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SHORT COMMUNICATION

Reversible paclitaxel-induced vocal cord paralysis with later recall with vinorelbine

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Abstract Described is the first reported case of paclitaxel-induced recurrent laryngeal nerve paralysis in a patient receiving adjuvant therapy for breast cancer. This rare form of neuropathy was reversible at 3 months, but it was re-induced 11 months later when the patient received vinorelbine.

Introduction

Neurotoxicity syndromes occur frequently in patients receiving chemotherapy and are often dose limiting. While many agents have been implicated, vinca alkaloids (particularly vincristine) and taxanes are widely recognized as causing neuropathy. Both classes of drugs typically cause peripheral neuropathy in a stocking-and-glove fashion; in addition, vinca alkaloids affect the autonomic nervous system and can lead to constipation or bladder atony [1]. More unusual presentations have been reported as well, including vocal cord palsy [4], cortical blindness [5], and encephalopathy [7]. Described below is the first reported case of paclitaxel-induced recurrent laryngeal nerve paralysis in a patient receiving adjuvant therapy for breast cancer. This rare form of neuropathy was reversible at 3 months, but it was re-induced 11 months later when the patient received vinorelbine.

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Case report

A 48-year-old, premenopausal woman was diagnosed with invasive ductal carcinoma of the right breast in August 2004. She underwent lumpectomy with sentinel lymph node sampling, which revealed a 3 cm, poorly differentiated ductal carcinoma with three negative sentinel nodes. Estrogen and progesterone receptors as well as HER-2 were negative. She received four cycles of doxorubicin and cyclophosphamide and began treatment with paclitaxel, 175 mg/m^2 infused over 3 h every 3 weeks, in December 2004. After the first dose she developed mild tingling in her fingers and toes as well as some muscle and joint aches. Approximately 24 h after the third dose, however, she developed progressive hoarseness and difficulty swallowing liquids. On strobe videolaryngoscopy, she appeared to have left true vocal cord paresis. Computed tomography of the head, neck, and chest did not reveal any lesions in the brain or along the course of the left recurrent laryngeal nerve. Electromyography confirmed severe neuropathy of the left recurrent laryngeal nerve. The hoarseness and dysphagia slowly improved after paclitaxel was discontinued, and by 3 months she had near-complete resolution of the vocal cord paresis.

The same patient went on to develop metastatic breast cancer in August 2006 with widespread bony metastasis, chest wall recurrence, and a single lesion in the cerebellum. The patient had no intra-thoracic disease as assessed by computed tomography. She was treated with whole-brain radiotherapy and palliative radiation to the thoracic spine.

She was started on capecitabine for systemic therapy but could not tolerate it due to a severe rash. She was then started on vinorelbine at 25 mg/m^2. She tolerated two weekly doses without difficulty, and thus the dose was increased to 30 mg/m^2. After a total of five doses over the course of 8 weeks, she began to have hyperesthesia in her anterior thighs. The symptom was mild and therefore she was given another dose of vinorelbine at 25 mg/m^2. Then on 13th December, the patient once again developed symptoms of recurrent laryngeal nerve neuropathy. Her symptoms have not resolved at 7 weeks since their onset.

Discussion

Neurotoxicity is a common complication of treatment with taxanes and vinca alkaloids. Both classes of drugs typically affect the peripheral sensory nerves, and vinca alkaloids can also affect the autonomic nerves. The exact mechanism of the toxicity is unknown, but ganglionopathy, axonopathy, and demyelination have been postulated, probably related to the ability of taxanes and vinca alkaloids to disrupt microtubule formation [8].

Vocal cord paresis from recurrent laryngeal neuropathy as described in this case report would be a very rare presentation of neuropathy with either drug, with only a few cases reported in the literature [2, 3]. The fact that this patient had vocal cord paresis with both paclitaxel and vinorelbine suggests that the vinorelbine caused a "recall" of a previous nerve injury from paclitaxel. There certainly have been reports of severe neurotoxicity in patients treated concurrently with the two drugs [6], and there is some evidence that prior exposure to paclitaxel can lead to more severe neurotoxicity when patients are subsequently treated with vinorelbine [3]. This case further supports using caution when considering a potentially neurotoxic agent in a patient with prior history of neuropathy in any form.

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