



CONTINUING EDUCATION IN TOXICOLOGIC PATHOLOGY REPRODUCTIVE SYSTEM

Third Conference

ORGANIZED BY SOCIETY FOR TOXICOLOGIC PATHOLOGY IN INDIA (STPI)

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Neoplasms of the Female Reproductive System of Rodents

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Switzerland

Classification

- **Harmonization:**

- <http://www.toxpath.org/nomen/>

- **Dixon et al., 1999, Proliferative Lesions of the Ovary, Uterus, Vagina, Cervix and Oviducts in Rats. In: Guides for Toxicologic Pathology, STP/ARP/AFIP. Washington, DC**
- **Mann, P.C. et al., 1996, Proliferative Lesions of the Mammary Glands in Rats. In: Guides for Toxicologic Pathology, STP/ARP/AFIP. Washington, DC**
- **Boorman et al., 1990. Pathology of the Fisher Rat. Academic Press**
- **Maronot et al., 1999. Pathology of the Mouse, Cache River Press**
- **Mohr, U (ed): 2001. International Classification of Rodent Tumors. The Mouse. Springer Verlag**

Classification: Ovary – Recommendations

<http://www.toxpath.org/nomen/>

- Hyperplasia: tubulostromal, cystic/papillary, sex cord stromal [*diffuse mixed type; granulosa cell; mixed; Sertoli cell; theca cell*]
- Adenoma, tubulostromal and Adenocarcinoma, tubulostromal
- Mesothelioma, malignant
- Cystadenoma and Cystadenocarcinoma
- Tumor, granulosa cell, benign and malignant
- Thecoma, benign and malignant
- Luteoma, benign
- Tumor, Sertoli cell, benign and malignant
- Tumor, sex cord stromal, mixed, benign and malignant
- Dysgerminoma (teratoma, benign or malignant)
- Carcinoma, yolk sac
- Choriocarcinoma

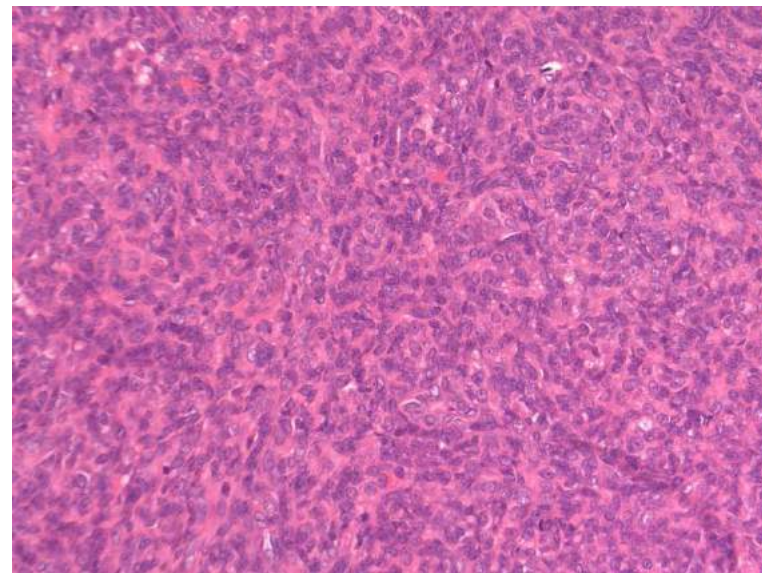
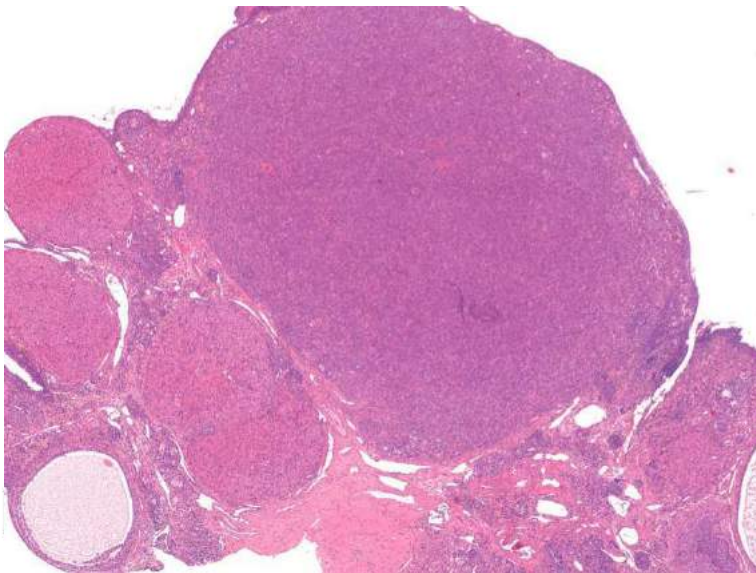
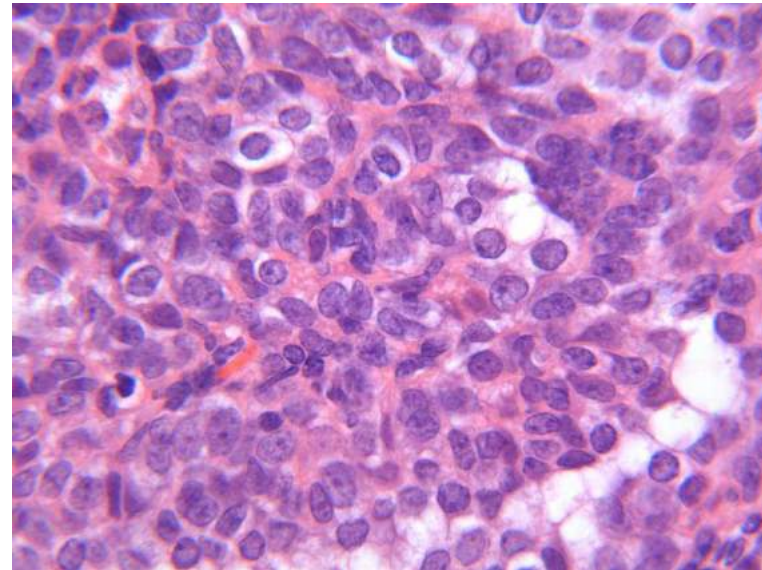
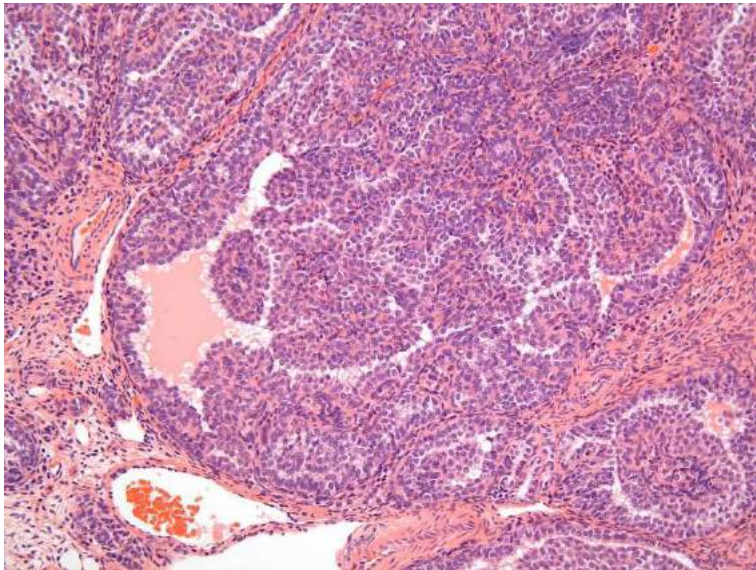
Classification: Ovarian Lesions

- Only organ specific tumors are recommended (harmonized), i.e. neoplasms arising in mesenchymal tissues are not listed under particular organs in the 'International Harmonization of Rat Nomenclature' but under 'Soft Tissues and Others'
- Differentiation between hyperplastic and neoplastic stromal sex cord lesions:
 - Focal hyperplasia: focal small, 2-3 mm
 - Diffuse hyperplasia: 2-3fold increased size of a normal ovary

