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## **Severe gastritis in a patient treated with immunotherapy: immune-mediated or reactivation of cytomegalovirus?**

Sonia Rebeca Vallejo Rivera. Lidia Nicolás Liza, Lucía Bonilla López, Juan Díaz Concepción

Radiodiagnostic Service. Hospital Universitario de Guadalajara. Guadalajara.

Correspondence: Sonia Rebeca Vallejo Rivera. E-mail: srvallejo18@gmail.com

### **CASE REPORT**

A male with a history of nodular melanoma on the back, resected pulmonary metastasis, and adjuvant treatment with Pembrolizumab; who consulted for epigastralgia of one month of evolution with 3-4 daily episodes of non-bloody, non-bilious emesis. No other symptoms.

During admission, an abdominal computed tomography (CT) scan with intravenous (IV) contrast was requested, which showed marked diffuse thickening of the gastric walls, submucosal edema, and mucosal hyperenhancement suggestive of severe gastritis. Subsequent upper endoscopy was performed, confirming significant mucosal congestion of the gastric fundus, body, and antrum, with a "denuded" appearance, redness, and mucosal edema with loss of folds.

Endoscopic biopsies revealed the presence of granulation tissue with intense lymphoplasmacytic inflammatory infiltrates with eosinophils and the presence of cytomegalovirus (CMV) viral inclusions. CMV DNA detection by PCR was performed and was positive at low titers <178 IU/ml.

Treatment with IV Ganciclovir and later oral Valganciclovir was prescribed. Currently, the patient is asymptomatic and a control CT scan was normal (not shown).

### **DISCUSSION**

Patients on treatment with programmed death-1 (PD-1) immune checkpoint inhibitors frequently receive immunosuppressive therapy to control immune-related adverse effects (1, 2). CMV gastritis may occur in these patients by reactivation or primoinfection. Mucosal inflammation, immunotherapy-induced dysregulation of the immune system and corticosteroid-related

immunosuppression are the main mechanisms of reactivation of latent CMV in the gastric mucosa (3).

*Conflict of interest: The authors declare that they have no conflict of interest.*

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#### **BIBLIOGRAPHY:**

1. Lu J, Firpi-Morell RJ, Dang LH, et al. An Unusual Case of Gastritis in One Patient Receiving PD-1 Blocking Therapy: Coexisting Immune-Related Gastritis and Cytomegaloviral Infection. *Gastroenterol Res.* 2018;11:383–7. DOI: 10.14740/gr1068w
2. Hulo P, Touchefeu Y, Cauchin E, et al. Acute Ulceronecrotic Gastritis With Cytomegalovirus Reactivation: Uncommon Toxicity of Immune Checkpoint Inhibitors in Microsatellite Instability–High Metastatic Colorectal Cancer. *Clin Colorectal Cancer.* 2020;19:e183–8. DOI: 10.1016/j.clcc.2020.04.006
3. Ojeda Gómez A, Jiménez García N, Barragán Martínez J, et al. Acute neutrophilic gastritis induced by nivolumab used as treatment for non- metastatic malignant melanoma. *Rev Esp Enferm Dig.* 2021 Dec;113(12):853-854. DOI: 10.17235/reed.2021.8295/2021

