

## Images in Thyroidology\*

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### Black Thyroid Syndrome

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**A** 46-YEAR-OLD WOMAN underwent total thyroidectomy for an enlarging nodular thyroid gland and hyperthyroidism in May 2005. Grossly, the thyroid parenchyma showed a diffuse black discoloration on cut section (Fig. 1A). Light microscopic examination demonstrated considerable amounts of black, amorphous, granular material accumulated within the colloid (Fig. 1B). On higher magnification, the surrounding thyroid follicular cells were also filled with coarse, dark brown intracytoplasmic pigment (Fig. 1C). Electron microscopy showed this dark pigment to be confined within the lysosomes (Fig. 1D). These findings were consistent with benign nodular "black thyroid syndrome."

The patient reported a history of intermittent tetracycline treatment for acne vulgaris throughout her early teens. The patient's teeth also showed slight discoloration (Fig. 2), which has been associated with long-term tetracycline use (1).

Black thyroid syndrome, in association with tetracycline use, was first reported in 1976. Since then, at least 30 such cases have been published (2). The exact mechanism of tetracycline staining is not known, although tetracycline oxidation by thyroid peroxidase has been suggested (3). Although most cases of black thyroid syndrome are incidental findings and clinically insignificant, patients with long histories of using minocycline, a tetracycline derivative, have presented with nodular hyperplasia, adenomas, and papillary and follicular carcinomas (4). Although experimental models have suggested an antithyroid effect of the drug (5), no carcinogenic role has been ascribed to minocycline or other tetracyclines.

Most of the reviewed literature regarding black thyroid syndrome consists of case reports. Longitudinal clinical trials are necessary to better understand the prevalence, etiology, and clinical presentation of tetracycline staining in the adult population.

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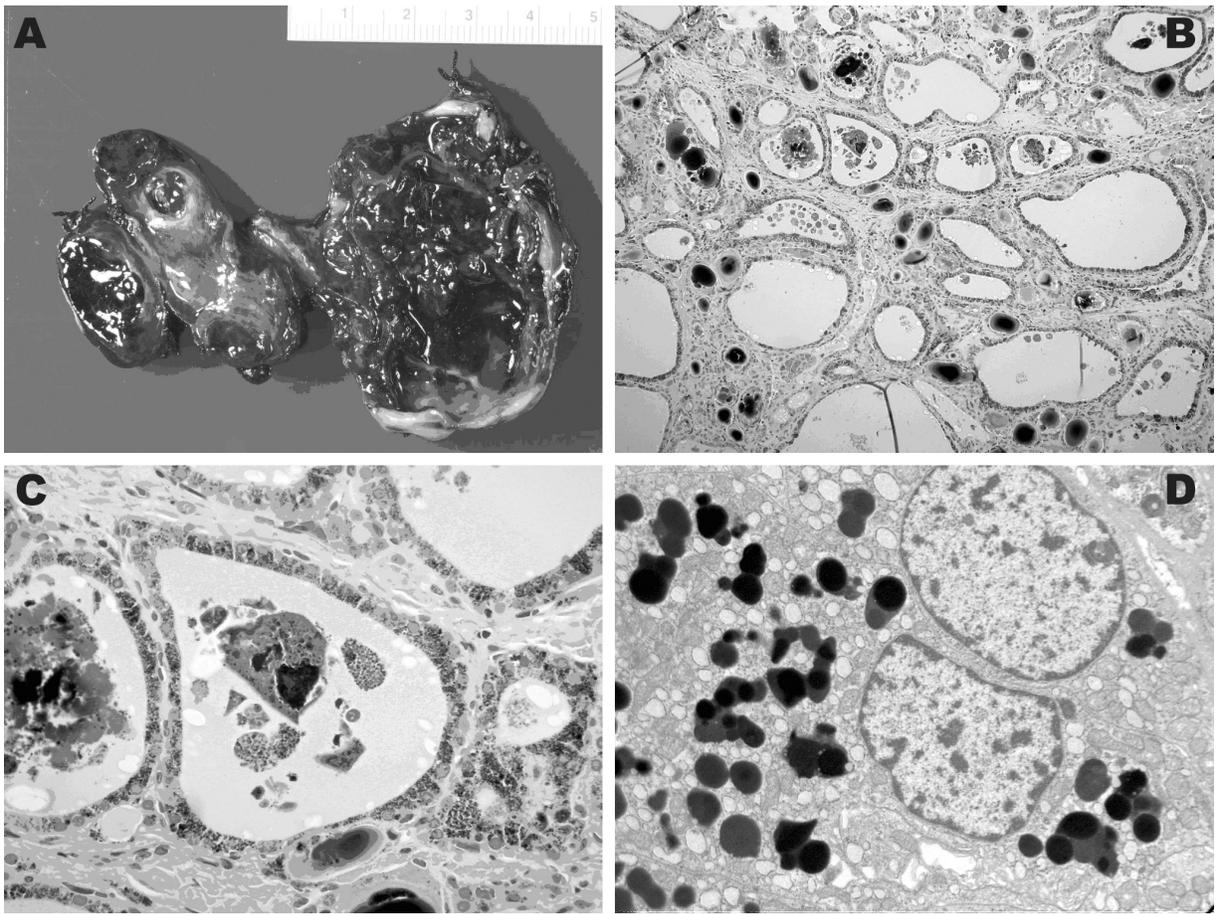


FIG. 1.



FIG. 2.