Evening Specialty Conference - Genitourinary Pathology
Case 2

Sean R Williamson, MD
Henry Ford Health System, Detroit, MI
@Williamson_SR

Disclosure of Relevant Financial Relationships

USCAP requires that all planners (Education Committee) in a position to influence or control the content of CME disclose any relevant financial relationship WITH COMMERCIAL INTERESTS which they or their spouse/partner have, or have had, within the past 12 months, which relates to the content of this educational activity and creates a conflict of interest.

Dr. Williamson declares he has no conflict(s) of interest to disclose.

34 year-old man

- Widespread lymphadenopathy
  - Retroperitoneal
  - Supraclavicular
- Underwent excisional lymph node biopsy for lymphoma

Supraclavicular lymph node

Supraclavicular lymph node
Metastatic seminoma

- Can be challenging in metastatic site – limited material or DX not suspected
  - OCT3/4+
  - D2-40 (podoplanin)
  - KIT
- Caution:
  - OCT3/4 may be positive in some lymphomas

Metastatic seminoma in retroperitoneal core biopsy

OCT3/4

Patient - orchiectomy

Patient - orchiectomy

Patient - orchiectomy
Scarring in testis

- May represent spontaneous regression of germ cell tumor
- Two findings considered specific for regression:
  - GCNIS (formerly IGCNU)
  - Coarse intratubular calcification


Patient - orchiectomy

Orchiectomy – previous biopsy diagnosis of retroperitoneal embryonal carcinoma

Coarse calcification in scar

Coarse calcification in scar

Microlithiasis
Some evidence for mixed IHC pattern supporting teratoma


After chemotherapy, persistent retroperitoneal masses
After chemotherapy, persistent retroperitoneal masses

Somatic type malignancy of germ cell tumor origin
- Also known as “malignant transformation” of teratoma or secondary malignant component
- Often sarcomas
  - RMS > LMS > angio > others
  - PNET
  - Sarcoma NOS → to be discussed

Criteria for somatic malignancy
- Overgrowth of 4x magnification field
  - Approx 5 mm diameter
- Atypia not diagnostic alone
  - Even well-differentiated tissues in teratoma are derived from malignant GCT
  - Often haphazard architecture, atypia

PNET of GCT origin

ERMS of GCT origin

Myogenin – patchy in embryonal RMS, diffuse in alveolar RMS

Ulbright TM, et al. Mod Pathol. 2010;23:972-980. PNET of germ cell tumor origin lacks chr 22 rearrangement (EWSR1)

Treatment - somatic malignancy

- Surgical resection if at all possible
- Possibly chemotherapy directed against new histology — i.e. sarcoma, etc
- Traditional platinum GCT tx less likely to be successful
Differentiated skeletal muscle in teratoma

Absence of mitotic activity, necrosis, primitive cellular component utilized for distinction from embryonal rhabdomyosarcoma

Patient – liver metastases

Patient – liver metastases

Keratin

Sarcomatoid yolk sac tumor

- Behaved aggressively when high-grade
  - FNCLCC system (2-3)
- Likely an alternative pathway to some sarcomas of GCT origin that previously defied classification


Summary

- Testicular cancer can present with challenging features confounding pathology
  - Metastatic with unknown primary
  - Regression of primary tumor
- Unusual patterns
  - Transformation to sarcoma or other somatic malignancy
  - Usually post-treatment recurrences

THANK YOU

#GUPhath #USCAP2017
#insitupathologists