Unexpected Immunoreactivity in Soft Tissue Tumors: Often Confusing, Occasionally Helpful, and Sometimes Just Plain Odd
Andrew L. Folpe, MD
Mayo Clinic, Rochester MN
folpe.andrew@mayo.edu

No Disclosures

Unexpected Immunoreactivity in Soft Tissue Tumors
  • Intermediate filaments
  • Neuroendocrine markers
  • Miscellaneous

Aberrant Patterns of Intermediate Filament and Neuroendocrine Marker Expression Which Seem to Exist Only to Torture Surgical Pathologists

Intermediate Filaments: The Good Old Days
  • Cytokeratins
    • Carcinomas
  • Vimentin
    • Sarcomas
  • Neurofilaments
    • Neural tumors
  • Glial fibrillary acidic protein
    • Gliomas
  • Desmin
    • Myogenous tumors
  • Minor intermediate filaments
Keratin

Vimentin

Sarcomatoid SCC

Keratin

Leiomyosarcoma

CK7

Epithelioid AS

CD31

Cytokeratin Expression in Epithelial Vascular Neoplasms

Keratin expression in 20% of studied ES/PNET
Desmin expression in 2% of cases; keratin expression in 32% of cases; synaptophysin and chromogranin A expression in 11%.

- Cytokeratin expression in 50%
- Expression of at least one NE marker in 43%
- Synaptophysin expression in 32%
- Chromogranin A expression in 22%
- Synaptophysin and chromogranin A expression in 11%
Peculiar Immunohistochemical Findings That May Actually be Helpful, Once You Know About Them
Other Confusing and Sometimes Wholly Unexpected Immunohistochemical Findings
CD31

Metastatic RCC

63F with arm mass and lung nodules

Keratin

Desmin

MYOD1

SOX10

TTF1

S100 protein

Pulmonary schwannoma
Conclusions

- Aberrant expression of intermediate filaments and/or neuroendocrine markers is relatively common amongst soft tissue tumors, in particular Ewing sarcoma, endothelial tumors and rhabdomyosarcoma.
- For certain mesenchymal tumors, unusual patterns of immunoreactivity may actually serve as valuable clues to the correct diagnosis.
- Careful morphological observation and application of an appropriate panel of immunohistochemical markers are critical to avoid misdiagnoses based on a single aberrant result.