

Evaluation of Immunohistochemical Expression of CK19 in Papillary Thyroid Carcinoma and Grave's Disease with Papillary Changes

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Abstract

Background	Immunohistochemistry seems to be important method for differentiation between papillary thyroid carcinoma which is the commonest thyroid cancer and Grave's disease which may be challenging by light microscopic features only.
Objectives	The aim of the study was to evaluate the immunohistochemical expression of CK 19 antibody that is considered a marker of malignancy in papillary thyroid carcinoma and in Grave's disease and to determine whether CK19 is effective in the discrimination between these two pathological conditions.
Methods	In this retrospective study paraffin embedded archival materials from 40 cases including 20 papillary thyroid carcinoma and 10 Grave's disease in addition to ten normal thyroid tissue were used as a control group, collected from the department of pathology of Al-Yarmook Teaching Hospital for the period between Jan 2009 to Jan 2011. The immunohistochemical expression of CK19 markers was assessed for intensity and extent of staining in semiquantitative method.
Results	Sixteen of the 20 papillary carcinomas showed diffuse and intense cytoplasmic staining with CK19 (80%), 4 cases showing diffuse faint staining (20%). Seven of the 10 Grave's cases (70%) are completely negative. The remaining 3 cases showing focal weak staining with CK19 (30%). There was a significant difference in the extent of staining between papillary thyroid carcinoma and Grave's disease and there was highly significant difference in intensity of staining between them.
Conclusions	The staining features of CK19 may be helpful in the differential diagnosis between papillary carcinoma and Grave's disease with papillary carcinoma like structures. This immunoreactivity should be evaluated with histopathological findings in order to prevent over diagnosis of papillary carcinoma.
Keywords	CK19 immunohistochemical expression, papillary thyroid carcinoma, Grave's disease.

Introduction

Papillary thyroid carcinoma is the commonest thyroid cancer ⁽¹⁾ and there is a marked increase in its incidence through the recent decades ⁽²⁾.

The identification of papillary thyroid carcinoma relied on the presence of papillary architecture. The current accepted diagnosis of this entity is based on nuclear features that include optical clearing, elongation, overlapping and irregular

contours with grooves and pseudoinclusions ⁽³⁾. However, identification of these features remains at times controversial and the distinction of papillary carcinoma from other benign thyroid lesions with papillary features can be difficult.

One of these benign lesions is the autoimmune hyperthyroidism (Grave's disease) that is predominantly seen in females. In Grave's