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Contralateral Varicella-Zoster Virus Myelitis Following Adjuvant Breast Radiotherapy: A Rare Case Report

Hanee Rim[1], M.D, Joon Sung Kim[1], M.D, Ph.D, Mi-Jeong Yoon[1], M.D, Ph.D, Yeun Jie Yoo[1], M.D,Ph.D, Bo Young Hong[1], M.D, Ph.D*

[1] Department of Rehabilitation Medicine, St. Vincent's Hospital, College of Medicine, The Catholic University of Korea

Introduction

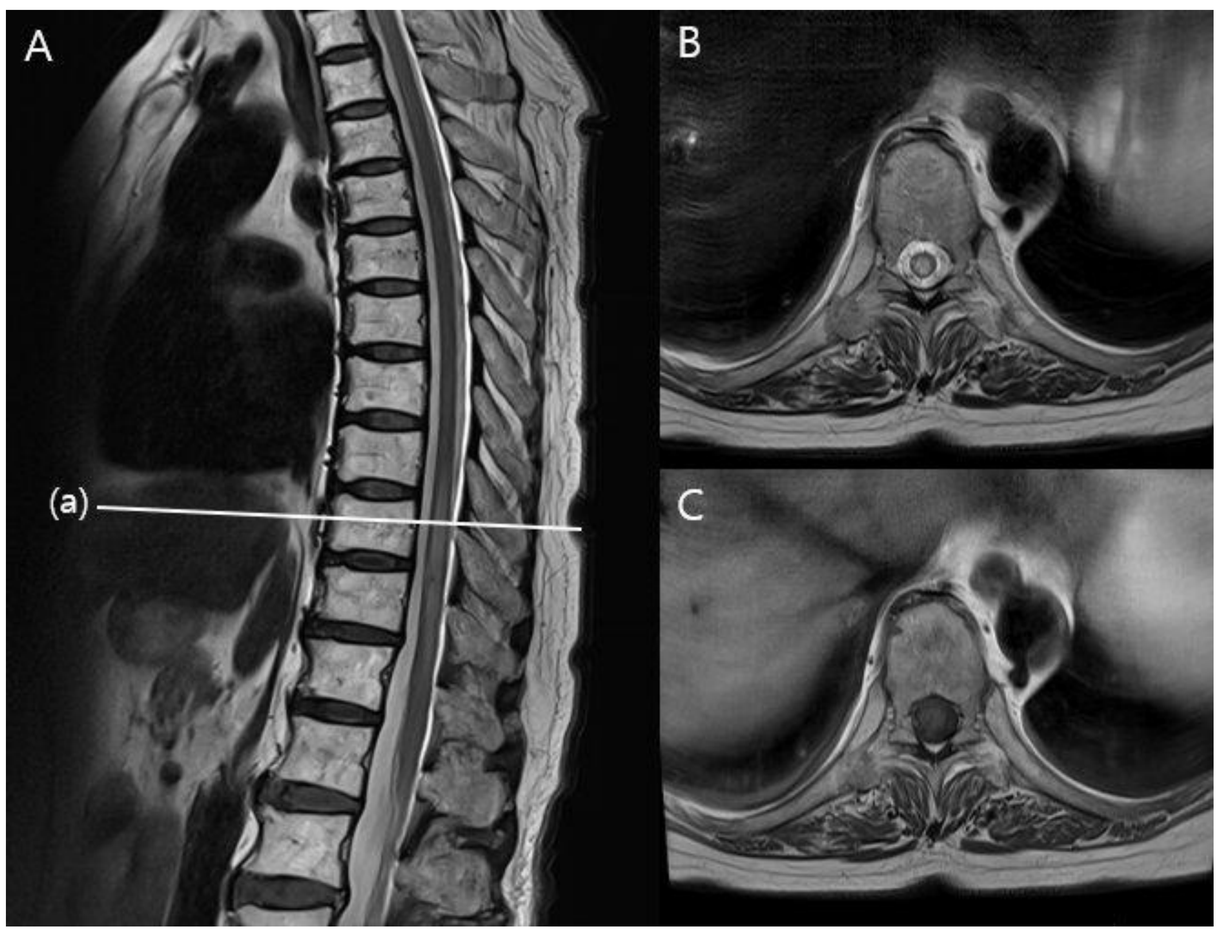
Varicella-zoster virus (VZV) reactivation is relatively common in patients with malignancy, particularly following chemotherapy or radiotherapy; however, spinal cord involvement is rare. We report an unusual case of contralateral VZV-associated myelitis that developed shortly after adjuvant breast radiotherapy.

Case report

A 72-year-old woman with stage I triple-negative breast cancer underwent breast-conserving surgery followed by adjuvant docetaxel–cyclophosphamide chemotherapy and hypofractionated radiotherapy to the left breast.

