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CYTOLOGICAL EVIDENCE OF PLASMACYTOMA OF THE THYROID

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Plasmacytoma can involve the thyroid gland rarely. It was first observed in 1938[1] and about 60 cases have been described since then. Thyroid involvement may represent the first and/or the only sign of the disease; however, it is frequently only one of the extramedullary manifestations during the course of multiple myeloma (MM).[2-5] On the other hand, some patients initially present an apparently solitary extramedullary plasmacytoma (EMP) at the time of the first clinical evaluation, but further investigation reveals a plasma cell tumor in other sites, especially bone.[6-7] One such case of thyroid plasmacytoma in addition to a bone plasma cell infiltration which evolved into MM has been described.[8] The diagnosis of EMP can be made at morphologic examination of the tumor. However, histochemistry, immunohistochemistry, electron microscopy and immunoperoxidase procedures may also be of diagnostic help.[9]

In this report we describe a patient with a plasmacytoma of the thyroid that was diagnosed at cytological examination. This 55-year-old woman had a past history of vertebral angioma (L3) that was treated both medically and with radiation therapy. She was hospitalized for abdominal pain in the right iliac region along with moderate abdominal resistance and radiological evidence of osteolytic lesions of the ribs and pelvic girdle.

The family history was negative for both thyroid and blood disorders.

Superficial lymphadenopathy was absent. Physical examination revealed thyroid hypertrophy with a painless, mobile, parenchymous nodule in the inferior portion of the right lobe. All other organic systems appeared normal. Palpation for deep abdominal pain gave a positive Blumberg sign. A tentative diagnosis of cancer involving the thyroid gland with metastases to the bone was formulated.

Thyroid scintigraphy revealed gross enlargement (with thyroid function near the upper limits) and non-homogeneous distribution of the radioisotope due to an extended area of hypofunctional tissue in the inferior two thirds of the right lobe. Ultrasound examination confirmed the presence of a smooth, round, solid, hypoechogenic nodular formation (3.5×4 cm). A fine-needle aspiration of the right thyroid lobe was performed. Cytological examination revealed a marked infiltration of polymorphous plasma cells that almost totally replaced the thyroid tissue (Figure 1).

Laboratory findings were: 164 mg/dL blood urea nitrogen, 4.8 mg/dL blood creatininemia and 3 mL/min creatinine clearance. Agarose gel electrophoresis of both serum and concentrated urine revealed a monoclonal band of λ light chain in the $\alpha 2$ region. Furthermore, another enlarged IgD monoclonal band was observed in the γ-anodic region. The marrow showed a plasma cell infiltration greater than 80%.

The patient was started on dialysis plus chemotherapy and radiotherapy, but her general condition never returned to normal. Response to treatment was influenced by the general extension of the disease and the patient died of acute renal failure 17 months after radiation.

EMP of the thyroid is very rare and about 60 cases have been reported so far. The age of patients ranges from 39 to 82 years and the male to female ratio was 44 to 56%. Patients

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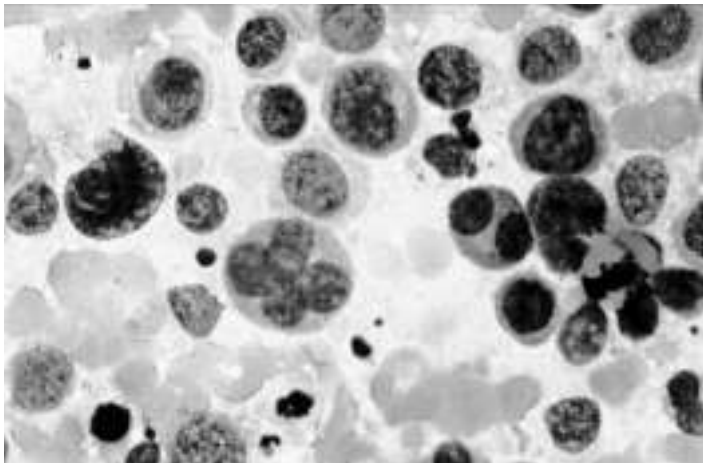

Figure 1. Plasmacytoma of the thyroid. Uni- and multinucleate plasma cells of varying size. MGG x 400.

with thyroid plasmacytomas are usually admitted to hospitals with a slow growing diffuse or nodular goiter. The presence of a monoclonal protein peak in the serum and/or bone lesions has been documented. In most of the cases reported, a diagnosis of plasma cell neoplasm is made only after histological examination of the thyroid. In our case, a cytologic diagnosis of plasmacytoma was made with fine-needle aspiration. In addition to the cytologic findings of the thyroid gland, the diagnosis could have been determined by the presence of bone pain, renal impairment and plasmacytosis in the marrow. However, fine-needle biopsy facilitated a safe, rapid diagnosis of the disease. In keeping with the outstanding features of IgD myeloma, our patient showed extraosseous lesions and renal failure. The outcome of our patient was similar to that of other cases of multiple myeloma with thyroid involvement at diagnosis reported in literature.[10] However, there have been no other reports showing cytological findings of plasmacytoma of the thyroid to date. This paper documents the accuracy and clinical utility of FNAB for the diagnosis of both primary and recurrent hematopoietic malignancies of the thyroid.

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