

Rare manifestation of paclitaxel-induced cardiotoxicity: A case of restrictive cardiomyopathy in an elderly breast cancer patient

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Abstract:

Paclitaxel, a widely used taxane in the treatment of breast and other solid tumors, rarely causes cardiovascular complications such as restrictive cardiomyopathy and often underrecognized. A 78-year-old woman with estrogen receptor/progesterone receptor-positive, HER2-negative breast cancer who developed acute dyspnea and paroxysmal nocturnal dyspnea after her ninth weekly paclitaxel infusion. Cardiac evaluation revealed new-onset atrial fibrillation, elevated N-terminal pro-B-type natriuretic peptide, and multimodal imaging findings consistent with restrictive cardiomyopathy, including bi-atrial enlargement, severe valvular regurgitation, and myocardial fibrosis on cardiac magnetic resonance imaging. She had no prior cardiac history, and alternative etiologies were excluded. The temporal association with paclitaxel strongly implicated drug-induced cardiotoxicity. Proposed mechanisms include microtubule disruption, mitochondrial injury, calcium dysregulation, and potential toxicity from the solvent Cremophor EL. Prompt cessation of paclitaxel and initiation of heart failure therapy led to clinical improvement. This case highlights the need for vigilance for cardiac toxicities in chemotherapy patients with cardio-oncology collaboration.

Keywords:

Breast cancer, cardiac magnetic resonance imaging, paclitaxel, restrictive cardiomyopathy