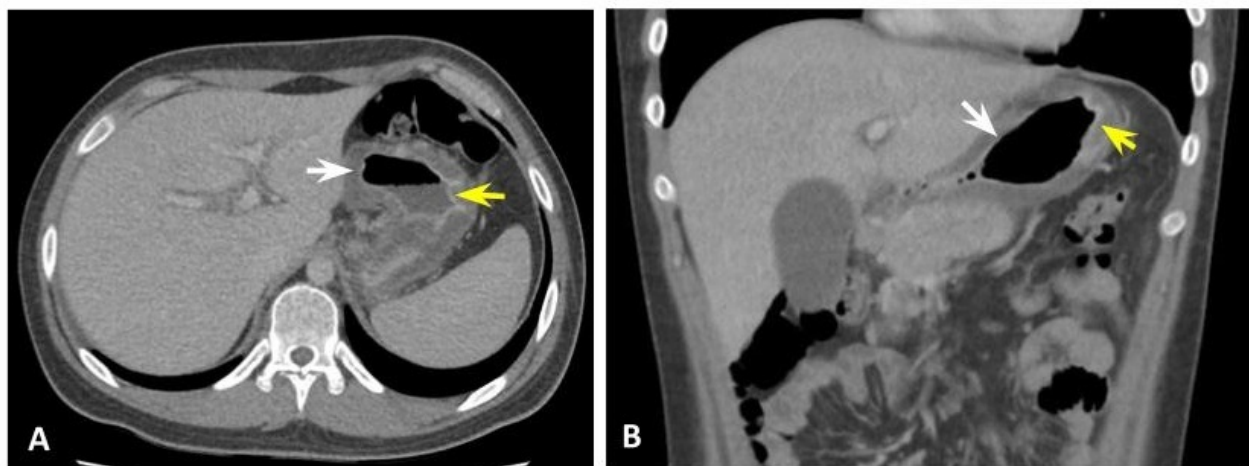


Figure 1. Abdominal CT with IV contrast in portal phase: A. axial plane and B. coronal plane. Massive thickening of the entire gastric wall with hypodense submucosal edema (white arrow) and

mucosal enhancement (yellow arrow) giving the gastric wall a banded appearance.

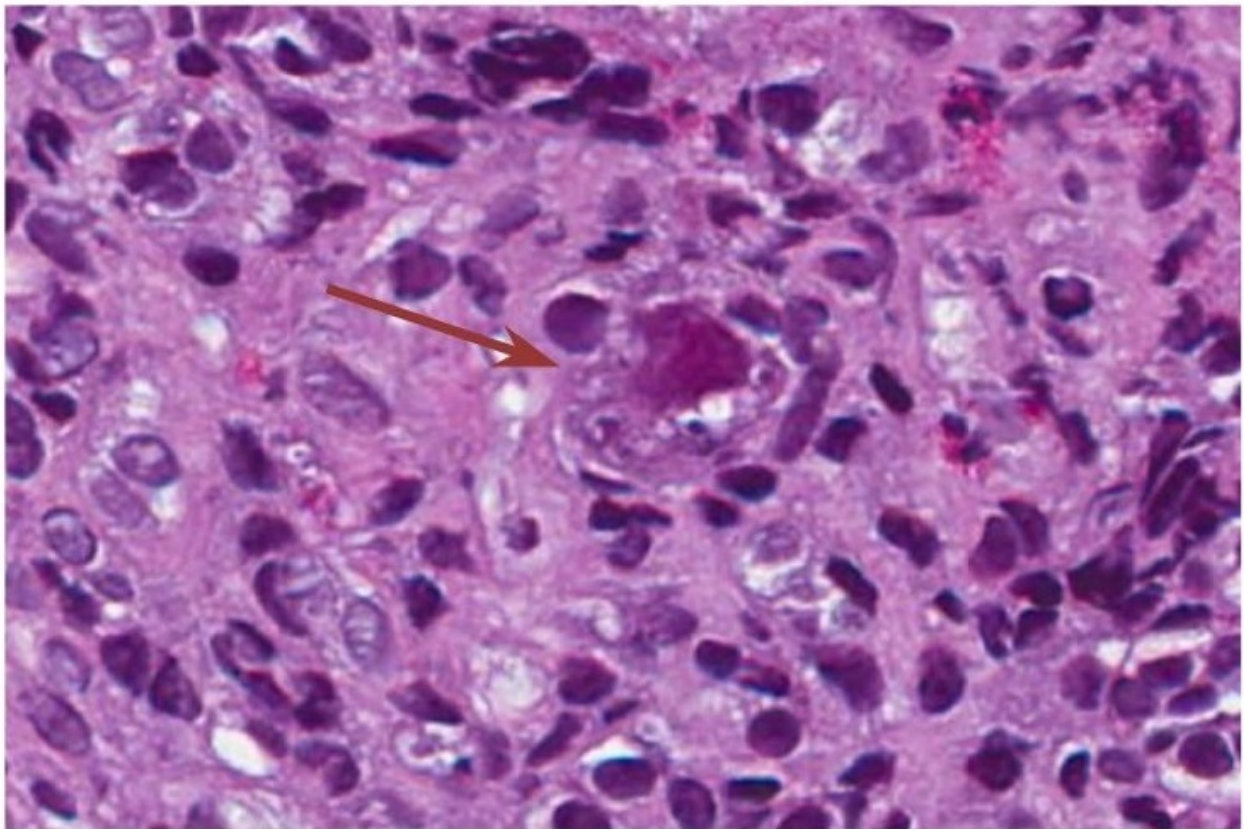


Figure 2. Hematoxylin-eosin staining of gastric biopsy. The vessels show marked reactive changes and focally viral inclusions suggestive of CMV (red arrow), confirmed by immunohistochemistry techniques.