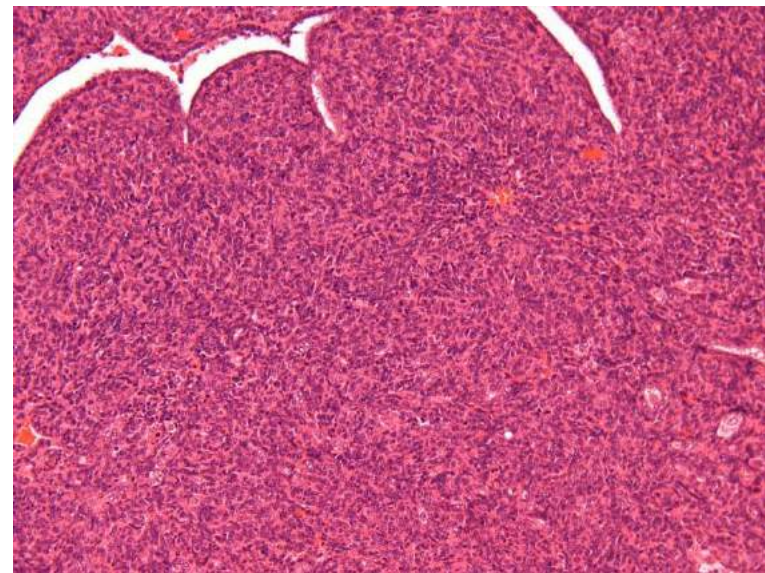
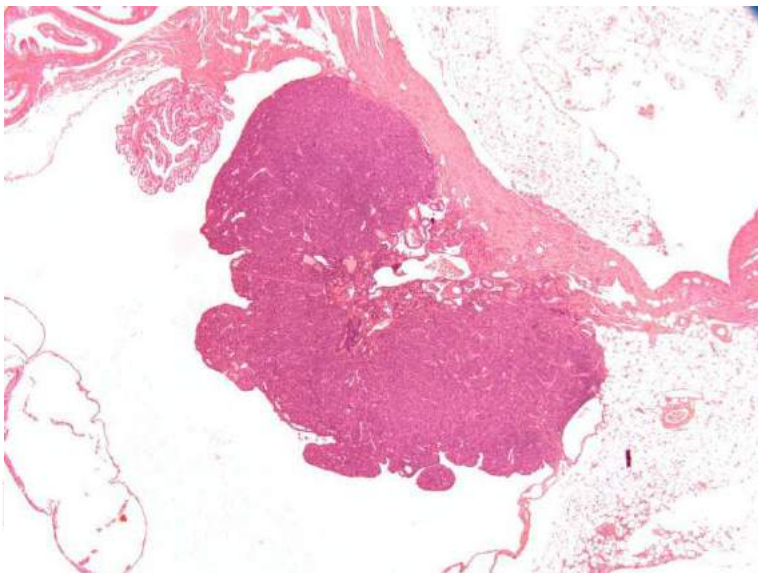
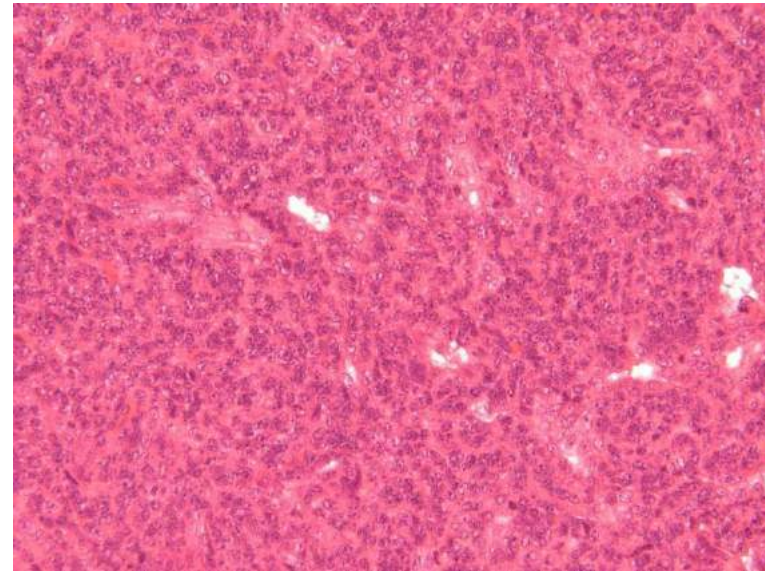
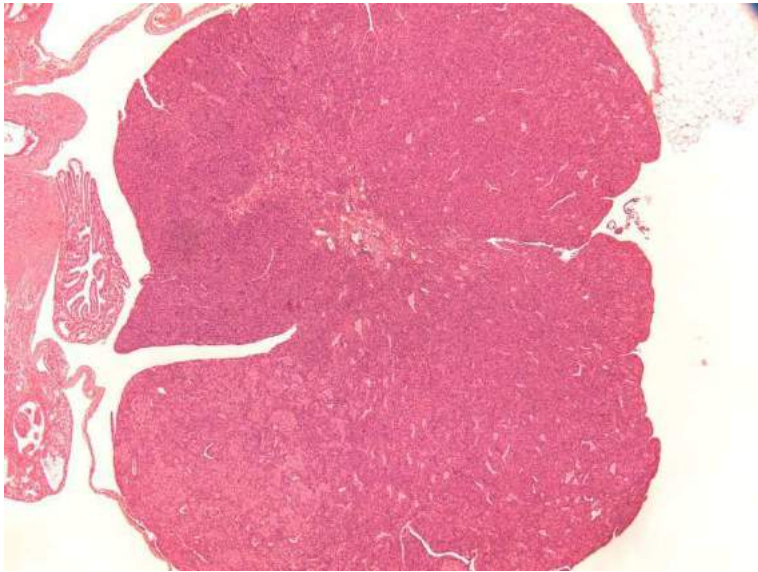
Ovary-Sex Cord Neoplasms: Granulosa Cell Tumor

- **Variety of patterns: solid, cystic, tubular, occasionally sertoliform**
- **Resemble normal granulosa cells with round nucleus and coarse stippled chromatin**
- **Cytoplasm may become luteinized**
- **Malignancy: pleomorphism, increased mitosis, necrosis, invasion**
- **Differential Diagnose: Hyperplasia, Luteoma, Thecoma**

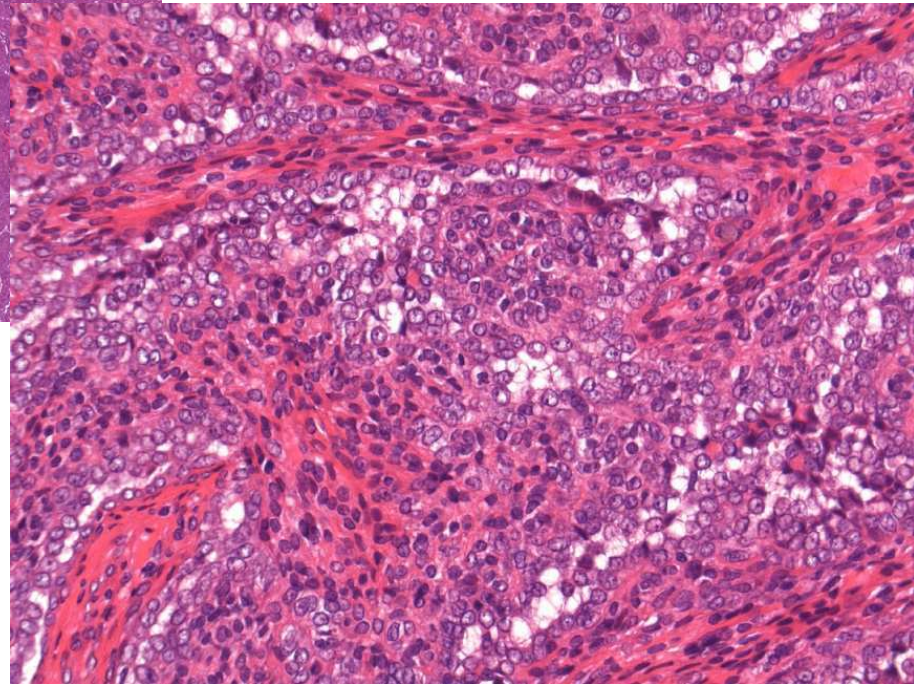
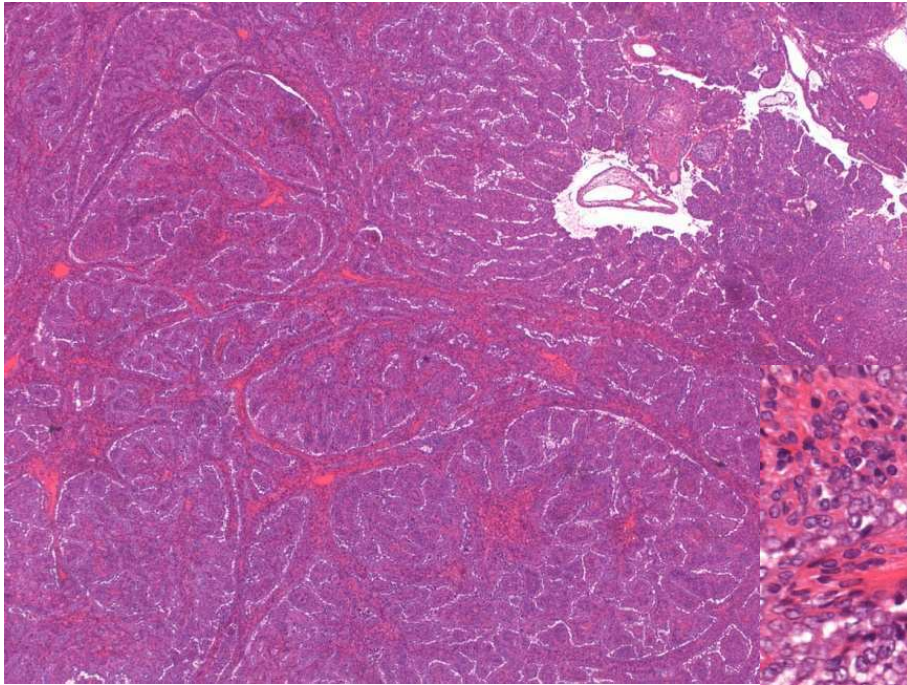
Rat: Granulosa Cell Tumor, benign



