

Transducer-like enhancer of split 1 (TLE1) expression as a diagnostic immunohistochemical marker for synovial sarcoma and its association with morphological features

ABSTRACT

Synovial sarcoma (SS) is a malignant soft tissue tumour of uncertain histogenesis which is defined by the translocation t(X;18) that produces the fusion oncogenes SYT-SSX. The emergence of transducer-like enhancer of split 1 (TLE1) as a new immunohistochemical (IHC) marker for SS has offered an alternative to pathologists in differentiating SS from other histological mimics, especially in the setting of limited molecular facilities. We investigated the utility of IHC TLE1 expression against histomorphological features and other IHC markers in SS and non-SS tumours. Twenty-six cases of histologically diagnosed SS and 7 non-SS (for which SS was in the differential diagnosis) were subjected to TLE1 IHC staining, which was graded from 0 to 3+. Of the 26 SS cases, 12 each were biphasic and monophasic types and 2 were poorly-differentiated. TLE1 was expressed in 22/26 (84.6%) SS cases, of which 11/12 (91.7%) were biphasic, 10/12 (83.3%) monophasic and 1/2 (50%) poorly-differentiated tumours. Two of 7 (28.6%) non-SS cases were positive for TLE1. Immunopositivity of SS and non-SS cases for EMA were 20/26 (76.9%) and 2/7 (28.6%) respectively and for CK7 were 7/26 (26.9%) and 0/7 (0%) respectively. All cases were negative for CD34. Consistent histomorphological features for SS included mild nuclear pleomorphism, alternating tumour cellularity, fascicular growth pattern and thick ropy stromal collagen. In conclusion, TLE1 is not a stand-alone diagnostic IHC marker for SS. However, in the absence of molecular studies, it can contribute added diagnostic value in combination with morphological evaluation and other IHC markers such as EMA and CD34.

Keyword: Synovial sarcoma; TLE1; Morphology