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CLINICAL CURIOSITY

WILEY

Persistent hypoxemia in a child with medulloblastoma following a third autologous stem cell transplant

Jordan Holthe BS[1] | Paul Boesch DO[2] | Mira Kohorst MD[3] | Jonathan Schwartz DO, MPH[3] | Asmaa Ferdjallah MD, MPH[3]

[1]Mayo Clinic Alix School of Medicine, Mayo Clinic, Rochester, Minnesota, USA
[2]Department of Pediatric Pulmonology, Mayo Clinic, Rochester, Minnesota, USA
[3]Department of Pediatric Hematology, Oncology, and Bone Marrow Transplant, Mayo Clinic, Rochester, Minnesota, USA

Correspondence
Asmaa Ferdjallah, MD, MPH, Department of Pediatric Hematology, Oncology, and Bone Marrow Transplant, Mayo Clinic, 200 1st St SW, Rochester, MN 55905, USA.
Email: ferdjallah.asmaa@mayo.edu

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1 | INTRODUCTION

Persistent hypoxemia in children with an underlying diagnosis of cancer presents a clinical challenge for physicians. Hypoxemia may arise directly from the malignancy, the subsequent treatment the child is receiving, or from complications associated with curative intent. The complex interplay of these factors necessitates a multidisciplinary approach to diagnosis and management, ensuring that each potential etiology is sufficiently examined and addressed. This report seeks to explore the case of persistent hypoxemia in a child with medulloblastoma following bone marrow transplant, emphasizing the importance of a systematic and comprehensive evaluation to guide both the diagnosis and the treatment. By better understanding the potential etiologies of hypoxemia, clinicians can improve patient care and meet the unique needs of this specific population.

2 | CASE PRESENTATION

A 3-year-old boy with disseminated Group 4 medulloblastoma status postmidline craniotomy, emergent, and abbreviated course of spinal radiation followed by induction chemotherapy (vincristine, methotrexate, etoposide, cyclophosphamide, and cisplatin) developed new-onset hypoxemia on Day +4 following his third and final autologous hematopoietic stem cell transplant (HSCT) conditioned with carboplatin and thiotepa. A chest X-ray (CXR) revealed bilateral hazy pulmonary opacities and a chest computed tomography (CT) revealed diffuse bilateral peripheral ground glass opacities and central bronchial wall thickening. The heart size was noted to be normal. He underwent a bronchoscopy with lavage the following day which revealed mild visible evidence of inflammatory airway disease consistent with diffuse bronchitis, but absence of inflammation on bronchoalveolar lavage (BAL). A central venous catheter blood culture and BAL revealed pansensitive *Serratia marcescens* and he completed a course of cefepime for 10 days for bacteremia and possible pneumonia.

Despite the 10-day cefepime course for bacteremia and possible pneumonia, he remained intermittently hypoxemic with an escalation in oxygen requirement (2 L nasal cannula [NC] 100% FiO_2) on Day +17 with new-onset tachypnea and dry cough. A repeat CXR noted improved hazy bilateral opacities but new cardiac enlargement. An echocardiogram (ECHO) revealed a severely dilated right ventricle with moderately decreased systolic function with markedly increased estimated right ventricular (RV) systolic pressure (67 mmHg). A CT angiogram was negative for pulmonary embolism (PE) but did demonstrate new circumferential pericardial effusion. Focal dilation of left lower lobe pulmonary arteries with ground glass opacities was suspicious for regional venous obstruction though infection required exclusion (Figure 1).

CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest.

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