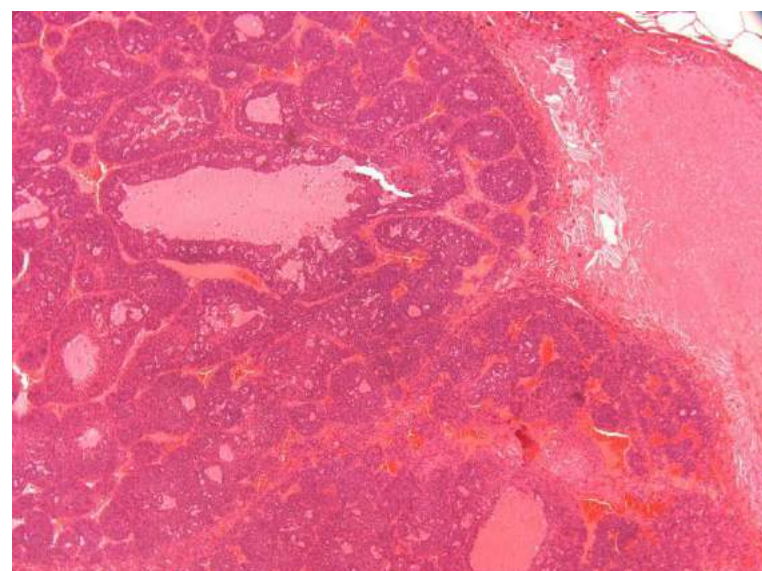
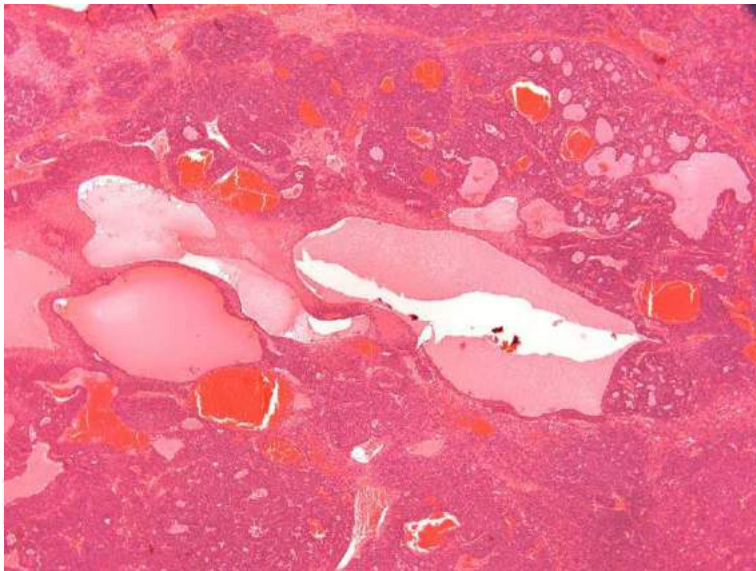
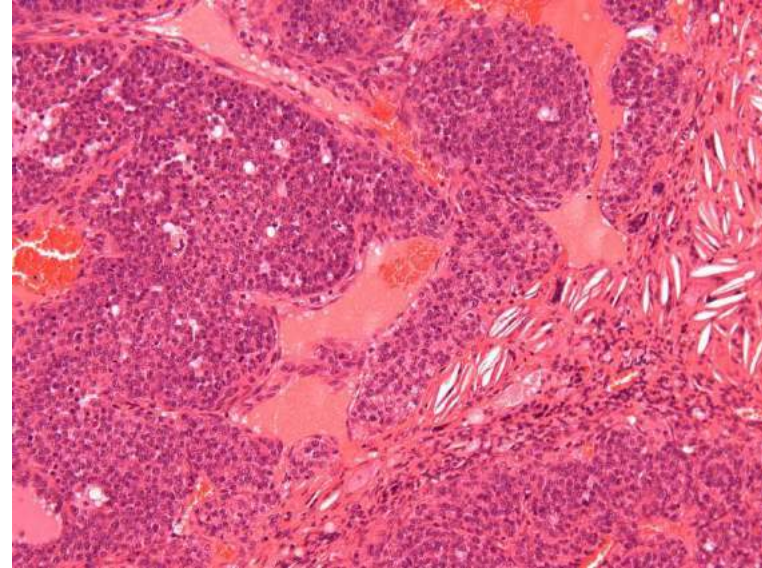
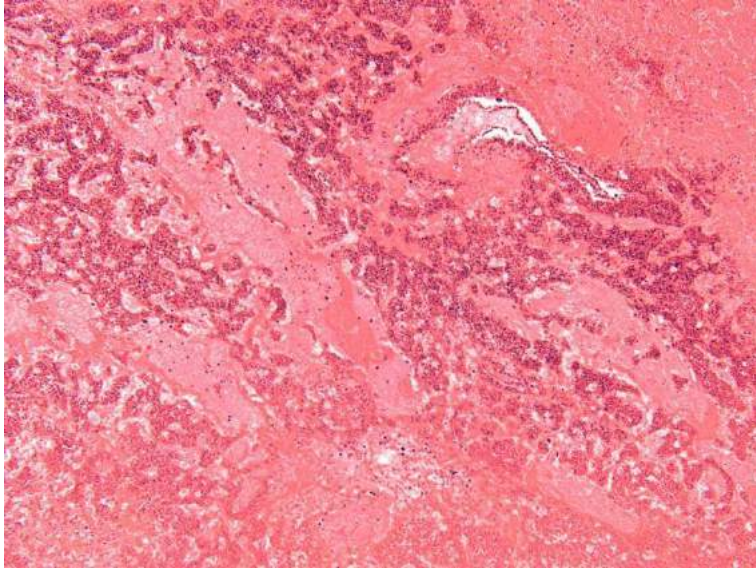
Mouse: Granulosa Cell Tumor, benign



