Case 3 Clinical History

- 72 year old woman
- Admitted for evaluation of a large ovarian pelvic mass
- Pelvic exam 8 months PTA had not revealed a mass
- Treated by TAHBSO, followed by instillation of radioactive chromic phosphate into the abdomen

Case 3 Gross Pathology

- The left ovary was enlarged and cystic, 12 cm in diameter
- The capsule was intact, but there were adhesions to the uterus
- The cut surfaces revealed many cysts as well as solid areas
- The cysts were up to 10 cm and the solid areas up to 3 cm
Case 3 Diagnosis
Clear Cell Carcinoma, Adenofibromatous Type, Arising in a Borderline Clear Cell Adenofibroma

Discussion Points
- Clinical behavior: is clear cell carcinoma a high risk variant
- Growth patterns
- Histogenesis
- Histology and Immunohistochemistry – clear cells are not enough
- Diagnostic Issues
Clear Cell Carcinoma

- ~10% of ovarian cancers in the US, 20-25% in Japan
- Nonspecific symptoms
- Rarely, paraneoplastic syndromes: *Hypercalcemia, thromboembolic phenomena*
- Associated with endometriosis
- Survival results contradictory, but often viewed as poor prognosis type

Early (Stage I-II) Ovarian Carcinoma

![Graph showing distribution of different types of ovarian carcinomas](Am J Surg Pathol 28:147-159, 2004)

Survival with Clear Cell Carcinoma

![Graph showing survival rates with clear cell carcinoma](American Journal of Surgical Pathology. 2009;33(6):844-853)
Clear Cell Carcinoma
Gross and Microscopic Categories

- Cystic: 45%
  - Associated with or originating in a cyst
- Adenofibromatous: 15%-21%
  - Associated with or originating from a clear cell adenofibroma
- Other: 40%
  - Neither of the above

CT Appearance

Cystic Clear Cell Carcinoma
Molecular Events in Clear Cell Carcinoma

- **ARID1A**
  - Tumor suppressor gene
  - Inactivating mutations in ~ 50%
  - Mutations in adjacent endometriosis

- **PIK3CA**
  - Activating mutation in ~ 40%

- **PTEN**
  - Deletion in about 20%