immunoreactivity should be evaluated with histopathological findings in order to prevent over diagnosis of papillary carcinoma. Other tumor markers had been studied in Iraqi patients with thyroid carcinoma like estradiol, progesterone [21] and tumor suppressor gene P53 [22].

References

1. Sahoo S, Hoda SA, Rosai J, et al. Cytokeratin 19 Immunoreactivity in the Diagnosis of Papillary Thyroid Carcinoma. Am J Clin Pathol. 2001; 116: 696-702.
2. El-Demellawy D, Ahmed N, Alowami S. Application of CD56, P63 and CK19 immunohistochemistry in the diagnosis of papillary carcinoma of the thyroid. Diagn Pathol 2008; 3: 5-16.
3. Cheung C, Ezzat S, Freeman J, et al. Immunohistochemical Diagnosis of Papillary Thyroid Carcinoma. Mod Pathol. 2001; 14(4): 338-42.
4. Rosai J. Thyroid gland. In Rosai J, (ed). Rosai and Ackerman's surgical pathology. 9th ed. St. Louis, MO: Mosby; 2004. p. 515-94.
5. Eekilic S, Koçer NE. The Role of Cytokeratin 19 in the differential diagnosis of true papillary carcinoma of thyroid and papillary carcinoma-like changes in Grave's disease. Endocr Pathol. 2005; 16(1): 63-6.
6. Erkilic S, Aydin A, Kocer NE. Diagnostic utility of cytokeratin 19 expression in multinodular goiter with papillary areas and papillary carcinoma of thyroid. Endocr Path. 2002; 13(3): 207-11.
7. Raphael SJ. The meanings of markers: ancillary techniques in diagnosis of thyroid neoplasia. Endoc Pathol. 2002; 13(4): 301-11.
8. Stone MR, O'Neill A, Catino D, et al. Specific interaction of the actin-binding domain of dystrophin with intermediate filaments containing keratin 19. Mol Biol Cell. 2005; 16(9): 4280-93.
9. Birchmeier W, Hülsken J, Behrens J. E-cadherin as an invasion suppressor. Ciba Found Symp; 1995; 189: 124-36.
10. Seckin S, Karagece U. Expression of CK-19, cErbB2, galectin-3, and p53 in papillary thyroid carcinomas. Turk J Med Sci. 2010; 40(2): 207-12.
11. Judkins AR, Roberts SA, Livolsi VA. Utility of immunohistochemistry in the evaluation of necrotic thyroid tumors. Hum Pathol. 1999; 30: 1373-6.
12. Raphael SJ, Apel RL, Asa SL. Brief report: detection of high-molecular-weight cytokeratins in neoplastic and non-neoplastic thyroid tumors using microwave antigen retrieval. Mod Pathol. 1995; 8(8): 870-2.
13. Raphael SJ, McKeown-Eyssen G, Asa SL. High-molecular-weight cytokeratin and cytokeratin-19 in the diagnosis of thyroid tumors. Mod Pathol. 1994; 7(3): 295-300.
14. Bennett WP, Bhan AK, Vickery AL Jr. Keratin expression as a diagnostic adjunct in thyroid tumors with papillary architecture. Lab Invest. 1988; 58: 9A.
15. Baloch ZW, Abraham S, Roberts S, et al. Differential expression of cytokeratins in follicular variant of papillary carcinoma: an immunohistochemical study and its diagnostic utility. Hum Pathol. 1999; 30: 1166-71.
16. Shin E, Chung WY,Yang WI, et al. RET/PTC and CK19 Expression in Papillary Thyroid Carcinoma and Its Clinicopathologic Correlation. Med Sci. 2005; 20: 98-104.
17. Scognamiglio T, Hyjek E, Kao J, et al. Diagnostic Usefulness of HBME1, Galectin-3, CK19 and CITED1 and Evaluation of Their Expression in Encapsulated Lesions with Questionable Features of Papillary Thyroid Carcinoma. Am J Clin Pathol. 2006; 126: 700-8.
18. Erkilic S, Aydin A, Kocer NE. Diagnostic utility of cytokeratin 19 expression in multinodular goiter with papillary areas and papillary carcinoma of thyroid. Endocr Pathol 2002; 13(3): 207-11.
19. Casey MB, Lohse CM, BS, and Lloyd RV: Distinction Between Papillary Thyroid Hyperplasia and Papillary Thyroid Carcinoma by Immunohistochemical Staining for Cytokeratin 19, Galectin-3, and HBME-1. Endocr Pathol. 2003; 14: 55-60.
20. Rossi ED, Raffaelli M, Mule' A, et al. Simultaneous immunohistochemical expression of HBME-1 and galectin-3 differentiates papillary carcinomas from hyperfunctioning lesions of the thyroid. Histopathology. 2006; 48: 795-800.
21. Ahmed H. Evaluation of progesterone &estradiol in sera and tissue of thyroid patient. Iraqi J Med Sci. 2011; 9: 206-8.
22. Saeed N, Galoub A. Correlation between tumor suppressor gene P53 in some Iraqi patients with thyroid carcinoma by immunohistochemical assay &insitu hybridization method. Iraqi J Cancer Med Gen. 2012; 5: 168-72.

Correspondence to Dr. Ikram A. Hasan
E-mail: Ikram_alhadithi@yahoo.com
Received 10th Feb. 2013: Accepted 20th may. 2013.