Rat: Granulosa Cell Tumor, malignant



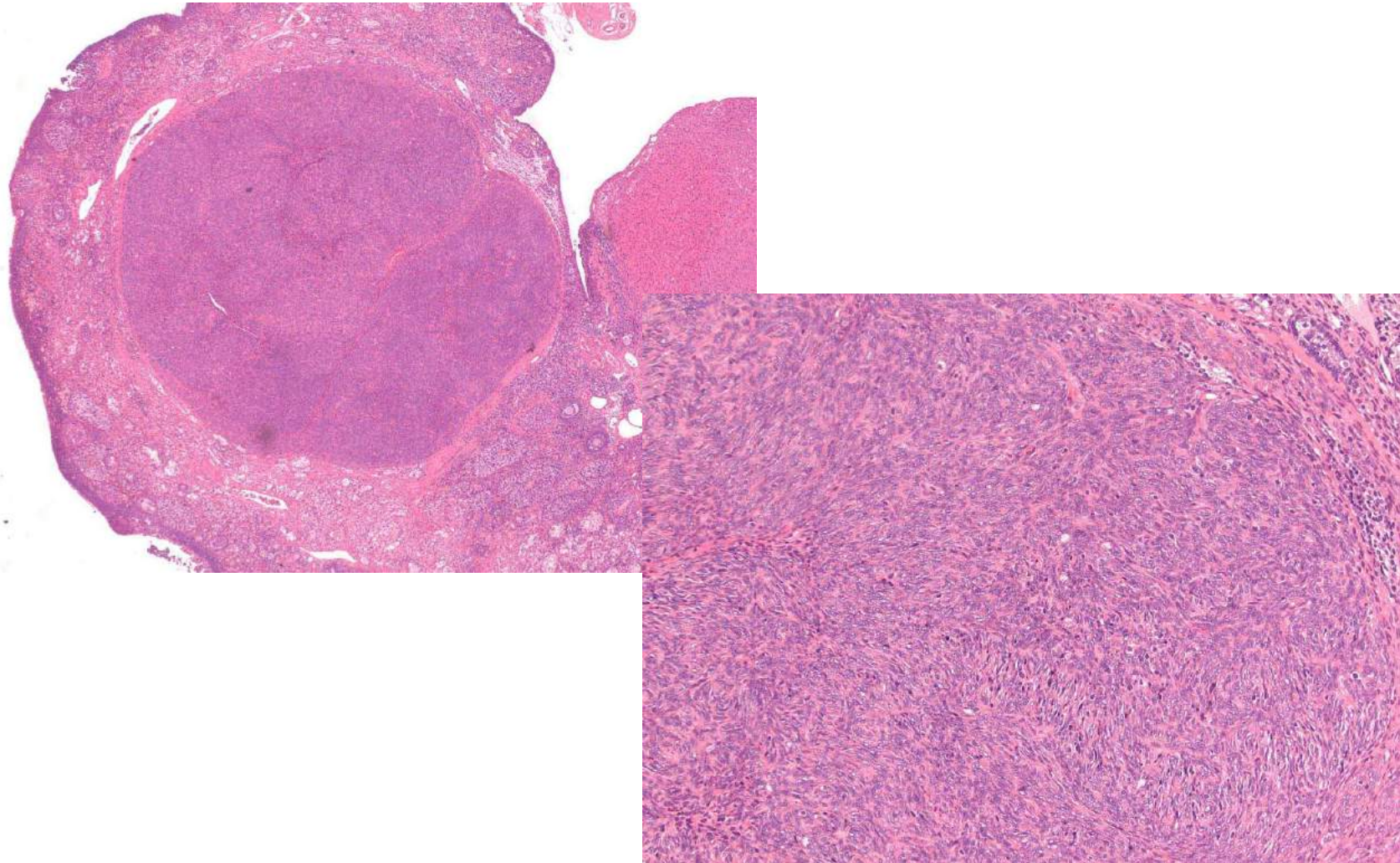
Mouse: Granulosa Cell Tumor, malignant



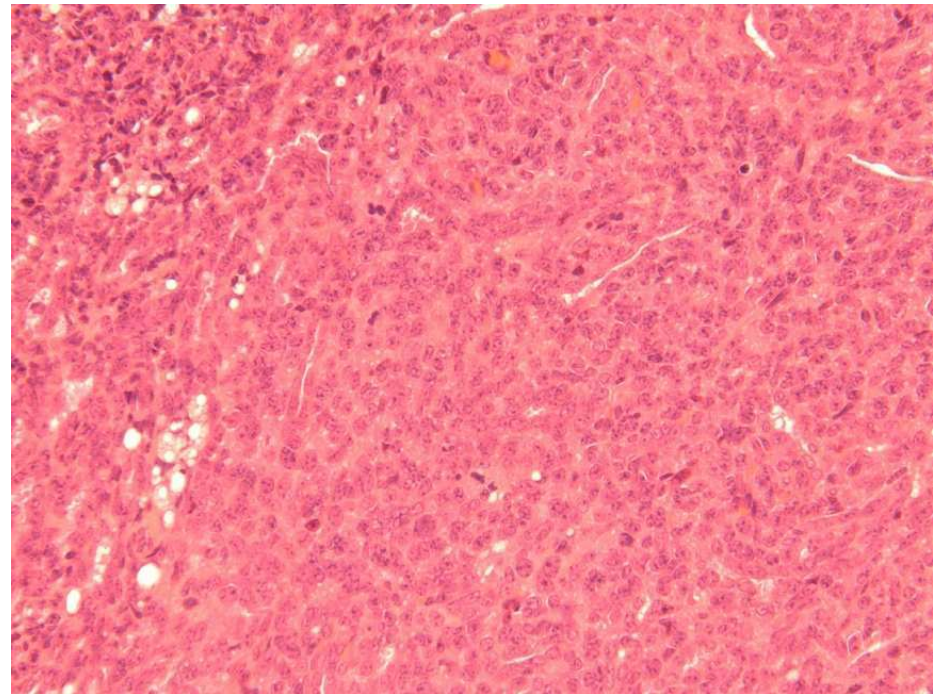
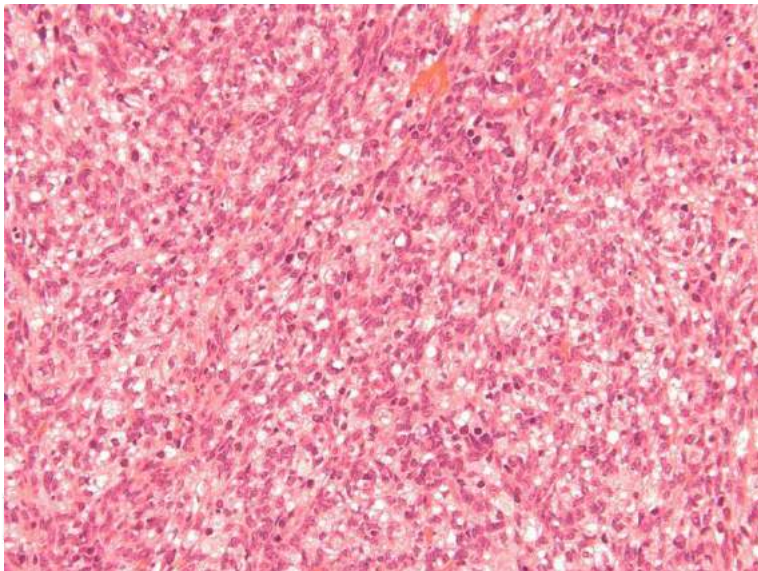
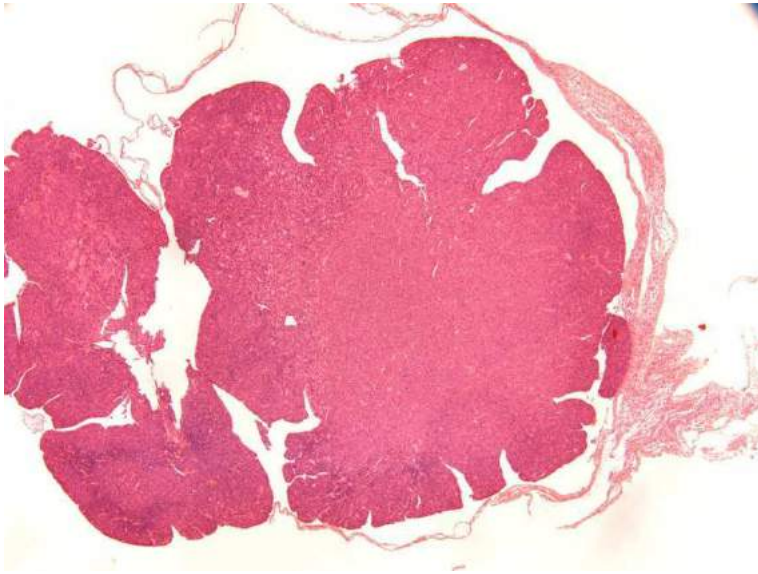
Ovary-Sex Cord Neoplasms: Thecoma

- **Densely packed masses**
- **Fusiform, spindle-shaped cells in whorls and nodular**
- **Areas of vacuolated cells may be present**
- **Malignancy: infiltrative growth pattern, invasion, atypia**
- **Differential Diagnose: Hyperplasia, Fibroma, Granulosa cell tumor, Luteoma**

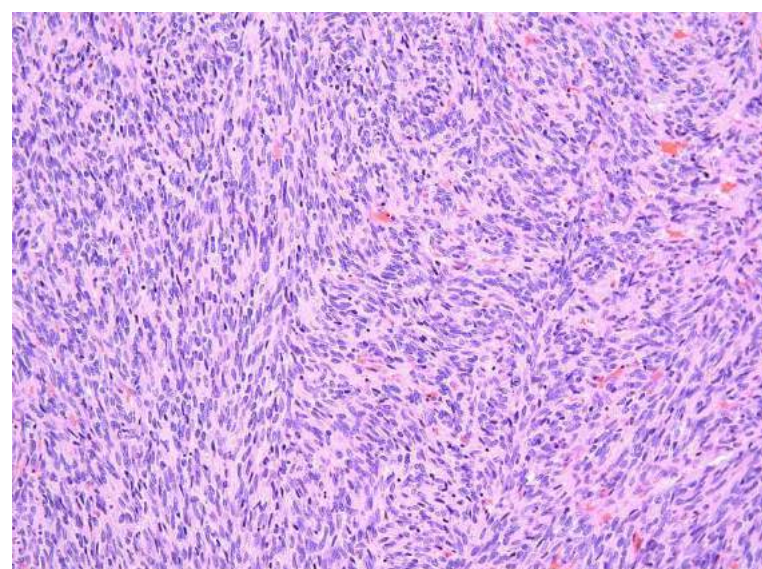
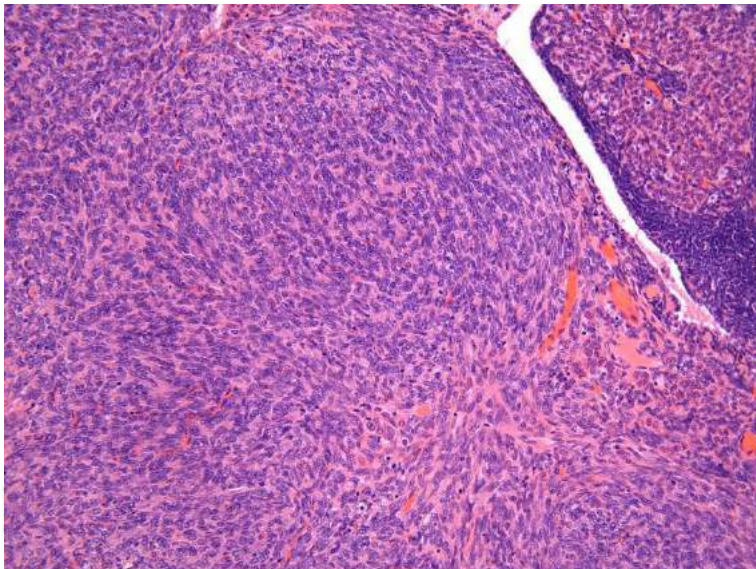
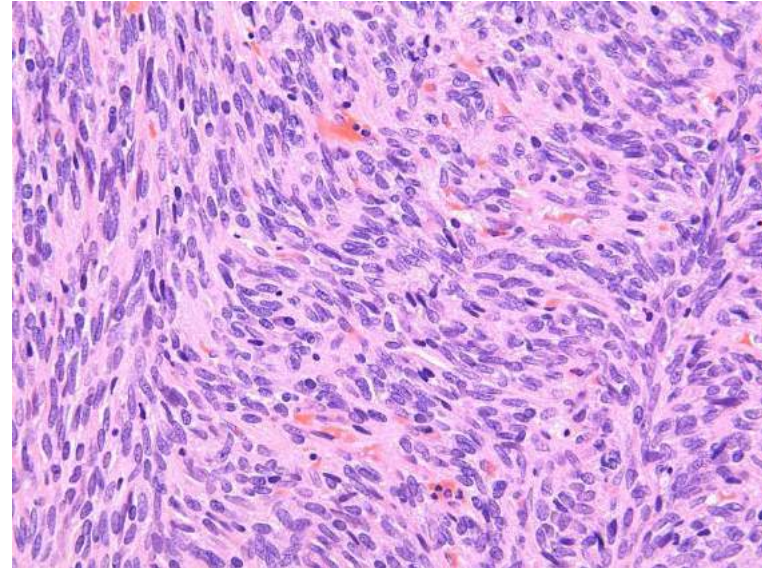
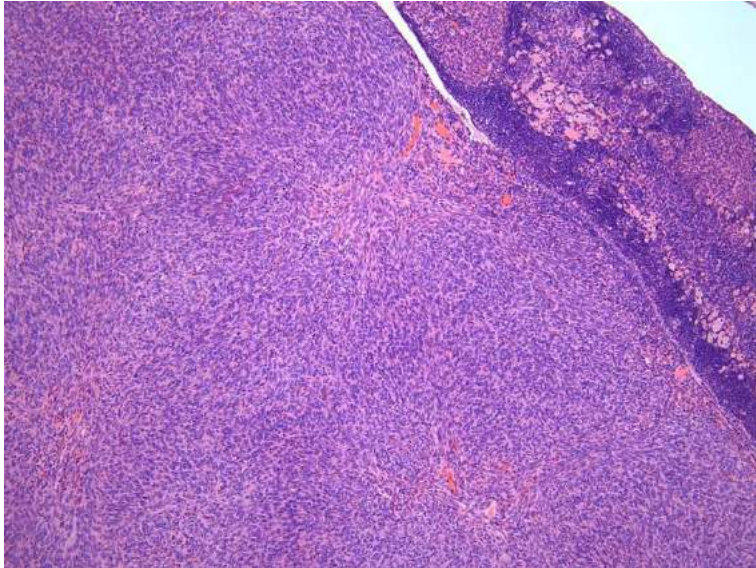
Rat: Thecoma, benign



