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## Multifocal choroiditis as the first sign of systemic sarcoidosis associated with pembrolizumab



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### ABSTRACT

**Purpose:** to report a case of bilateral panuveitis with multifocal choroiditis associated with a systemic sarcoidosis unmasked by pembrolizumab.

**Case report:** a 68-years old woman with a history of metastatic melanoma treated by pembrolizumab consulted for bilateral blurred vision. The ophthalmologic examination revealed a bilateral anterior uveitis with cells in the anterior chamber and granulomatous keratic precipitates, vitreous cells and multifocal choroiditis confirmed by indocyanine green angiography. The systemic workup revealed pulmonary sarcoidosis confirmed by biopsy.

**Conclusions and importance:** Pembrolizumab is an immune checkpoint inhibitor therapy used in the treatment of metastatic melanoma. We report a pembrolizumab-associated sarcoidosis revealed by a panuveitis with multifocal choroiditis. Physicians should be aware of the potential inflammatory and autoimmune disease that may be induced by immunomodulatory therapies.

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### 1. Case report

A 68-year old woman consulted for blurred vision for several months. She had a history of metastatic melanoma (stage IV) treated with pembrolizumab for 6 months. The visual acuity was 20/32 in the right eye and 20/25 in the left eye. The ophthalmologic examination revealed a bilateral anterior uveitis with cells in the anterior chamber and granulomatous keratic precipitates, vitreous cells and multifocal choroiditis confirmed by indocyanine green angiography (Fig. 1). The systemic workup revealed on the computed tomography (CT) mediastinal and hilar lymphadenopathy. A bronchoalveolar lavage (BAL) found 14.5% of lymphocytes but CD4/CD8 cell ratio was 2.93. Mycobacterium tuberculosis was not detected in bronchoalveolar fluid. Serum angiotensin-converting enzyme (ACE) levels was elevated at 73 IU/liter (normal < 52 IU/liter). Histologic examination of bronchial biopsy material showed a noncaseating granuloma. Findings were consistent with pulmonary sarcoidosis, probably unmasked by pembrolizumab because of pre-existing smaller and asymptomatic mediastinal and hilar adenopathy after reinterpretation of a CT scan performed before starting pembrolizumab.

### 2. Discussion

Immunomodulatory therapies are increasingly used in patients with cancer (melanoma or lung cancer). Pembrolizumab is a humanized antibody that targets the programmed cell death-1 (PD-1) receptor, and has been approved by FDA in 2014 for patients with advanced melanoma. The most frequently reported adverse event (AE) of pembrolizumab is skin toxicity (dermatitis) in 30% of cases<sup>1</sup> Many recent case reports have reported serious AEs including inflammatory or autoimmune manifestations: sarcoidosis<sup>2</sup> polymyalgia rheumatica/giant cell arteritis<sup>1</sup> In our case, the patient did not need to receive corticosteroids and remained on pembrolizumab.

### 3. Conclusion

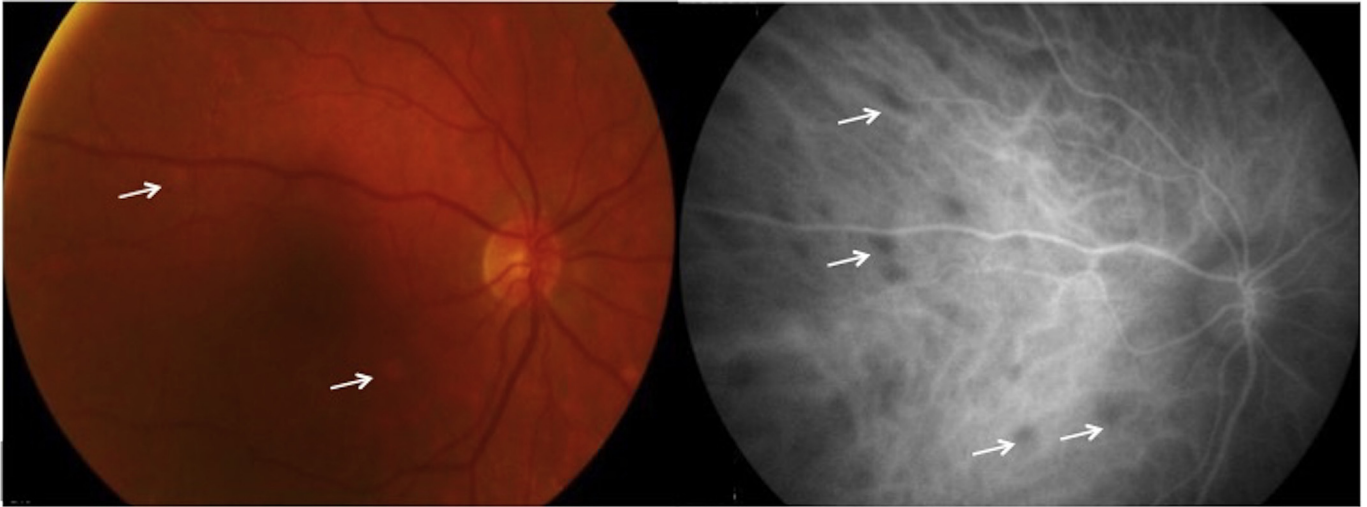
We report for the first time a pembrolizumab-associated sarcoidosis revealed by a panuveitis with multifocal choroiditis. Physicians should be aware of the potential AEs that may be induced by these immunomodulatory therapies and able to identify them.

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**Fig. 1.** Fundus photography and indocyanine green angiography of the right eye. White dots of multifocal choroiditis are visible on the fundus (arrows) and more numerous on indocyanine green angiography. The appearance of the left eye is similar.

### Authorship

All authors attest that they meet the current ICMJE criteria for Authorship.

### Conflict of interest

Dr Auregan-Giocanti is consultant for Allergan, Alimera, Novartis and Bayer. Dr Qu-Knafo Lise has nothing to disclose.

### Patient consent

Patient consent to the publication was obtained orally and in writing from the patient herself, in accordance with the Declaration of Helsinki.

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### References

1. Abdel-Wahab N, Shah M, Suarez-Almazor ME. Adverse events associated with immune checkpoint blockade in patients with cancer: a systematic review of case reports. *PLoS One*. 2016;11:e0160221. <http://dx.doi.org/10.1371/journal.pone.0160221>.
2. Cotliar J, Querfeld C, Boswell WJ, et al. Pembrolizumab-associated sarcoidosis. *JAAD Case Rep*. 2016;2:290–293. <http://dx.doi.org/10.1016/j.jdc.2016.06.004>.