

VINCRIStINE INDUCED VOCAL CORD PARALYSIS IN PATIENT WITH DIFFUSE LARGE B-CELL LYMPHOMA: A CASE REPORT

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ABSTRACT

We described a 60 years old male patient with diffuse large B-cell lymphoma who developed vincristine-induced vocal cord paralysis. Vincristine-induced vocal cord paralysis is rare but potentially life-threatening complication and it should be suspected when stridor and hoarseness of voice is present. Clinicians should be aware of this reversible but life threatening condition in patients receiving vincristine. Vocal cord paralysis can be resolved spontaneously after withdrawal of the vincristine.

KEYWORDS: Diffuse large B-cell lymphoma, Vincristine, Vocal cord palsy.

INTRODUCTION

Vinca alkaloids were first introduced as antineoplastic agents in early 1960 which were derived from the periwinkle plant (*Vinca rosea*). Vincristine has a well-established role in the treatment of hematologic malignant neoplasms and solid tumors as mitotic inhibitors by binding to the protein component of microtubules.^[1,2]

Vincristine is known to cause various side effects such as constipation, hair loss, hyponatremia but neurotoxicity is the most common amongst them. Neurotoxicity is thought to occur because of the binding with tubulin, where it interferes with microtubule assembly, axonal transport, and secretory functions, thereby causing primary axonal degeneration.^[2,3,4]

Neurotoxicity presented as loss of deep tendon reflexes, neuritic pain, paresthesias, and wrist and foot drop. Less frequently, transient cortical blindness, oculomotor nerve dysfunction, jaw pain, facial palsy, sensorineural hearing loss, and laryngeal nerve paresis.^[5]

Vocal cord paralysis can be due to peripheral damage to the laryngeal nerve or to the vagus nerve nuclei and its origin within the central nervous system. Bilateral involvement is usually due to involvement of the vagal nuclei while unilateral involvement is believed to be due to peripheral damage of the vagus nerve.^[6,7]

CASE REPORT

A 60 year-old man presented with generalized lymphadenopathy. His works up revealed stage IIIB diffuse large B-cell lymphoma (DLBCL). He was treated with R-CHOP protocol (Rituximab 375 mg/m², Cyclophosphamide 750 mg/m², Doxorubicin 50 mg/m², Vincristine 1.4 mg/m², and Prednisolone 40 mg/m²). After receiving the 4th cycle of chemotherapy, he developed hoarseness of voice and dry cough. Patient was diabetic and already on oral hypoglycemic drugs.

Patient was vitally stable with normal temperature, had harsh vesicular breathing, good air entry, no wheeze or stridor. The patient was not taking any antibacterial or antifungal drugs at that point of time and laboratory works up was normal. A flexible fiber optic endoscope showed left vocal cord palsy in abducted position with loss of movement. A contrast enhanced CT of soft tissue neck and chest apart of left vocal cord paralysis was normal and there was no residual disease (Figure 1). His subsequent doses of vincristine were stopped. Hoarseness of voice improved gradually. The patient then received two more courses of R-CHOP without vincristine. Subsequent laryngoscopy three weeks later showed normal movement of both vocal cords.

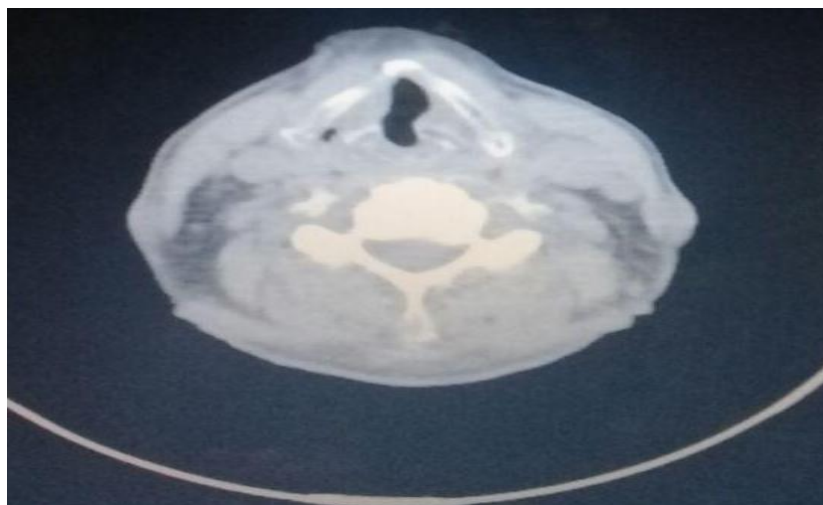


Figure. 1: CT scan of the neck showing left vocal cord palsy.

DISCUSSION

While unilateral vocal cord paralysis mostly unrecognized with assumption that hoarseness of voice is secondary to an upper air way obstruction, bilateral vocal cord paralysis has been reported infrequently in literature. Most of cases mainly reported in the pediatrics age group with few cases reported in adults.^[1,6,8-13]

Vincristine induced neurotoxicity can present as a mixed sensorimotor neuropathy, autonomic dysfunction and less commonly cranial nerve involvement and encephalopathy. It has been reported that vincristine toxicity has a cumulative effect. Frequent (more than once a week) and higher doses (2mg/m²/wk) increase the toxicity. There are many factors leading to increase toxicity such as pre-existing liver dysfunction, a hereditary neuropathy, and if other drugs such as allopurinol, erythromycin, isoniazid, mitomycin C, phenytoin, and itraconazole are concomitantly used.^[1,5,8,11,10,14]

Majority of vocal cord paralysis cases in the combined series were bilateral, whereas all unilateral cases were left-sided, interestingly the left side of the larynx recovered later than the right. It is attempting to assume that the left recurrent laryngeal nerve is more prone to neurotoxic process because of its length.^[11]

Early detection and vincristine withdraw is the best treatment of vincristine induced vocal cord palsy. Keeping in mind that complete recovery of vocal cord paralysis may require 6-9 months.^[1,10,12] Reintroduction of vincristine with full dose reported in five cases and led to reappearance of hoarseness in one patient.^[9,11,13,15,16]

Several medications may have role in enhance recovery of vocal cord palsy such as Pyridoxine, pyridostigmine, glutamic acid, folic acid and lithium but need to be looked out in large clinical trials in future.^[17-21] Our patient completed the last two cycles without vincristine and regained vocal cord function three weeks later.

CONCLUSION

Vincristine induced vocal cord paralysis is rare but reversible life threatening condition. Early detection and withdrawal of vincristine lead to avoidance of tracheostomy or airway obstruction. Therefore if hoarseness of voice or strider developed in patient receiving vincristine that patient should be investigate for vocal cord paralysis with immediate withdrawal of vincristine.

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