
갑상선의 유두상 암종과 동반된 유리질 소주형 선종의 세침흡인 세포학적 소견

- 1예 보고 -

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= Abstract =

Cytologic Features of Fine Needle Aspirates of Hyalinizing Trabecular Adenoma with Occult Papillary Carcinoma of the Thyroid - A Case Report -

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Hyalinizing trabecular adenoma of the thyroid gland is a rare benign neoplasm predominantly diagnosed in middle-aged women. Carney et al. first described this entity that may mimic paraganglioma, medullary carcinoma and papillary carcinoma in 1987. We describe cytologic and histopathologic features of a case of hyalinizing trabecular adenoma combined with occult papillary carcinoma in the opposite lobe. A 55-year-old woman presented with nontender palpable mass of the right neck for 6 months. The aspirate was cellular and contained small clusters and sheets of epithelial cells with abundant filamentous, vacuolated, and ill-defined cytoplasm. The nuclei were slightly pleomorphic and showed nuclear overlapping, nuclear grooves, and intranuclear cytoplasmic inclusions. Histologic examination showed hyalinizing trabecular adenoma in the right lobe and occult papillary carcinoma in the left lobe.

Key words: Thyroid, Fine needle aspiration cytology, Hyalinizing trabecular adenoma, Papillary carcinoma.

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INTRODUCTION

Hyalinizing trabecular adenoma (HTA) is a rare encapsulated neoplasm of the thyroid gland. It was first described as a distinct clinicopathologic entity by Carney et al.¹⁾ Its cytologic and histologic features are similar to those of papillary and medullary carcinomas of the thyroid. Some reports described the cytologic features of HTA.²⁻⁷⁾ But, few reports have described the fine needle aspiration cytology (FNAC) finding of HTA combined with occult papillary carcinoma of the contralateral lobe. We describe the cytologic, histologic and immunohistochemical findings of HTA with occult papillary carcinoma.

CASE REPORT

1. Clinical findings

A 55-year-old female presented with a six-month history of a right thyroid mass without evidence of thyroid dysfunction. Ultrasonographic evaluation showed a 3cm, solid nodule in the right lobe of thyroid. Radionuclear scan showed a cold nodule in the right thyroid gland. A preoperative cytologic diagnosis was made as papillary carcinoma of the right thyroid gland. The left lobe showed no mass lesion. Total thyroidectomy was done.

2. Cytologic findings

Specimen obtained from the right lobe of the thyroid showed moderate cellularity without colloid material. There were some monolayered sheets of follicular epithelial cells (Fig. 1A) showing abundant, ill-defined, fibrillary, and granular cytoplasm (Fig. 1B and C). The nuclei were round or oval and slightly pleomorphic with finely dispersed chromatin. Nuclear crowding and overlapping were noted. Many nuclei showed pseudoinclusions (Fig. 1D). Linear nuclear grooves were noted in a few nuclei (Fig. 1C). No psammoma bodies were seen. Based on these findings, the differential diagnosis for this lesion included papillary carcinoma.

FNAC of the left thyroid gland was not performed.

3. Histologic findings

On gross examination, the cut surface of thyroid showed a tan brown-colored solid nodule, measuring 3.4 × 2.3 × 1.2 cm, located within the right lobe. The nodular mass demonstrated a relatively uniform parenchyma with thin capsule. No foci of hemorrhage or necrosis was present. The left lobe showed an ill-defined tiny nodule, measuring 0.3 cm in diameter.

Microscopically, the tumor from the right lobe had a thin, fibrous capsule (Fig. 2A). The tumor cells were arranged in closely packed trabeculae or alveolar pattern (Fig. 2B) and small nests separated from each other by a hyalinized stroma rich in small blood vessels and capillaries. There were also collagen bundles in the stroma. The tumor cells were large, polyhedral, and spindled, and showed abundant pink, finely granular cytoplasm with indistinct cell borders. Their nuclei were large and oval to round, but many nuclei disclosed irregular and angulated contours. Many nuclei showed intranuclear pseudoinclusions and some intranuclear grooves (Fig. 2C and D). No psammoma bodies or definite papillary structures were found. The tumor cells showed positive immunostaining for thyroglobulin, but negative immunostaining for calcitonin, Ki-67, and p53. The immunostainings for low molecular weight cytokeratin and high molecular weight cytokeratin were not contributory. Based on the above findings, the diagnosis of hyalinizing trabecular adenoma of the thyroid gland was made.

The tumor from the left lobe showed some papillary fronds lined by large polyhedral cells. Most nuclei showed ground glass appearance with intranuclear pseudoinclusions and intranuclear grooves (Fig. 3). It was diagnosed as occult papillary carcinoma.