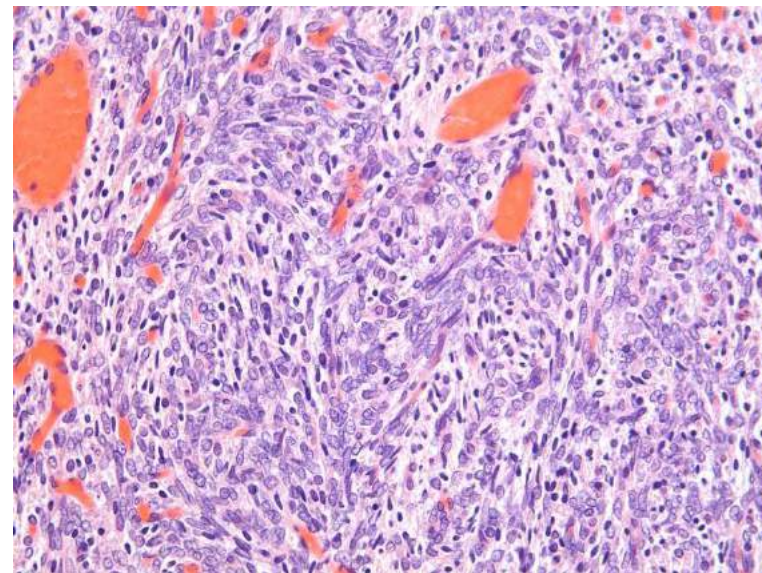
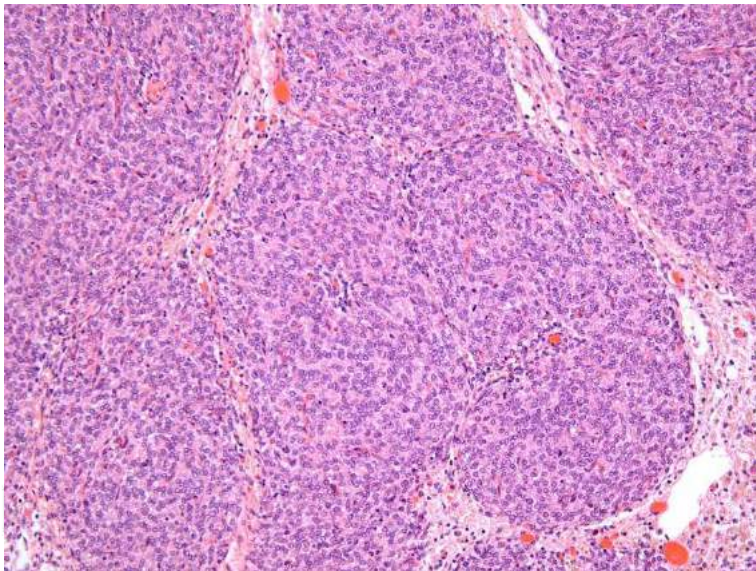
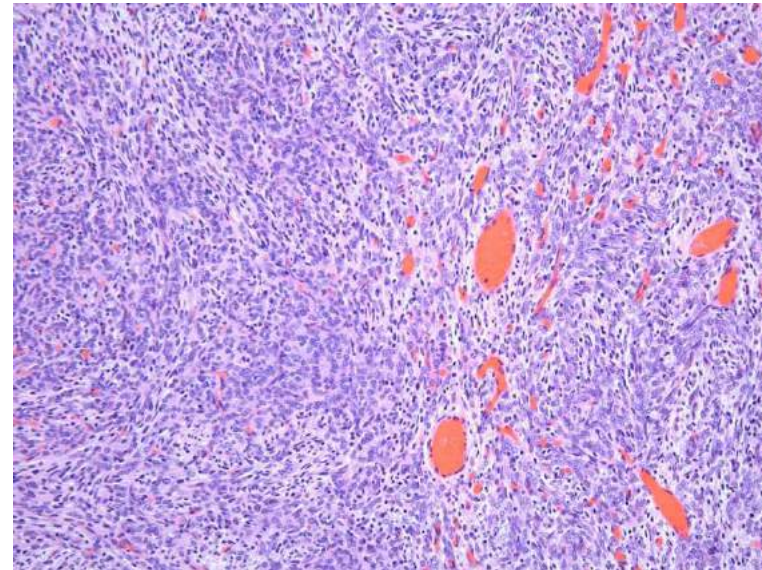
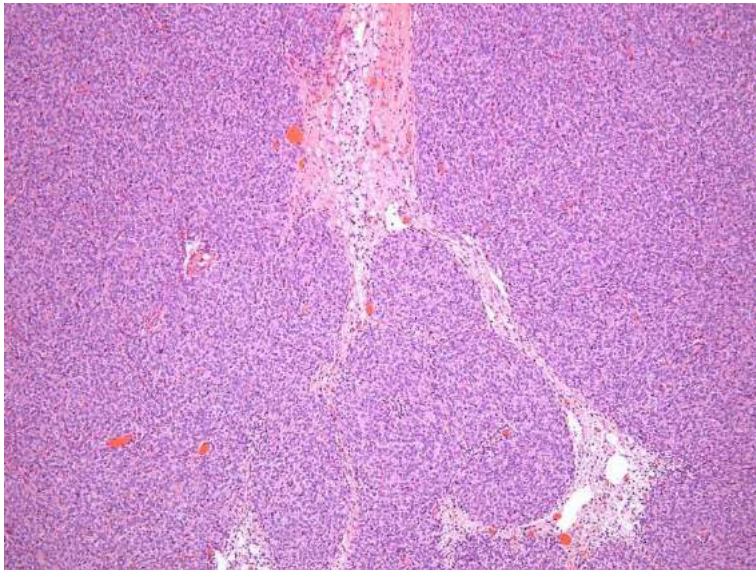
Mouse: Thecoma, benign



