

## "Owl Eye" Sign in Thyroid Nodule of Papillary Carcinoma: Case Report

Richard Ravel

*St. Francis Hospital, Miami Beach, Florida*

*A cold area within a benign autonomous thyroid nodule comprises the "owl eye" sign. A case of thyroid carcinoma is presented whose scan appearance simulates that of a benign autonomous nodule with the "owl eye" sign.*

**J Nucl Med 17: 985, 1976**

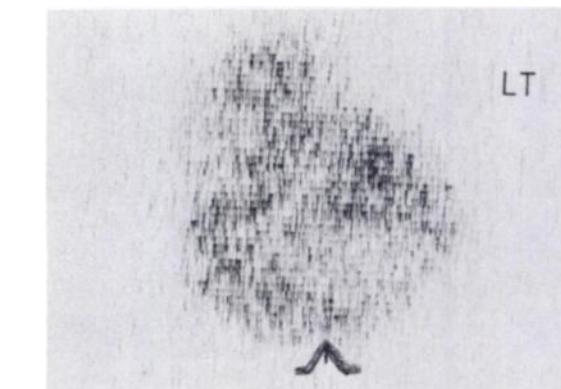
Several years ago, Ashkar and Smoak (1) described the "owl eye" sign in autonomous thyroid nodules. This consisted of a nonfunctioning area within the confines of a functioning autonomous thyroid nodule. The thyroid scan appearance was that of a nodule of normal or increased radionuclide concentration completely surrounding a "cold" area of nonfunctioning tissue. All the 46 patients in their study possessed autonomous nodular goiters; of these, 58% displayed some version of the "owl eye" sign. Ashkar and Smoak concluded that a nonfunctioning area within an otherwise normally functioning discrete nodule did not indicate malignancy. The present report describes a papillary thyroid carcinoma presenting on scan as a functioning nodule with the "owl eye" sign.

### CASE REPORT

An 82-year-old white woman was seen by a physician because of a slowly growing neck mass of 1 year's duration. This mass was easily palpable. A thyroid scan (90  $\mu$ Ci of  $^{131}\text{I}$ ) showed a large discrete nodule (Fig. 1), consisting of a large irregular hypofunctional area surrounded by a rim of apparently normal function. A lobectomy was performed on the following day because of pressure symptoms, as well as for cosmetic reasons. The specimen measured  $7 \times 5.5 \times 4.5$  cm and was oval in shape. Microscopy showed that the entire nodule was papillary carcinoma. Although some small regions of fibrosis were present, these could in no way account for the total region of hypofunction seen on scan.

### DISCUSSION

This case differs in two respects from those of Ashkar and Smoak. Each of their patients received thyroid-stimulating hormone (TSH) in order to confirm nonfunction in the cold area, and each of their



**FIG. 1.** "Owl eye" sign in nodule of thyroid carcinoma.

patients had an autonomous nodular goiter as a prerequisite for inclusion in that study. In the present case, TSH stimulation was not possible during the short interval between scan and operation, and the mass was carcinoma rather than autonomous nodular goiter. The point Ashkar and Smoak wished to make was that an area of hypofunction within an autonomous nodule did not represent an area of carcinoma within that nodule. Therefore, technically, this case is not an exception to their report. From a practical standpoint, however, it shows that a thyroid carcinoma may simulate the scan appearance of a benign autonomous nodule with the "owl eye" sign.

### REFERENCE

1. ASHKAR FS, SMOAK WM: "Owl eye" sign of benign autonomous thyroid nodule. *JAMA* 214: 1563, 1970

Received March 25, 1976; revision accepted May 10, 1976.  
For reprints contact: Richard Ravel, Nuclear Medicine Sect., St. Francis Hospital, 250 West 63rd St., Miami Beach, FL 33141.