



Giant parathyroid adenoma masquerading as a goiter

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A 47-year-old man had had a long-standing asymptomatic neck lump for years. He assumed it to be goiter and did not seek medical advice. He reported suffering from recurrent episodes of nephrolithiasis, which had been treated with shock wave lithotripsy and ureteroscopy. Serum blood calcium levels were not measured until a recent admission for ureteroscopy and revealed hypercalcemia.

On physical examination, a moveable nontender elastic nodule was palpable in the right neck. There were no enlarged cervical lymph nodes. Laboratory investigations identified severe hypercalcemia at 13.8 mg/dL (reference range, 8.9–10.3 mg/dL). This was associated with hypophosphatemia at 1.9 mg/dL (reference range, 2.7–4.5 mg/dL) and a markedly raised intact parathyroid hormone level of 1,286.04 pg/mL (reference range, 6.87–64.87 pg/mL). His kidney function was moderately impaired with an estimated glomerular filtration rate of 59.2 mL/min per 1.73 m². Thyroid function test results were within normal range.

Computed tomography revealed an elongated right neck mass with intrathoracic extension (Fig. 1). The mass led to modest tracheal deviation, but there was no evidence of invasion into surrounding tissues. Tc-99m sestamibi scintigraphy showed persistent residual uptake in the right neck lesion. Dual-energy X-ray absorptiometry demonstrated low bone mineral density across all sites. The T-score was

–3.4 and the Z-score was –3.4 at the lumbar spine.

A neck ultrasound revealed a hypoechoic complex nodule with solid and cystic components abutting the right thyroid (Fig. 2). The patient underwent complete resection of the tumor via a transcervical incision. Intraoperatively, a well-demarcated, lobulated right inferior parathyroid tumor and a normal right superior parathyroid gland were noted. Serum calcium levels were closely monitored after parathyroidectomy to titrate calcium supplementation. The patient had an uneventful recovery and was discharged on the second postoperative day.

Histopathology indicated a parathyroid chief cell adenoma, measuring 11.4 × 6.0 × 3.3 cm in size and 59 g in weight, without features of atypia or malignancy. At a 5-month follow-up visit, the patient remained normocalcemic and did not experience any symptoms of kidney stone recurrence.

The possibility of parathyroid origin, albeit rare, should be considered in patients with nephrolithiasis and the presence of a neck lump. Parathyroid adenomas are usually small and unpalpable. The term large or giant adenoma has been applied to describe oversized parathyroid tumors weighing more than 3.5 g. Giant parathyroid adenomas appear to be a distinct clinical entity with greater functionality and lower frequencies of multiglandular disease. Differ-

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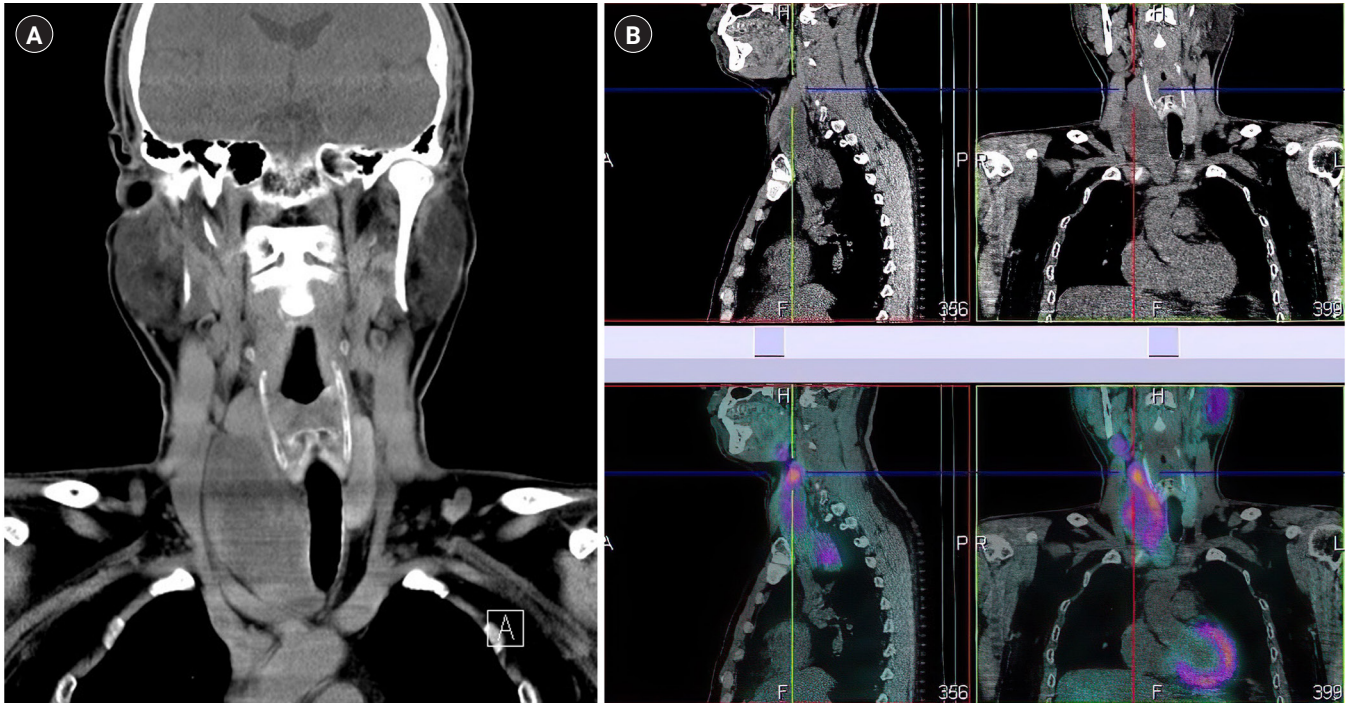