Hamster: Thecoma, benign



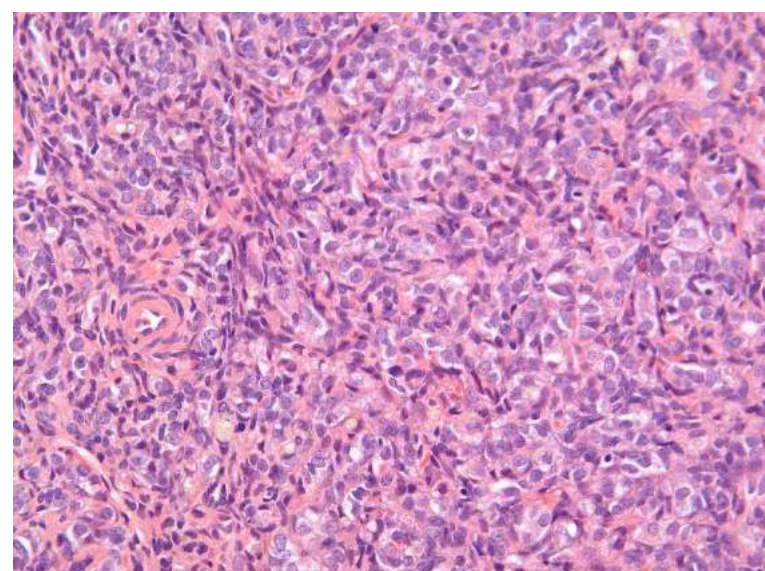
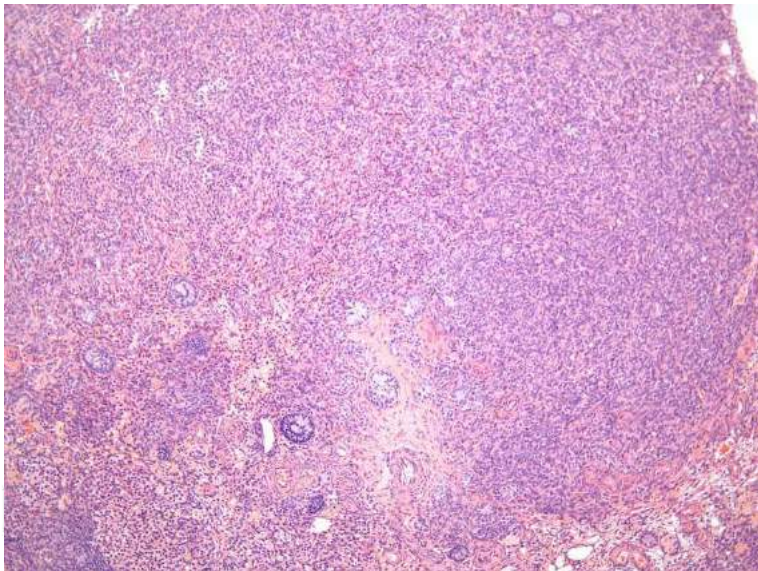
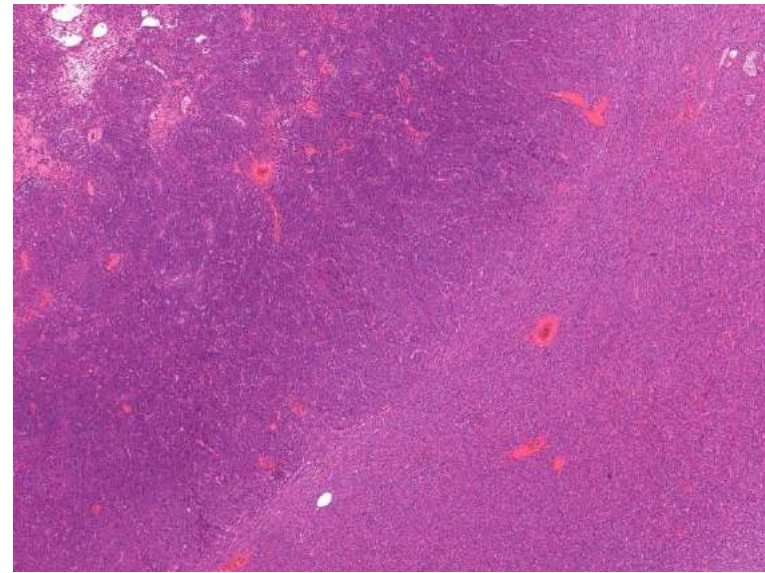
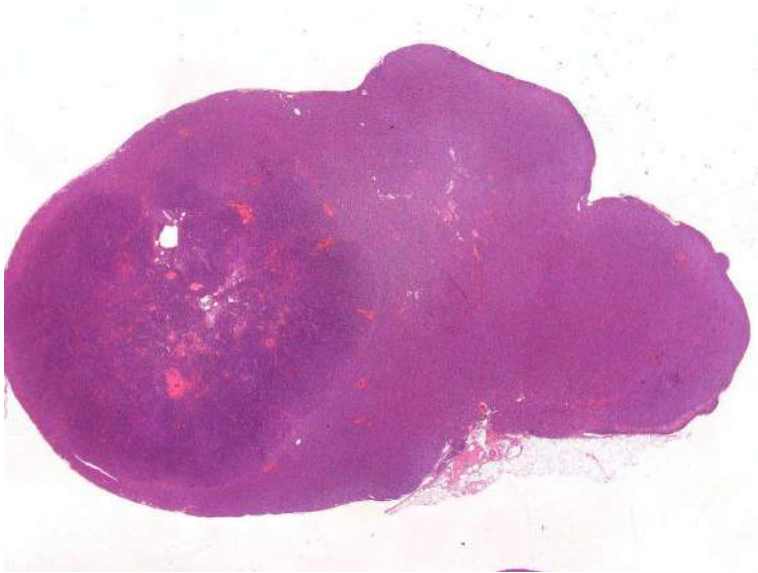
Hamster: Thecoma, malignant



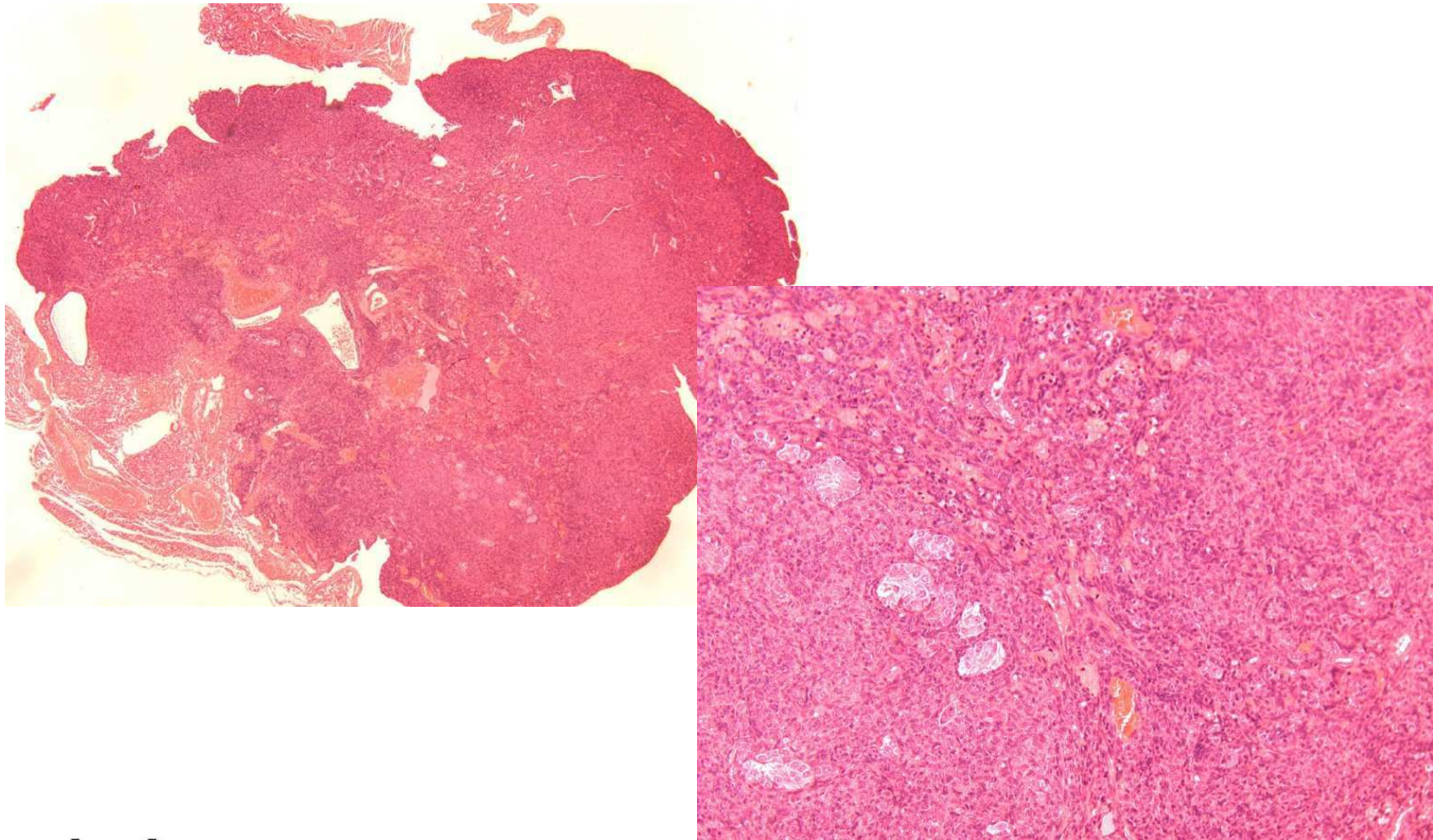
Ovary-Sex Cord Neoplasms: Granulosa-Theca Cell Tumor

- Mixed neoplasm
- Partly dense areas of a particular cell type
- Differential Diagnose: Hyperplasia, Granulosa cell tumor, Thecoma

