Evening Specialty Conference
Gynecologic Pathology
Case 3

United States and Canadian Academy of Pathology
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Elizabeth Euscher, MD
Associate Professor
Clinical Presentation

• 61 year old
• Post menopausal bleeding
• History of gastrointestinal malignancy, Stage IV
• CEA mildly elevated above baseline
• Endometrial biopsy
Diagnoses Considered

• Primary endometrial carcinoma
  – Endometrioid carcinoma, clear cell changes
  – Clear Cell carcinoma
• Other/metastatic carcinoma
Cytokeratin 7  PAX-8  Estrogen receptor
Biopsy Diagnosis:
Metastatic Colorectal Carcinoma
Clinical History

- Prior GI malignancy treated at MDACC
- Referred back for additional therapy
- Prior pathology available for review
Clinical Presentation

- 61 year old
- Post menopausal bleeding
- History of gastrointestinal malignancy, Stage IV
- CEA mildly elevated above baseline
- Endometrial biopsy
Metastatic Squamous Cell Carcinoma of the Anus
Differential Diagnosis

• Endometrial Primary
  – Variant pattern (clear cell changes, secretory features)
    • Unlikely: negative CK7, PAX8 and estrogen receptor
  – Clear cell carcinoma
    • Unlikely: negative CK7 and PAX8
Differential Diagnosis

• Metastatic Colorectal Carcinoma
  – Immuno support but now less likely:
    • Prior malignancy squamous cell ca
    • Surveillance detected no new primary lower GI malignancy
SALL-4

Villin

Glypican-3

AFP
Final Diagnosis:
Extragonadal Yolk Sac Tumor
ENDODERMAL SINUS TUMORS OF THE OVARY AND TESTIS

Comparative Morphogenesis of the So-Called Mesonephroma Ovarii (Schiller) and Extraembryonic (Yolk Sac-Allantoic) Structures of the Rat’s Placenta

Gunnar Teilum, M.D.

• Schiller, mesonephroma ovarii
• Mesonephric origin challenged by Teilum
  • Similarity to placental structures and testicular tumors
• αFP by IHC plus ultrastructural studies helped establish vitelline phenotype

YOLK SAC CARCINOMA (ENDODERMAL SINUS TUMOR)

Ultrastructure and Histogenesis of Gonadal and Extranodal Tumors in Comparison with Normal Human Yolk Sac

Francisco Nogales-Fernandez, MD, Steven G. Silverberg, MD, Paul A. Bloustein, MD, Antonio Martinez-Hernandez, MD, and G. Barry Pierce, MD
Ovarian Endometrioid Tumors with Yolk Sac Tumor Component, an Unusual Form of Ovarian Neoplasm: Analysis of Six Cases

Nogales, Francisco F. M.D.; Bergeron, Christine M.D.; Carvia, Rafael E. M.D.; Alvaro, Tomás M.D.; Fulwood, Heather R. M.B. Ch.B.
Extragonadal Yolk Sac Tumor

Younger patients

Vaginal
Sacrococcygeal
Mediastinal

Older patients

No Classic Associations
Extragonadal Yolk Sac Tumor

Younger patients
- Arrested or misplaced migration germ cells
- Met occult gonadal primary

Older patients
- Retrodifferentiation
- Pluripotential malignant stem cell
Distribution of Extragonadal Yolk Sac Tumors

- Pituitary
- Orofacial
- Thyroid
- Mediastinum
- Liver
- Stomach
- Omentum
- Kidney
- Urachus
- Bladder
- Pelvis
- Uterus
- Vaginal
- Vulva
Distribution in GYN Sites

- **Vulva**: 13 cases; median age 23 yo
  - 3 cases had another germ cell component
- **Vagina**: tumors of infancy well-documented
  - 1 cervical/vaginal primary in 27 yo
- **Fallopian tube**: 1 case, 70 yo
- **Peritoneum/omentum**: 9 cases, median age 36 yo
  - Associated immature teratoma, 1 case
- **Pelvis**: 7 cases, median age 31 yo
  - Associated immature teratoma, 1 case
Distribution in GYN Sites

- Uterus:
  - 15 cases
  - Median age 45.5 yo
  - Abnormal or post menopausal bleeding most frequent symptom, 11 cases
  - 4 pts DOD, 3 pts AWD, 8 pts NED
  - 5 cases had associated somatic component
    - 4 alive with disease or dead of disease
MDACC experience

• 1988-2015

• Clinical information:
  – Age, presentation, primary site, stage, follow-up

• Outside diagnosis

• Histologic patterns
  – Reticular, glandular, papillary, solid, Schiller-Duval bodies
  – Presence of somatic component
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<th>Age</th>
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10 primary endometrial yolk sac tumors
Presentation mimics uterine carcinoma
Somatic component in 60% of uterine primaries
Yolk sac component missed or incorrect diagnosis in 9 of the uterine tumors
Histologic pattern (typically glandular) and/or IHC overlap with a somatic tumor contributed to errors
Recognition of Schiller-Duval bodies may not be helpful; rarely present in this study
Differential Diagnosis

• Uterus:
  – Endometrioid carcinoma (clear cell change, secretory variant)
  – Clear cell carcinoma
  – Carcinosarcoma
  – Variant patterns of cervical carcinoma (gastric, intestinal)
  – Mesonephric carcinoma

• Metastatic carcinoma to the GYN tract
Yolk Sac Tumor

Endometrioid Carcinoma
Gastric type Endocx AdenoCA

Yolk sac
Yolk sac Tumor

Mesonephric CA

Yolk sac Tumor
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Take home points: Extragonadal YST

- Rare
- Wide age range
- Morphologically identical to gonadal counterpart
Take home points: Extragonadal YST

• Reasons for diagnostic challenge:
  – Presentation outside of “typical” age range
  – Morphologic overlap with somatic malignancy (glandular)
  – Immunohistochemical overlap with somatic malignancy
  – Association with somatic component
Take home points: Extragonadal YST

• Histologic clues:
  – Mixture of patterns (look for reticular pattern)
  – Primitive nuclei
  – Don’t hold out for Schiller-Duval bodies

• Immunohistochemistry:
  – Beware the CK7 (-)/CDX2 (+) endometrial tumor
Take home points

• Proper recognition is important due to treatment differences
• “If you don’t think of it, you won’t diagnose it”
Thank You