Immunohistochemistry of Inflammatory myofibroblastic tumors

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Abstract

**Background:** Inflammatory myofibroblastic tumor (IMT) or inflammatory pseudotumor is a tumoral lesion which can be seen in all age groups and in all internal organs. It is in differential diagnosis with some important neoplasms such as Leiomyosarcoma, Rhabdomyosarcoma, and Sarcomatoid carcinoma. Differentiation between these tumors requires a special diagnostic tool such as Immunohistochemistry (IHC). This study aimed to identify Immunohistochemical characteristics of inflammatory myofibroblastic tumors.

**Methods:** 19 cases included in this cross-sectional study. All cases with diagnosis of "Inflammatory myofibroblastic tumor" or "Inflammatory pseudotumor" at pathobiology laboratories of Kermanshah university, Tehran Imam Khomeini Hospital and Institute of Cancer were selected and studied by using IHC stains for CK, EMA, SMA, MSA, Desmin, P53, ALK and Vimentin.

**Results:** Mean age of cases was 40.4 year. 52.6% were male and 47.4% female. Most frequent affected organs were; Stomach (4 cases), Urinary Bladder (3 cases), Small Intestine (3 cases), Lung and Mediastinum (3cases), Omentum (2 cases), Retroperitoneum (1 case), Cervix (1 case), Urethra (1 case) and gluteus Maximus Muscle (1 case). Vimentin (94.7%), MSA (57.9%) and SMA (47.4%) were the most frequent expressed IHC biomarkers in diagnosed tumors respectively.

**Conclusion:** CK is a reliable marker for differentiation between these lesions and Sarcomatoid carcinoma. For differentiation from Leiomyosarcoma, Rhabdomyosarcoma and Postoperative Spindle Cell Nodule, using Desmin is a useful biomarker. It is recommended that "IMT" be used for those lesions that express ALK and/or those that cytogenetic studies reveal a fusion of introducing genes. Other lesions should be classified and reported as "Inflammatory Pseudotumor.

**Keywords:** Inflammatory myofibroblastic tumor, IMT, IHC, ALK.

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