DISCUSSION

Hyalinizing trabecular adenoma (HTA) is a rare, benign neoplasm of the thyroid that usually arises in adult women. Carney et al.¹⁾ described HTA as an encap-

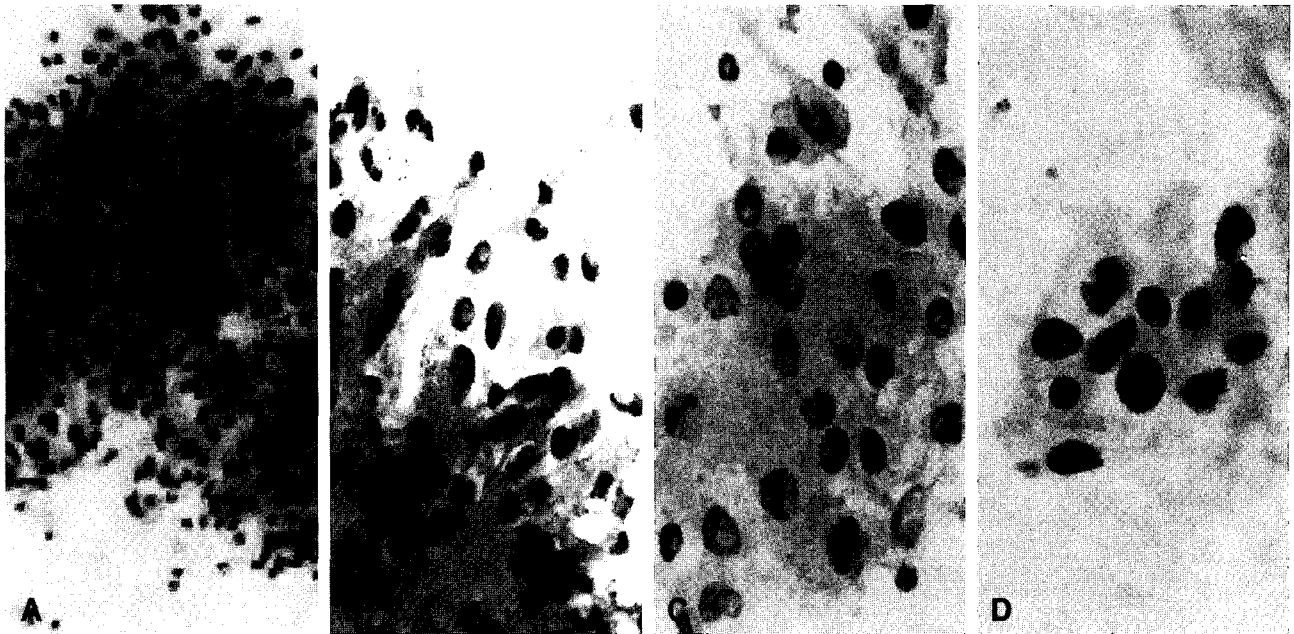


Fig 1. FNA smear from the right lobe of thyroid. A : A sheet of tumor cells shows crowded nuclei (H - E). B : Clusters of epithelial tumor cells have ill-defined cytoplasm and slightly pleomorphic nuclei (H - E). C, D : The nuclei of the tumor cells show intranuclear grooves and pseudoinclusions (H - E).

sulation or circumscription of the nodule, a solid microscopic appearance, a trabecular pattern of polygonal, oval and/or spindle neoplastic cells, hyalinized stroma, the presence of pseudofollicles and nuclear pseudoinclusions, and cytoplasmic immunostaining for thyroglobulin and negative immunostaining for calcitonin.

The characteristic cytologic, histologic, and immunohistochemical features are well represented by some authors.^{8,9)} There are a few reports of HTA that coexists with papillary carcinoma¹⁰⁾ and often exhibits papillary carcinoma-like microscopic features such as intranuclear grooves, pseudoinclusions, and psammoma body formation. The presence of RET/PTC gene rearrangement in HTA also represents similar molecular genetics with papillary carcinoma. Based on these observations, a number of authors have hypothesized that these two entities are related and may in fact have a similar pathogenesis and biologic behavior. Therefore, they suggested that HTA might be a variant of papillary carcinoma.^{11,12)}

But other studies of the HTA and papillary carcinoma represent the different expression pattern of cytokeratin 19, high molecular weight (HMW) cytokeratin¹³⁾ and

MIB-1.¹⁴⁾ HTA showed negative staining for cytokeratin 19 and HMW cytokeratin but positive staining for MIB-1, whereas papillary carcinoma showed strong positive staining for cytokeratin 19 and HMW cytokeratin but negative staining for MIB-1. These results do not support the suggestion that HTA is a variant of papillary carcinoma.

HTA can also pose diagnostic difficulties in the differentiation from medullary carcinomas of the thyroid. The presence of spindle cell forms, dispersed cellularity, and amorphous amyloid like material in the aspirates of some of these lesions can lead to the diagnosis of medullary carcinoma. But, positive staining for thyroglobulin coupled with negative staining for calcitonin excludes a diagnosis of medullary carcinoma.

