BENIGN PARATHYROID CYST CAUSING VOCAL FOLD PARALYSIS: A CASE REPORT AND REVIEW OF THE LITERATURE

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Abstract: Background. Parathyroid cysts are uncommon, frequently asymptomatic lesions of the neck and superior mediastinum. Symptomatic parathyroid cysts are very rare, with roughly only 200 cases reported in the literature. Of these, only nine cases have been reported with recurrent laryngeal nerve (RLN) paralysis.

Methods. We report a case of a 49-year-old man initially seen with a 6-month history of worsening hoarseness. Physical examination revealed a palpable 3-cm, firm, smooth, nontender mass of the right thyroid lobe. Fiberoptic laryngoscopy showed right vocal cord immobility consistent with RLN paralysis. After CT and fine-needle aspiration of the mass, the patient underwent a right thyroid lobectomy. During surgery, the recurrent laryngeal nerve was found to be stretched and adherent to a right inferior lobe mass.

Results. Histologic analysis of the surgical specimen revealed a benign parathyroid adenomatous cyst. Postoperatively, the patient’s voice improved markedly. This case represents an extremely rare return of function of the RLN after cyst excision.

Conclusion. Parathyroid cysts should be included in the differential diagnosis for vocal fold paralysis.

Keywords: parathyroid cyst; vocal fold paralysis; calcium; recurrent laryngeal nerve

Parathyroid cysts are uncommon, frequently asymptomatic lesions of the neck and superior mediastinum. Symptomatic parathyroid cysts are extremely rare, with approximately only 200 cases reported in the literature.1 Of these, only nine cases have been reported with recurrent laryngeal nerve (RLN) paralysis.2-5 This is the fourth case in which recovery of RLN function returned after cyst excision.

CASE REPORT

A 49-year-old quadriplegic white man was seen with a 6-month history of worsening hoarseness. He had no history of dysphagia, voice strain, or neck pain. On physical examination, a 3-cm, firm, smooth, nontender mass was appreciated on palpation of the right thyroid lobe. Fiberoptic laryngoscopy revealed right vocal cord immobility consistent with a right RLN paralysis. Preoperative CT demonstrated a well-circumscribed cystic mass at the posterior aspect of the right thyroid lobe (Figure 1). Fine-needle aspiration (FNA) revealed colloid and rare thyroid follicular cells. All preoperative laboratory tests, including thyroid
function tests and calcium, were within normal limits.

The patient was brought to the operating room with the presumptive diagnosis of right thyroid cancer and underwent a right thyroid lobectomy. Intraoperatively, the RLN was found to be stretched and densely adherent to a right inferior thyroid lobe mass. Both frozen and subsequent permanent histopathologic examination revealed benign parathyroid adenomatous cyst with a normal thyroid lobe (Figure 2).

Postoperatively, the patient noted that his voice had markedly improved. Serologic calcium levels were followed and spontaneously normalized after an initial drop. Fiberoptic laryngoscopy 1 week later demonstrated full return of function of his right vocal cord.

DISCUSSION

Because of their embryonic development, parathyroid cysts, like parathyroids, can be found anywhere in the anterior neck and superior mediastinum. Therefore, they can mimic a thyroid or mediastinal lesion in their presentation. Most are presumed asymptomatic and are occasionally described incidentally on postmortem examination. Only 200 symptomatic parathyroid cysts have been reported, with presentations including progressive dysphagia, odynophagia, and very rarely, RLN paralysis. Approximately 10% of patients with parathyroid cysts have hyperparathyroidism.

Parathyroid cysts are more common in middle-aged women (female/male ratio = 2.5:1), although functional parathyroid cysts are 1.6 times more common in men. The inferior parathyroid gland is most commonly involved, with a slight left-sided predominance.

Diagnostically, these cysts can be challenging. When symptomatic, they tend to present as a solitary nodule, difficult to distinguish from a thyroid mass. A thyroid scan may demonstrate a cold nodule, further complicating the diagnosis. Aspiration of the cyst demonstrates elevated parathyroid hormone levels, regardless of symptoms. In contrast, thyroid cysts tend to contain brownish fluid with elevated thyroid hormone levels. Treatment options include ultrasound-guided aspiration for nonfunctional parathyroid cysts. However, carcinoma arising in the parathyroid cysts has been reported, and, therefore, surgical removal of all cysts should be strongly considered.

Hypocalcemia has been reported after the removal of functioning cysts despite normal morphology of other glands. Therefore, postoperative calcium levels should be monitored closely.

Benign processes causing RLN involvement are exceedingly rare. This case of vocal cord paralysis by parathyroid adenoma marks only the tenth case in history and the fourth case of return of RLN function after excision. Furthermore, this patient was only the third patient reported in whom hoarseness from a parathyroid cyst was the initial presenting symptom. Although infrequent, parathyroid lesions are relatively easily treated.
and should be considered in the differential diagnosis for any patient who has unilateral vocal cord paralysis.

REFERENCES