Case 4: Incidental mass noted at the time of cesarean section

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Mimics in surgical pathology

- Mimic
  - ~150 mentions in USCAP program
    - Pseudo-, like, old
- Imitation
- Disguise
- Pitfall
  - "pitfall" ~130 mentions
- Mimicry may provide biologic insight

Clinical History

- 30 year old woman, G3P2, full-term onset of labor
  - Routine prenatal care since 8 weeks gestation
  - Failure to progress → cesarean delivery
  - Friable mass noted between posterior uterus and rectum/sigmoid
    - "Stuck-on"
    - Removed via blunt dissection
  - The specimen was sent for intraoperative frozen section diagnosis
Case 4: Incidental mass noted at cesarean section

Differential diagnosis

- Ectopic decidua
- Inflammatory myofibroblastic tumor
- Deciduoid mesothelioma
- Leiomyoma/leiomyosarcoma
- GIST
- PEComa
- Endometrial stromal sarcoma
- Squamous cell carcinoma
Case 4: Incidental mass noted at cesarean section

Additional IHC...
- Desmin: focal (very)
- SMA: focal (very)
- Keratins (AE1/3, CAM5.2), S100, SOX10, melanA, HMB-45, CKIT, DOG-1, p63, and PAX8: all NEGATIVE

Differential diagnosis
- Ectopic decidua
- Inflammatory myofibroblastic tumor
- Desmoids: mesenchymal
  - Poor myxoid/collagenous stroma: keratin expression
- Epithelioid inflammatory myofibroblastic sarcoma
- Leiomyoma/leiomyosarcoma
  - Weak, focal nuclear reactivity in myxoid/pleomorphic areas
- GIST
  - Loss of GIST markers, distinct immunoprofile, decidualization not reported in GIST
- PEComa
  - Loss of expression of melanocytic markers
- Endometrial stromal sarcoma
  - Intrauterine mass
- Squamous cell carcinoma
  - Poor morphologic fit

Ectopic decidua—a well-known mimic
- Descriptions dating to at least the 19th century
  - Scientific Proceedings, 26th annual meeting of the American Association of Pathologists and Bacteriologists (April 2-3, 1926)
  - “Some hormone of pregnancy had acted on the blastema where it had come into contact with them, converting them into decidua cells…”
- Commonest sites: ovary, fallopian tubes, surface of the uterus and cul de sac
- Also seen in omentum, peri-aortic and pelvic lymph nodes where it may mimic metastatic SCC
- Generally incidental microscopic finding
- Rare reports of macroscopic nodules or ragged, confluent masses
Case 4: Incidental mass noted at cesarean section

Clinical History

- 30 year old woman, G3P2, full-term onset of labor
- Routine prenatal care since 8 weeks gestation
- Failure to progress → cesarean delivery
- Friable 10 cm mass noted between posterior rectum and uterus
  - Adherent to distal sigmoid colon, but not clearly emanating from this location
  - Removed via blunt dissection
- The specimen was sent for intraoperative frozen section diagnosis

Final Diagnosis

- Inflammatory myofibroblastic tumor with marked decidual change

Inflammatory myofibroblastic tumor

- Myofibroblastic tumor of intermediate biologic potential
  - Spindle-cell neoplasm
  - Variable myxoid background
  - Myxoid, fascicular, sclerotic
  - Lymphoplasmacytic inflammation
  - IHC: SMA, MSA, desmin, ALK (variable)
  - Recurrent ALK fusions
    - TPM3, TPM4, CLTC, etc.
  - ROS, PDGFRB fusions found in some ALK- cases
Inflammatory myofibroblastic tumor of the GYN tract and Placenta

• Similar to clinical and histologic features documented elsewhere
  • Potential for aggressive behavior
    • Size (>7cm), moderate to severe atypia, necrosis
    • Mitotic activity, myxoid pattern, infiltrative growth, necrosis
  • ALK+ in 75-100% (2/3 placental)
  • CD10 expression common (19/23)
  • Deceptial-like change noted focally
  • One placental case in direct continuity with decidua basalis
  
Reference: Schoolmeester and Sukov Int. J. Gynecol. Path 2016

Epithelioid inflammatory myofibroblastic sarcoma

• Aggressive intra-abdominal sarcoma
  • Male predominance
  • Epithelioid and round cells
  • Atypia, mitotic activity, necrosis
  • Neutrophilic inflammation
  • IHC: CD30, Desmin, ALK
  • Perinuclear Alk reactivity
  • RANBP2-ALK fusion
  
Reference: Mariño-Enríquez et al. AJSP 35(1) 2011

In conclusion

• A case of Inflammatory myofibroblastic tumor mimicking a mimic—ectopic decidua
  • Likely a consequence of a tumor-promoting event (ALK-rearrangement) occurring within mesenchymal cells susceptible to the effects of PR

"Evidently absorption of a chemical substance...stimulates the adhearing fibroblasts to proliferate and to change to decidual cells. Diffusion of this hormone from the uterus out through the oviducts may cause decidual formation in the mucosa of the tube and occasionally on the outside of the uterus."

F.B. Mallory, Proceedings of the AAP, 1926

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