Figure 1. Computed tomography (A) and Tc-99m sestamibi scintigraphy (B) of the right neck tumor with intrathoracic extension. Upon contrast enhancement, the mass was relatively hypodense compared to the thyroid parenchyma. Persistent, heterogeneous sestamibi uptake was evident during delayed imaging in scintigraphy.

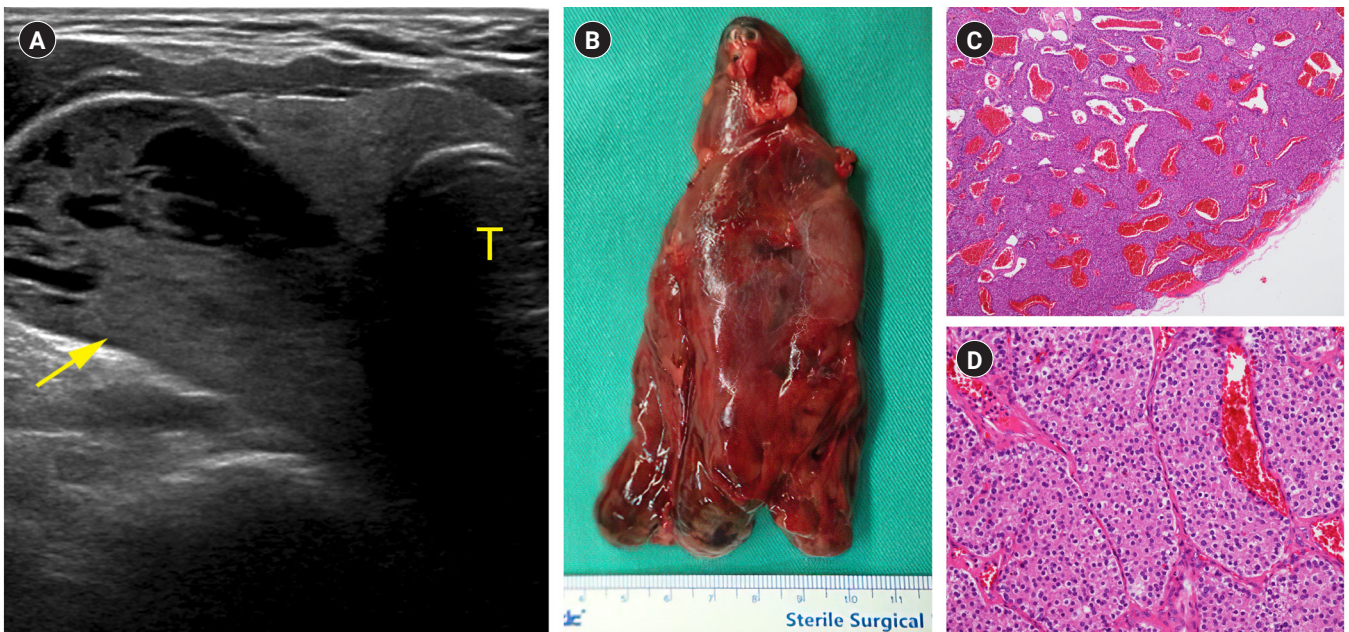


Figure 2. Characterization of giant parathyroid adenoma: ultrasound, gross examination, and histology. (A) Neck ultrasound shows a hypoechoic complex nodule with solid and cystic components (arrow) situated behind the right thyroid. (B) Gross examination of the surgical specimen revealed a well-circumscribed lobular mass measuring 11.4 cm in length. (C) Histological examination of the giant parathyroid adenoma disclosed that the lesion consists of chief cells intermingled with dilated vessels (hematoxylin and eosin stain, 40 \times). (D) There were no signs of atypia or malignancy (hematoxylin and eosin stain, 200 \times). T, trachea.

entiation from parathyroid carcinoma can be challenging.

Conflicts of interest

All authors have no conflicts of interest to declare.

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Data sharing statement

The data presented in this study are available upon reasonable request from the corresponding author.

Authors' contributions

Conceptualization, Data curation: All authors

Writing—original draft: YH, SPC

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