Vocal Cord Paralysis Following I-131 Ablation of a Postthyroidectomy Remnant

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Vocal cord paralysis has been reported following I-131 therapy of thyrotoxicosis and following ablation of the whole thyroid. However, this rare complication has not previously been described following I-131 ablation of a postthyroidectomy remnant. We report a patient who required tracheostomy for bilateral vocal cord paralysis following I-131 ablation after near-total thyroidectomy for papillary thyroid carcinoma.


Injury to the recurrent laryngeal nerve is a recognized hazard of thyroid surgery. However, there have been only four reports of cord paralysis following I-131 therapy; three for hyperthyroidism (1–3), and one case following ablation for the whole thyroid (4). Bilateral vocal cord paralysis following I-131 therapy after near-total thyroidectomy has not been reported. The present case is reported to alert clinicians to the possibility of this rare complication, which may become more common with increasing use of near-total thyroidectomy for differentiated carcinoma of the thyroid.

CASE REPORT

A 40-yr-old woman presented with a 2-mo history of a neck mass without prior radiation to the neck. Physical examination revealed a small nodule in the left lobe of the thyroid. No cervical nodes were palpable. An I-131 thyroid scan confirmed a 2-cm solitary cold thyroid nodule and ultrasonography established the mass to be solid. Fine needle aspiration biopsy was consistent with papillary thyroid carcinoma. Serum thyroid hormones were normal, x-rays demonstrated no abnormal cervical calcifications, and there was normal movement of both vocal cords preoperatively.

At surgery, it was apparent that tumor had invaded the overlying muscles. Intraoperative biopsy confirmed malignancy and a near-total thyroidectomy was performed which included the involved muscle and ipsilateral regional lymph nodes. Both recurrent laryngeal nerves were identified and care was exercised to prevent injury during the procedure. As the endotra-
adductor motor groups are involved and nerve injury is bilateral, an airway problem usually develops, necessitating tracheostomy (5). Because of the postsurgical stridor it must be assumed that the patient sustained injury to the left recurrent laryngeal nerve during surgery. Presumably, the addition of right-sided edema from radiation thyroiditis was sufficient to induce bilateral nerve injury. We can conceive of no other explanation for the stridor and obvious respiratory distress in this patient.

This case has certain features similar to a case described by Pochin in 1956 (4). A patient with extensive cervical metastases who had stridor prior to I-131 therapy was deemed unsuitable for thyroidectomy. Consequently, he was given an ablation dose of 80 mCi. Respiratory difficulty increased rapidly within a few hours of therapy and tracheostomy became necessary 18 hr after the dose. Pochin wrote:

Since edema may develop in the region of the thyroid or a functioning metastasis after therapeutic radioiodine, caution should be observed after the ablation dose, as after other doses, where the trachea is grossly narrowed by tumor tissue, even if the latter has not been shown to concentrate iodine; and intubation and tracheostomy sets must be part of the equipment of a radioiodine ward although they will probably never be used.

Pochin's advice is as appropriate now as it was 30 years ago.

REFERENCES