Within one week of completing radiotherapy, she developed disseminated herpes zoster originating from the irradiated field, followed by acute-onset weakness and sensory disturbance in the contralateral right lower extremity. Thoracic spinal magnetic resonance imaging revealed an intramedullary lesion at the T10–T11 level predominantly involving the right hemicord (**Figure 1**). Cerebrospinal fluid analysis demonstrated lymphocytic pleocytosis and was positive for VZV DNA by polymerase chain reaction, confirming the diagnosis of VZV myelitis. Electrophysiological studies supported corticospinal tract and dorsal column dysfunction corresponding to the imaging findings (**Figure 2**). The patient showed neurological improvement following intravenous acyclovir and corticosteroid therapy.

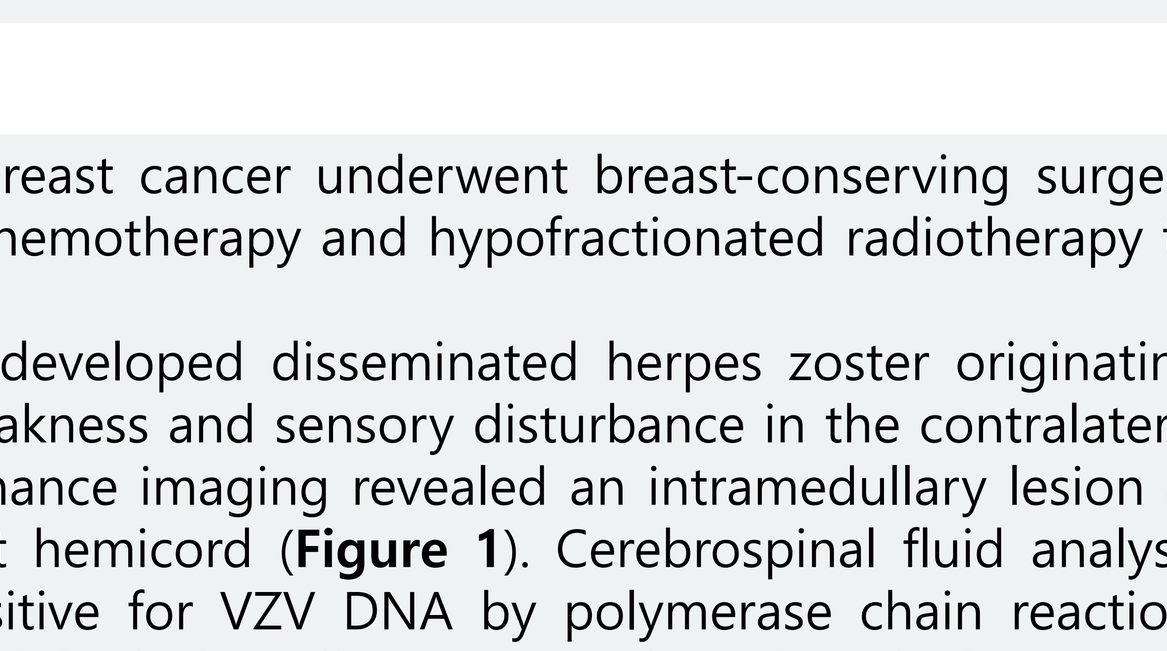
Figure 1. Thoracic spine magnetic resonance imaging findings.



(A) Sagittal T2-weighted image demonstrates an ill-defined intramedullary hyperintense lesion involving the T10–T11 spinal cord segments, accompanied by mild cord swelling.
(B) Axial T2-weighted image at the corresponding level(a) shows asymmetric hyperintensity predominantly involving the right hemicord.
(C) Axial T1-weighted post-contrast image at the same level(a) reveals subtle peripheral gadolinium enhancement surrounding the intramedullary lesion, consistent with inflammatory myelitis.

Figure 2. Motor evoked potential (MEP) assessment and central motor conduction time (CMCT).

A



B

		Latency (ms)	CMCT (c) (a-b)
Right	(a)	38.5ms	27.0ms
	(b)	11.8ms	
Left	(a)	30.8ms	18.4ms
	(b)	12.2ms	

(A) Schematic illustration of MEP recording. Cortical MEP latency(a) was obtained by transcranial magnetic stimulation, and spinal MEP latency(b) by spinal stimulation, with recordings obtained from the tibialis anterior muscle. CMCT(c) was calculated as the difference between cortical and spinal latencies (a–b).
(B) Quantitative summary of MEP parameters recorded from the bilateral tibialis anterior muscles. Values represent the mean of six consecutive trials.

Conclusion

This case highlights an atypical presentation of VZV myelitis with contralateral spinal cord involvement after breast radiotherapy, suggesting that mechanisms beyond direct segmental spread—such as immune dysregulation or vascular involvement—may contribute. Clinicians should consider VZV myelitis in patients presenting with acute myelopathy after radiotherapy, even when spinal lesions are anatomically discordant with cutaneous eruptions.