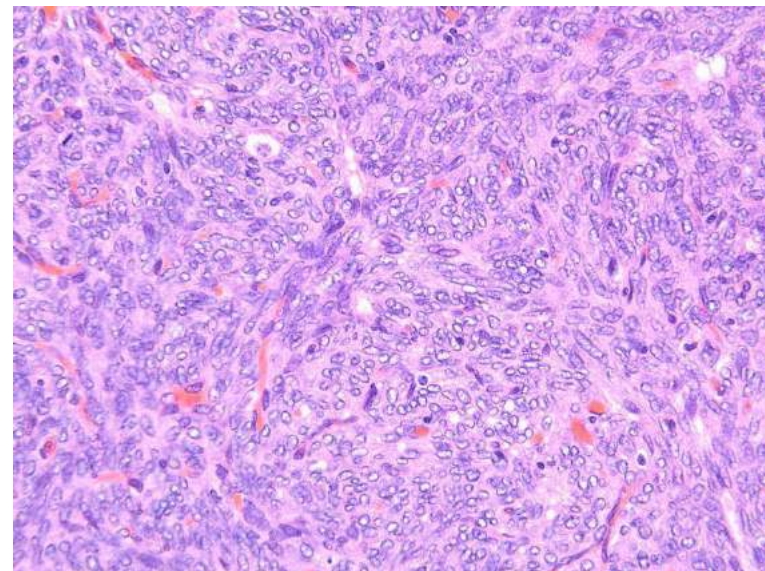
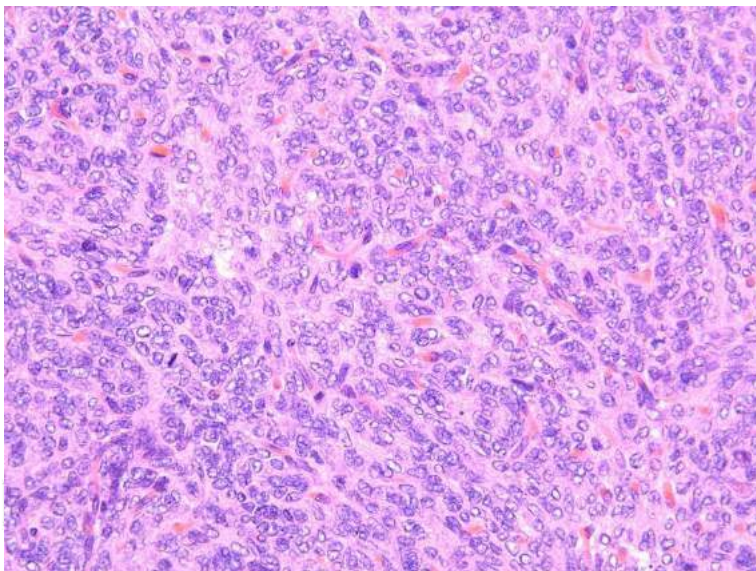
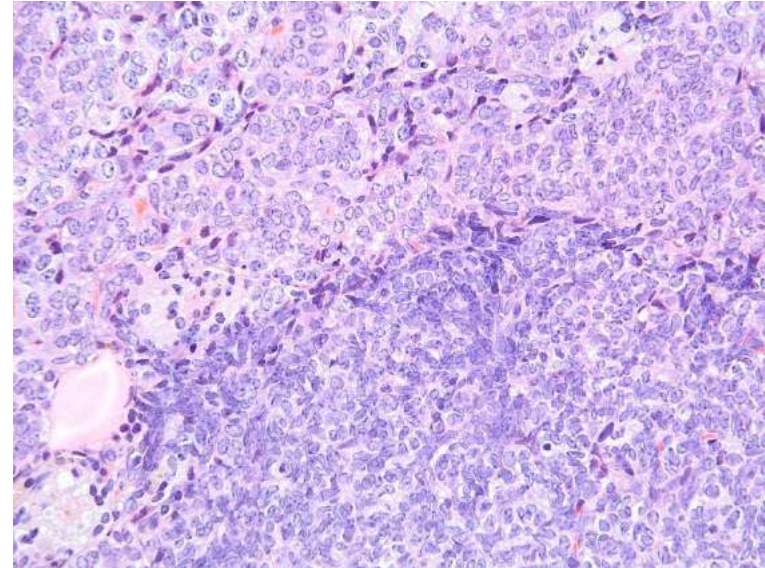
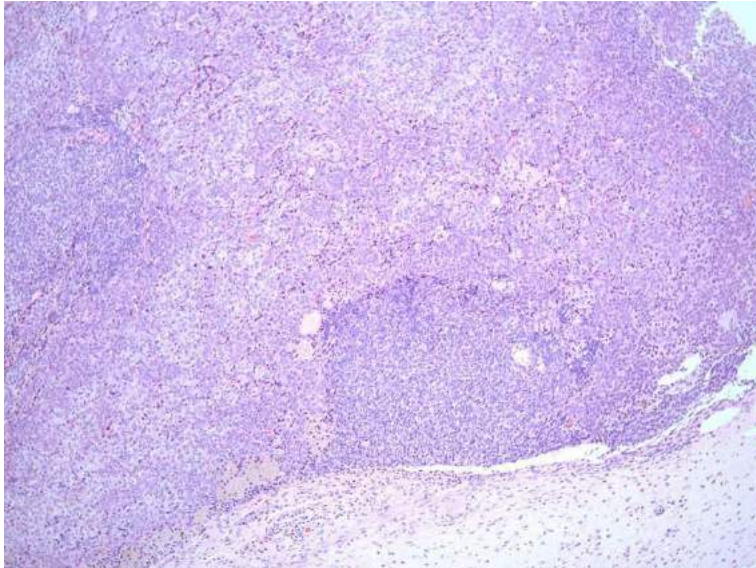
Rat: Granulosa-Theca Cell Tumor, benign



Mouse: Granulosa-Theca Cell Tumor, benign



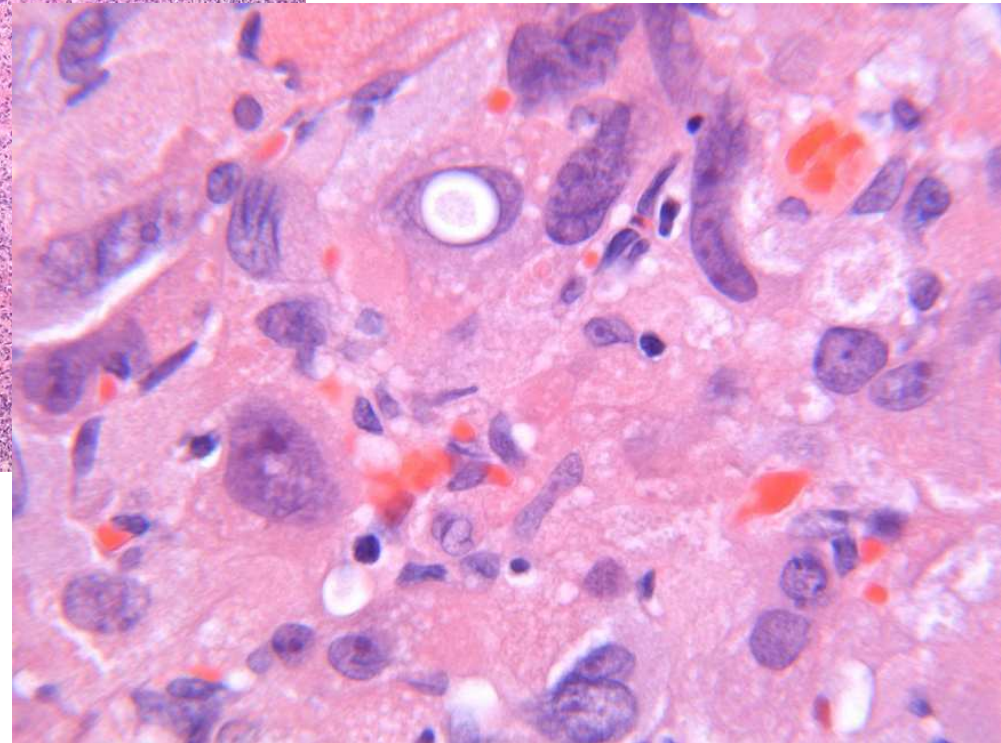
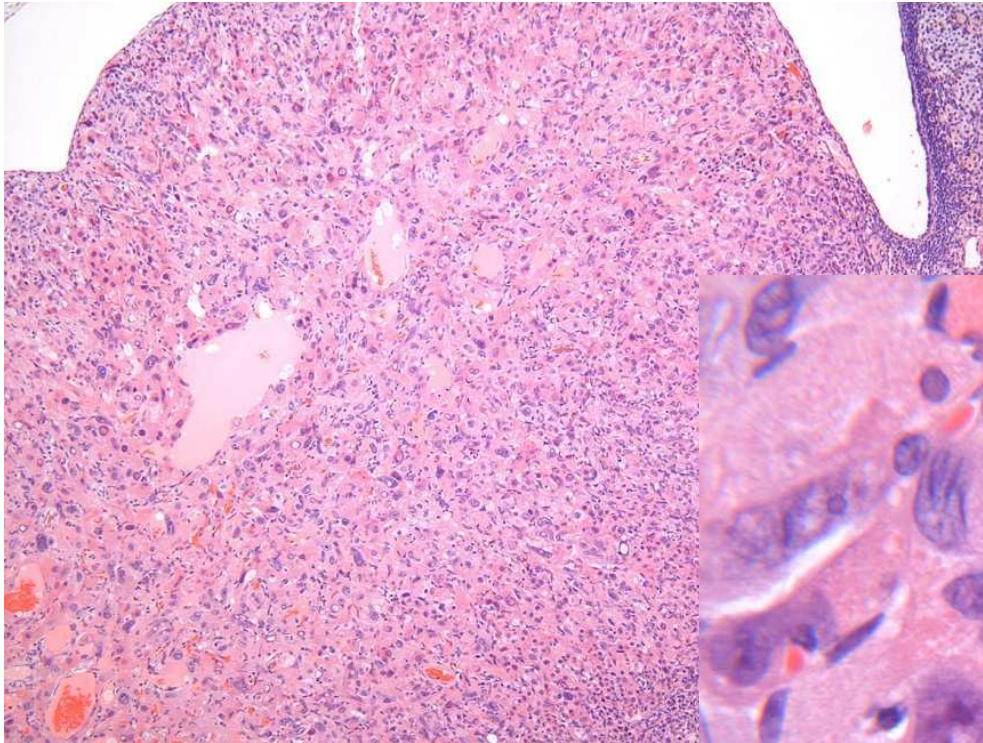
Hamster: Granulosa-Theca Cell Tumor, benign



