Giant Cell Arteritis and Immune Checkpoints Inhibitor in Non-Small cell Lung Cancer: a case report

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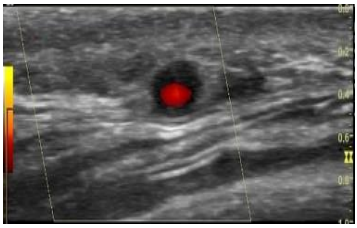
Objective

Immune checkpoint inhibitors (ICIs) have significantly expanded cancer treatment options, but are associated with immune-related adverse events (irAEs), including rare neurological complications such as giant cell arteritis (GCA) and flare-ups of pre-existing autoimmune diseases [1]. We present a case of GCA as an irAE to raise awareness and discuss the risk-benefit of discontinuing or rechallenging ICIs after such events.

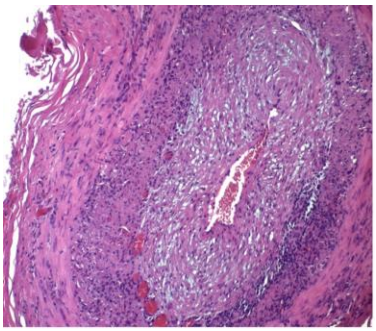
Materials and methods

We described the clinical, laboratory, neuroradiologic, and neuropathologic features of a patient who developed Giant Cell Arteritis during ICI therapy. Then we conducted a review of the existing literature and discussed the peculiar aspects of our case.



Results

A 64-year-old man with ischemic heart disease, psoriasis, type 2 diabetes, obstructive sleep apnea, and a smoking history was diagnosed in February 2024 with metastatic squamous cell carcinoma of the lung, showing high PD-1 expression (>65%). Cemiplimab was initiated, with a plan for six cycles. After the fourth cycle, despite good oncologic response and tolerance, the patient developed jaw claudication and a left temporal headache, prompting a pause in therapy. Symptoms improved with corticosteroids. However, upon restarting the fifth cycle, he experienced recurrent symptoms, including decreased visual acuity and visual field defects in the left eye. Neurological evaluation and Doppler ultrasound revealed an enlarged left temporal artery. High- dose IV methylprednisolone followed by oral prednisone led to symptom improvement. Temporal artery biopsy confirmed GCA. Visual acuity improved significantly. A PET scan showed no arterial inflammation, but slight disease progression in the left upper lobe. After reassessment, cemiplimab was discontinued, and chemotherapy with platinum and gemcitabine was recommended after prednisone tapering.



Discussion

GCA is a rare irAE of ICIs, with few reported cases. A 2023 study using the WHO's Vigibase identified only 40 cases of large-vessel vasculitis linked to ICIs, 31 of which were GCA [2]. the analysis highlighted a strong association between GCA and anti-CTLA-4 therapy (0,3 %), and only 0,02 % linked to anti-PD-(L)1 agents [3]. The pathophysiology of irAEs is unclear but may involve immune cross-reactivity between tumor and normal tissues. The relationship between irAEs and oncologic outcomes is complex. Some studies suggest that patients experiencing low-grade irAEs may have better tumor responses, likely due to more higher immune activation. However, severe irAEs, such as vasculitis or neurological syndromes, often necessitate therapy discontinuation and immunosuppression, potentially compromising oncologic efficacy [1-4].

Conclusion

This case highilghts the importance of careful decision-making regarding ICI rechallenge, which should be guided by a multidisciplinary team, taking into account the patient's individual response and side effects. In this case, no reactivation of psoriasis was reported, while a different autoimmune disease developed. Rechallenge with cemiplimab caused further relapse, still responsive to steroids but precluding further treatment with the same agent.e outcomes.

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