Immunohistochemical study of Thyroid neoplasia

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The subject of this thesis was the study of the validity of immunohistochemi cal technique to subclassify the undifferentiated thyroidcarcinoma.For that purpose, paraffin blocks of 14 cases of undifferentiated thyroid carcinoma were collected along with 51 blocks from different thyroid neoplastic lesions covering most types as possible, whether benign or malignant which usedas control materials.Age and sex findings were reported for all cases. The paraffin, blocks were sectioned and stained for the following:H & E stain, Immunohistochemical stains using polyclonal Tg, Cal., and monoclonal CK and LCA antibodies utilizing direct PAP technique, Congo red and Grimelius stains.Microscopic examination aimed at identifying various forms of anaplastic tumor cells that were classified as predominant spindle cell anaplastic tumor 5 cases, predominant giant-cell anaplastic tumor 4 cases, mixed pattern anaplastic tumor 2 cases, squamoid cell anaplastic tumor one case and small cell anaplastic carcinoma 2 case, two of these cases were associated with differentiatedfollicular carcinoma.All cases were subjected for immunohistochemical study for epithelial and colloidal Tg. Most thyroid benign tumors 77.8% showed positive staining inSummary and Conclusion, 218both epithelium and colloid while only 46.3% of malignant tumors showed positive epithelial and colloidal Tg. Only 2 cases (14.3%) of undifferentiated tumors showed positive staining which considered as colloidal or Tg diffusion rather than synthesize by the tumor cells. The capacity of Tg production was found to depend on the degree of differentiation of malignant thyroid tumor,where well differentiated tumors showed strong and diffuse staining, which got weaker and patchy in less differentiated tumors.It was found that Tg marker was exclusively present in thyroid tumor of follicular cell origin and can be used to discriminate poorly differentiated follicular thyroid tumors from medullary thyroid tumors.Immunohistochemical study for calcitonin revealed that most cases (83.3%) of medullary thyroid tumors were positively stained. However all other benign and malignant thyroid tumors including the anaplastic tumors were negatively stained. The calcitonin immunostaining could be used as useful indicator for assessment the degree of virulence of medullary thyroid tumors.Immunohistochemical study for L.M.W. (M8,M18) CK revealed that 88.9% of follicular adenomas and 79.6% of thyroid carcinoma were positively stained. The anaplastic tumors were representing the lowest group showing positivity (64.3%); 60% of the anaplastic cases with morphologically sarcomatous appearance were positively stained, indicating epithelialdifferentiation of these tumors.Immunohistochemical study for LCA showed positivity in cases of thyroid lymphoma and cases diagnosed as small cell anaplastic thyroid tumor. So the later

cases were reclassified as lymphoma.Summary and Conclusion, 219The diagnostic electron microscopy study revealed the epithelial features of a predominant spindle cell anaplastic thyroid tumors. Also it revealed the lymphomatous nature of small cell anaplastic thyroid tumor .In this study mucin was found only in 35.2% of malignant tumors. Only one case of anaplastic tumors was positively stained for Alcian blue-stain. Silver stain for argyrophilia was demonstrated in 83.3% of medullary tumors. However, positive staining in 4 cases of anaplastic tumors was found to had no specific significance. Positive Congo red stain was observed in all cases of medullary carcinoma and 2 cases of anaplastic tumors.from this study, it is concluded that the anaplastic thyroid tumor was a tumor of elderly people with female preponderance. The Tg and calcitonin positivity reflecting the degree of differentiation and virulence of follicular and C-cell thyroid malignancies. Immunohistochemical study can assist in differentiating most anaplastic thyroid carcinomas from other neoplasms, i.e., various types of sarcomas or lymphomas, denoting that most anaplastic thyroid tumors were carcinoma.However, the question as to whether anaplastic thyroid carcinomas are of follicular derivation or of parafollicular derivation cannot be answered satisfactory and the exact histogenesis of these tumors is not defined by the current antibodies used. So a panel of carefully selected battery of monoclonal antibodies is advisable. Also, the possibility that true sarcoma may be present within the group of tumors that failed to express an inununoreactivity for current antibodies used.The valuability of diagnostic electron microscopy is well established however, retrieval of tissue from paraffin blocks may lead to loss the epithelial features. The mucin production by thyroid carcinoma is proved and can be used in detection of cancer thyroid metastasis.