Our cases showed nuclear enlargement, nuclear pseudoinclusions, and ground glass appearance that resembled papillary carcinoma. The cytologic diagnosis was 'suspicious of papillary carcinoma'. Total thyroidectomy was done devoid of intraoperative frozen section. The resected specimen showed characteristic morphologic patterns of HTA. The tumor cells showed positive immunostaining for thyroglobulin, but negative

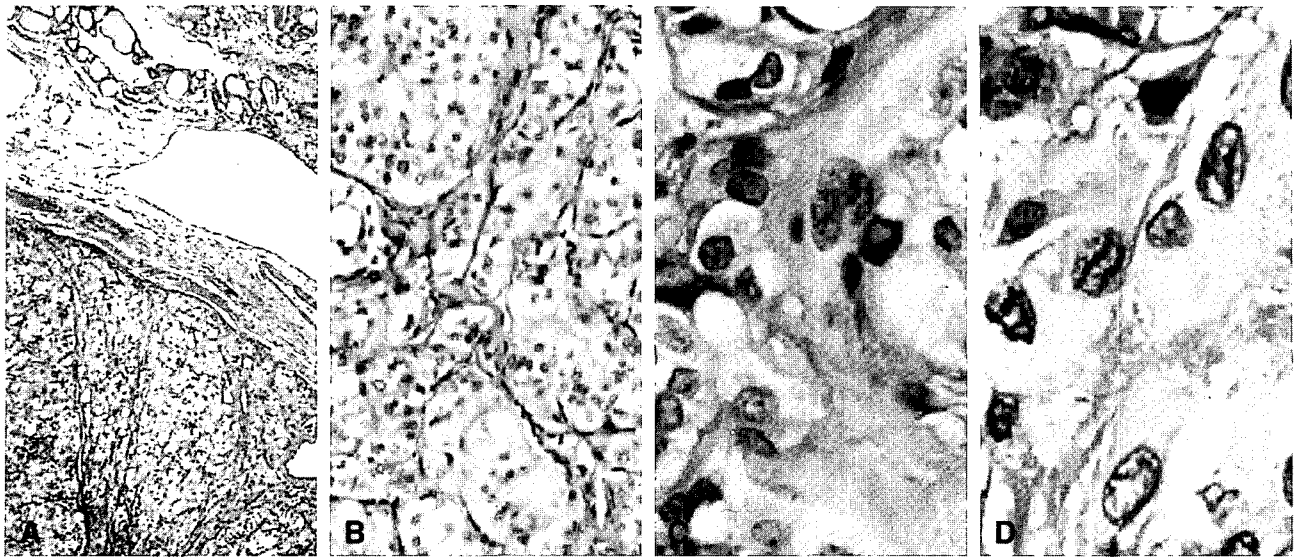


Fig 2. Histologic finding from the right lobe of thyroid. A : The tumor is encapsulated by a well-developed fibrous capsule. B : The tumor cells are arranged in alveolar pattern. C : The nuclei of the tumor cells show intranuclear pseudoinclusion. D : The nuclei of the tumor cells show intranuclear grooves.

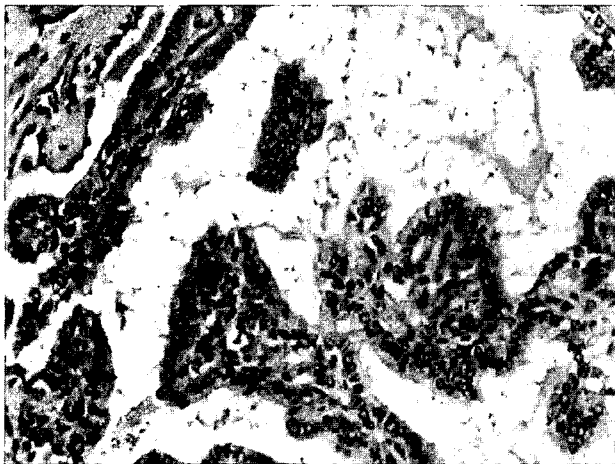


Fig 3. Histologic finding from the left lobe of thyroid. There are well-developed papillary structure with intranuclear grooves and inclusions.

immunostaining for calcitonin, Ki-67, and p53.

The nuclear features were the main reason for considering the diagnosis of papillary carcinoma in the cytologic material.⁶⁾ The presence of nuclear grooves and pseudoinclusions strongly urges the cytopathologist to include papillary carcinoma in the differential diagnosis. However, other cytologic criteriae for papillary carcinoma, like papillary structure, psammoma bodies, and other cytologic features, such as squamous

metaplasia of the cytoplasm, relatively distinct cytoplasmic borders, and prominent nucleoli, may be the clue to distinguish an HTA from a papillary carcinoma. The cytologic differential diagnosis between a HTA and a papillary carcinoma of the thyroid is difficult on routinely stained cytologic material. But, The cytologic diagnosis of HTA should be considered in thyroid lesions with nuclear grooves and/or pseudoinclusions that lack other diagnostic criteria for papillary carcinoma.

We report a HTA misdiagnosed as papillary carcinoma in cytologic smears that have numerous intranuclear pseudoinclusions with some grooves in the right lobe and occult papillary carcinoma in the left lobe.

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