

Expression of Galectin 3, HBME1 and CK19 in benign and malignant thyroid lesions

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LIST OF ABBREVIATIONS

CK 19	Cytokeratin 19
WHO	World Health Organization
H&E	Hematoxylin and Eosin
+	Positive
-	Negative

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INTRODUCTION

Introduction

The accurate diagnosis of well differentiated thyroid tumors is very important for clinical management of patients (Nakamura et al., 2006).

Circumscribed lesions having follicular pattern of growth like encapsulated papillary thyroid carcinoma (follicular variant) and microinvasive follicular thyroid carcinoma can cause lots diagnostic problems in their distinction from benign lesions as follicular adenoma and hyperplastic thyroid nodules with abnormal nuclear features (Nasr et al, 2006).

On the other hand, the entities described by Williams (2000) called "Follicular tumor of uncertain malignant potential" and " Well differentiated tumor of uncertain malignant potential" cause lots of confusion for clinicians.

Even Grave's disease that may coexist with all types of thyroid cancer , especially papillary carcinoma , can show foci having vesicular nuclei and papillary formations , which makes the differential diagnosis between a true papillary carcinoma and foci mimicking papillary carcinoma very challenging by light microscopic features only (Erkilic & Kocer, 2005).

AIM OF THE WORK

Aim of the work

- 1- To assess the utility of the immunohistochemical markers (CK 19, HBME-1, and Galectin 3) either used singly or in combination to differentiate benign and malignant thyroid lesions, especially well differentiated papillary and follicular carcinoma from follicular adenoma.
- 2- To assess the utility of these markers in differentiating papillary and follicular thyroid carcinomas.

REVIEW OF LITERATURE

Embryology

The thyroid anlage arises as bilateral vesicular tissue in the foramen cecum of the tongue. The anlage is visible by day 17 of fetal life as an endodermal structure in the fetal pharynx in close association with the embryonic heart (Rosai et al., 1992). It subsequently descends as part of the thyro-glossal duct to the neck. Although the thyro-glossal duct usually becomes atrophic, remnants of thyroid tissue may persist along this path of descent. After the thyro-glossal duct atrophies, the thyroid anlage begins to expand laterally. Around the seventh week of embryonic life, the median portion of thyroid anlage meets the lateral thyroid. Between 9 and 12 weeks of development follicle formation continues, and colloid production ensues at 12 weeks. By 14 weeks, well developed colloid filled follicles are evident (Rosai et al., 1992).

The C cells, which are derived from the neural crest, migrate to the ultimobranchial bodies and are subsequently incorporated into the thyroid gland and derived from branchial pouch complexes IV and V and develop during weeks 5 to 7 of fetal life. Before they regress, at about 9 weeks before term, parathyroid IV separates from the ultimobranchial component (LeDouarin et al., 1974).

Anatomy

The macroscopic appearance of the normal adult thyroid gland is that of a bilobate organ in the mid portion of the neck, immediately in front of the larynx and trachea. The two lobes are joined by the isthmus. Each lobe has a pointed superior pole and a blunt inferior pole. The isthmus lies across the trachea anteriorly below the level of the cricoid