

# Euthyroid enlargement of the thyroid gland

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## CASE REPORT

A 60-year-old woman presented with hoarseness, dyspnoea, dysphagia, and anterior neck discomfort. Physical examination revealed an enlarged thyroid with substernal extension. A computed tomography (CT) scan of the neck and chest revealed diffuse homogenous enlargement of both the thyroid lobes extending to the mediastinum and associated with tracheal compression (*figure 1*). No cervical or mediastinal lymphadenopathy was detected. The patient was in euthyroid state biochemically and clinically.

The patient's compressive symptoms resolved after performing a total thyroidectomy. Pathology revealed evidence of fibrosis surrounding small nodules of residual follicles with massive infiltration by plasma cells (*figure 2*).

## WHAT IS YOUR DIAGNOSIS?

See page 429 for the answer to this photo quiz.

Figure 1.

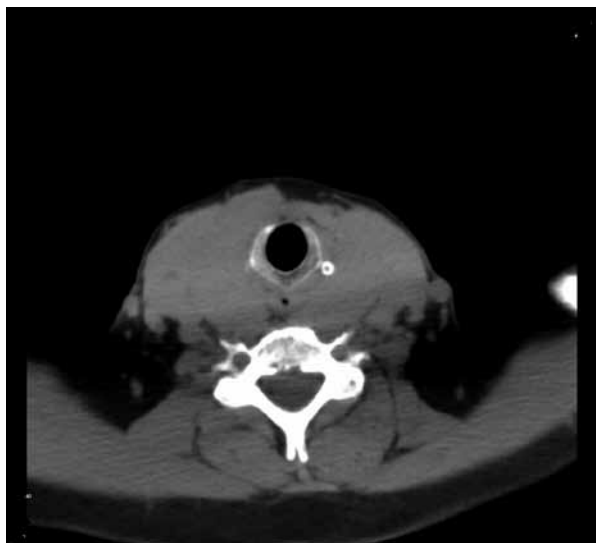
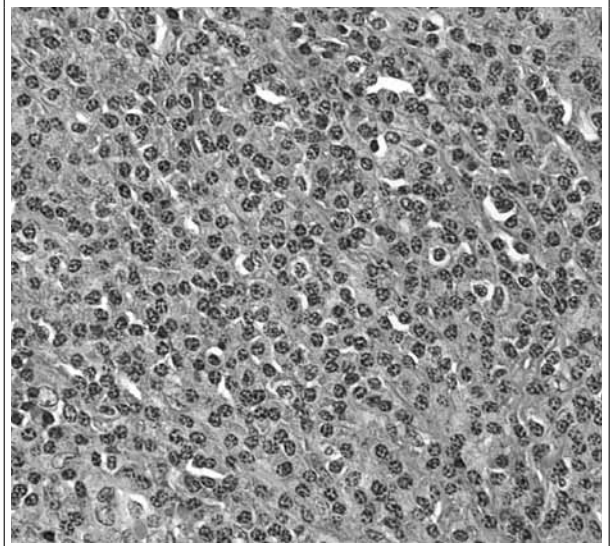


Figure 2.



## DIAGNOSIS: PLASMACYTOMA IN THYROID

The massive infiltration of the thyroid by plasma cells is consistent with thyroid plasmacytoma. The plasma cell infiltrate was mostly of the kappa type. Immunoperoxidase stains for polyclonal kappa and lambda revealed cytoplasmic staining for kappa in 99% of the cells with staining for lambda in less than 1%. Serum protein electrophoresis showed a mildly elevated gamma globulin band of 1.8 g/dl (range: 0.5 to 1.5 g/dl) and a postoperative radioiodine scan was negative for any evidence of residual thyroid tissue.

Plasmacytoma is a rare tumour of the thyroid gland with only 46 cases reported.<sup>1</sup> The head and neck are the most common sites of isolated extramedullary plasmacytoma, whereas liver, spleen, and lymph nodes are the most frequent extramedullary sites of involvement in systemic multiple myeloma. Extramedullary plasmacytoma may be a primary isolated lesion with or without affected lymph nodes or an extramedullary manifestation of systemic multiple myeloma.<sup>2</sup> CT and magnetic resonance imaging are the imaging methods of choice for demonstrating extramedullary manifestations of systemic or isolated plasmacytoma. CT and ultrasound are both useful in guiding biopsies.<sup>3</sup> Although, fine needle aspiration (FNA) has been widely used in the diagnosis of nodular thyroid disorders, there have been limited experiences with preoperative

diagnosis of thyroid plasmacytomas. With FNA, a thyroid plasmacytoma can be mistaken for thyroid lymphoma and even medullary carcinoma.

Plasmacytoma can be treated non-surgically using thalidomide-dexamethasone combination treatment or radiation therapy. Plasmacytoma without medullary lesions has a favourable prognosis (15 years survival rate of 78%) when treated locally by irradiation and/or surgery.<sup>1</sup> Surgical intervention is safe and radiation therapy should be considered in patients with soft tissue and long bone metastases, due to the associated complications. Long-term follow-up is recommended to monitor for possible progression to multiple myeloma.<sup>4</sup>

## REFERENCES

1. Galieni P, Cavo M, Pulsoni A, et al. Clinical outcome of extramedullary plasmacytoma. *Haematologica*. 2000;85(1):47-51.
2. Saif MW, Greenberg BR. Dysphagia secondary to a solitary plasmacytoma. *Cancer Control*. 1998;5(5):433-8.
3. De Schrijver I, Smeets P. Thyroid enlargement due to extramedullary plasmacytoma. *Jbr-Btr* 2004;87(2):73-5.
4. Saad R, Raab S, Liu Y, et al. Plasmacytoma of the larynx diagnosed by fine-needle aspiration cytology: a case report. *Diagn Cytopathol*. 2001;24(6):408-11.