous type of colon cancer involving a sigmoid colon on chemotherapy treatment with carboplatin. There were no other systemic comorbidities for the patient. The patient was planned for three cycles of chemotherapy, and the regimen includes carboplatin and 5-fluorouracil. He completed his first cycle of treatment without any noticeable adverse effects. However, after receiving his second cycle of carboplatin, the patient noticed a gradual drooping of his right upper eyelid without any eye pain and diplopia. Visual acuity of both eyes was 6/6 (Snellen's) without any correction, with full and free extraocular movements. Corneal sensations were intact, and pupillary reactions were brisk. Drooping of the right upper lid was noted, covering 4 mm of cornea with levator palpebrae superioris function of 7 mm, palpebral fissure height was 6 mm, margin reflex distance (MRD) 1 is 1 mm, MRD 3 is

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5 mm, and intact Bell's phenomenon. No evidence of ocular muscle weakness, abnormal fatigability, or other neuro-ophthalmic abnormalities was noted on detailed examination. No other systemic features of toxicity were noted. Computed tomography of the brain was done, and no significant lesion was noted. Ice pack test was negative, and electromyography was not done due to non-availability. Given the temporal relationship between carboplatin administration and the onset of ptosis, a diagnosis of carboplatin-induced ptosis was suspected. The patient was educated about the reversible nature of drug-induced ptosis, and the carboplatin treatment cycle was completed.

After treatment completion, in six weeks' time, the ptosis gradually improved, and complete resolution was noted with improvement in levator palpebrae function to 14 mm, palpebral fissure width (PFW) is 11 mm, and MRD 1 is 5 mm. Follow-up examinations confirmed the restoration of normal upper eyelid position and function.

DISCUSSION

Neurological manifestations such as peripheral neuropathy and cranial nerve palsy have been reported with chemotherapeutic agents, especially platinum-based compounds^[2,3] Ptosis is an uncommon adverse effect, and its occurrence with carboplatin is extremely rare. The mechanism by which carboplatin induced ptosis is not well understood. It is hypothesized that the drug may interfere with neuromuscular transmission at the neuromuscular junction, leading to dysfunction of the levator palpebrae superioris muscle. The exact pathophysiology requires further investigation. Recognition and diagnosis of carboplatin-induced ptosis require a thorough ophthalmological evaluation to exclude other potential causes. In cases of unilateral ptosis with a temporal association to carboplatin administration, a diagnosis of drug-induced ptosis should be considered. Platinum-based chemotherapeutic agents have been reported to cause disc edema and nerve palsies, so neuro-ophthalmic side effects should be anticipated while using these medications.^[4,5] Prompt discontinuation of the offending drug is recommended, and close monitoring resolution is necessary. We present a case of reversible ptosis occurring as a side effect of carboplatin in a patient with ovarian cancer. Carboplatin-induced ptosis should be considered as a potential adverse effect, especially in patients receiving platinum-based chemotherapy. Prompt recognition, appropriate management, and discontinuation of the drug can lead to complete resolution of ptosis, avoiding unnecessary surgical intervention and improving patient outcomes. Health-care providers should be vigilant in monitoring for ocular adverse effects during chemotherapy treatment to provide comprehensive care to patients.

CONCLUSION

Neurological manifestations of platinum based chemotherapeutic agents should always be in mind as most malignancies can have systemic metastasis which can have same manifestation and prompt intervention helps to resolve the same.

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Ethical approval

Institutional Review Board approval is not required.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent.

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Conflicts of interest

There are no conflicts of interest.

Use of artificial intelligence (AI)-assisted technology for manuscript preparation

The authors confirm that there was no use of artificial intelligence (AI)-assisted technology for assisting in the writing or editing of the manuscript and no images were manipulated using AI.

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