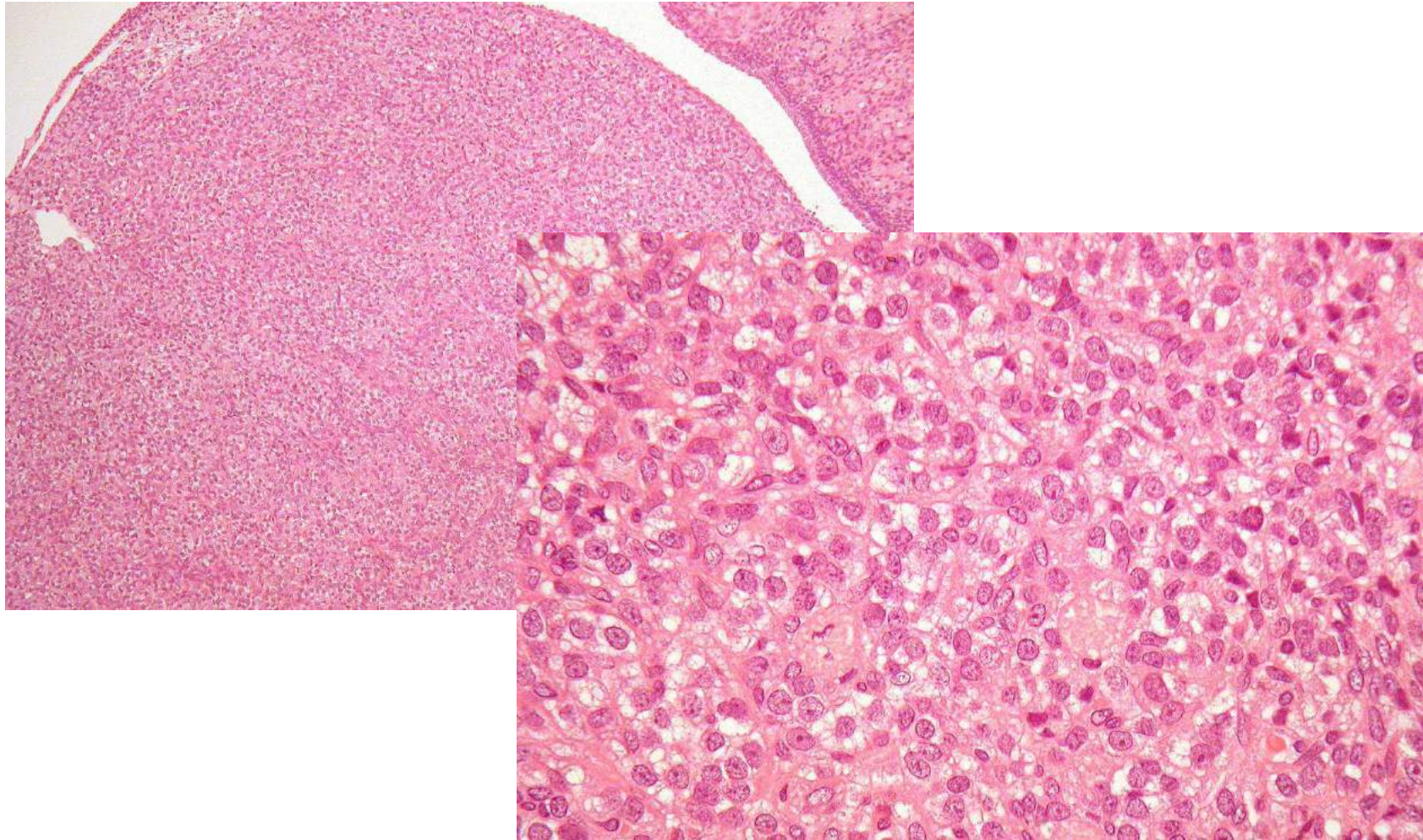
Ovary-Sex Cord Neoplasms: Luteoma

- **Similar to granulosa cell tumor**
- **Neoplastic cells with abundant eosinophilic or vacuolated cytoplasm**
- **Intranuclear cytoplasmic invaginations**
- **Lobulation of tumor mass**
- **Differential Diagnose: Granulosa cell tumor, Thecoma**

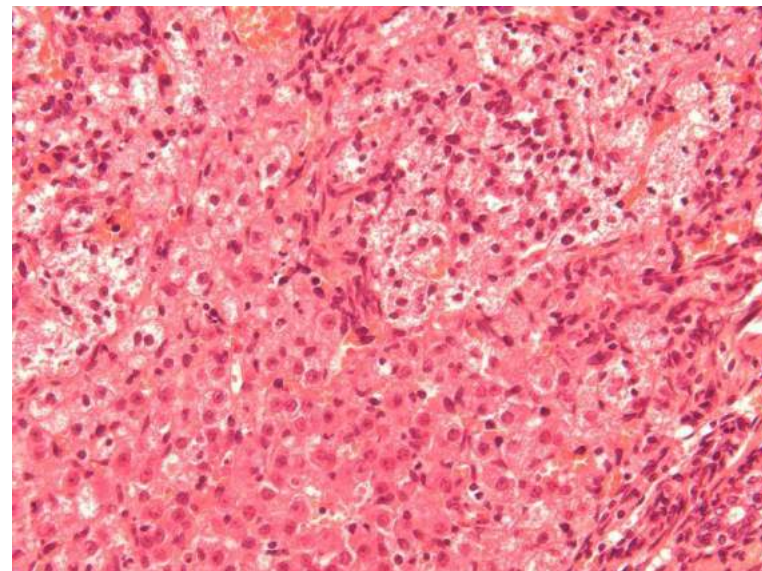
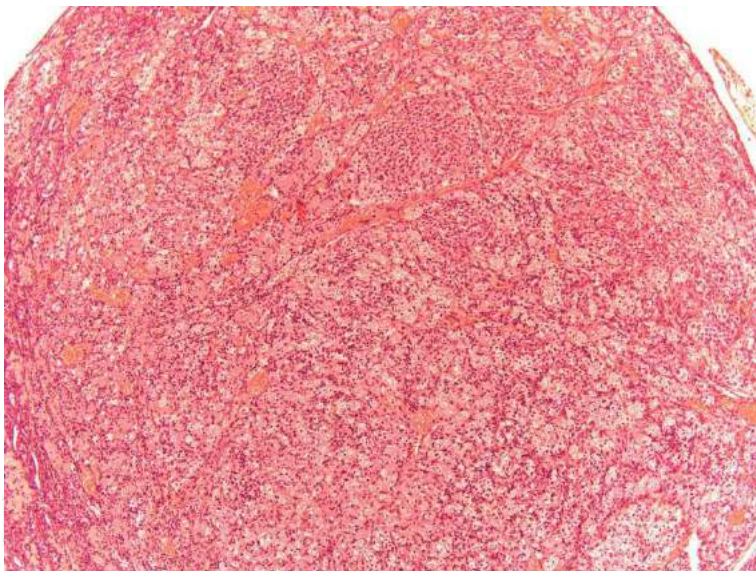
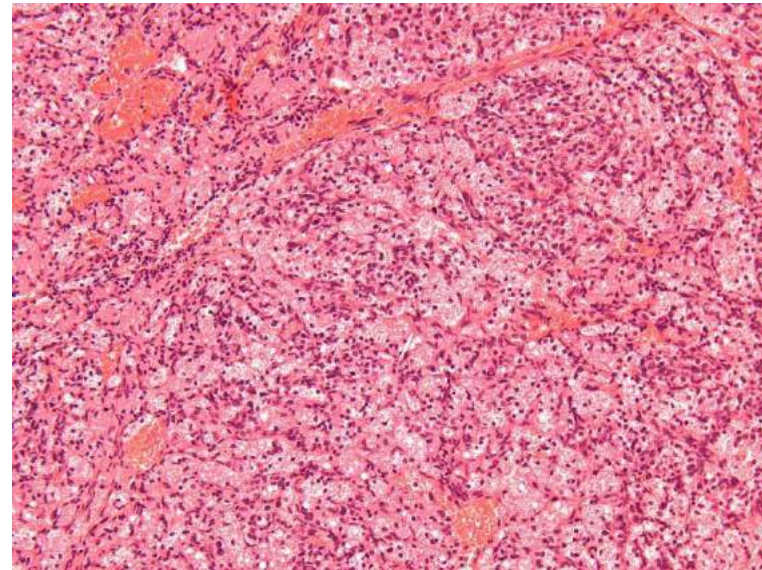
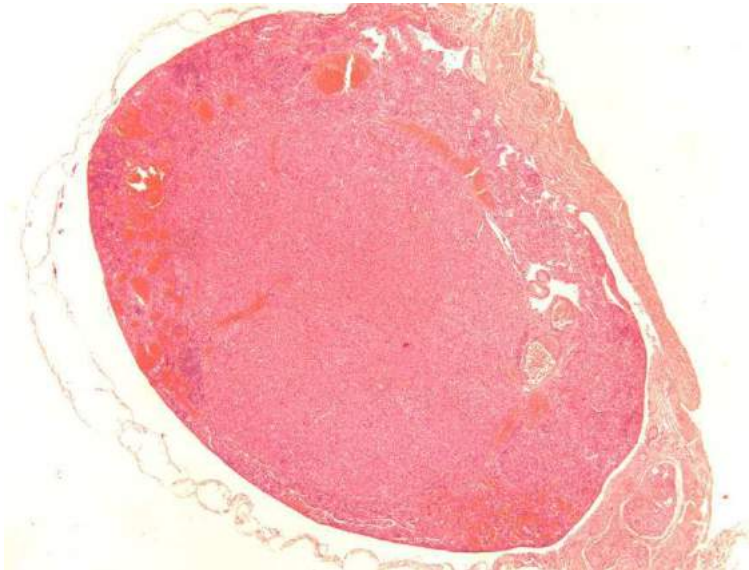
Rat: Luteoma, benign



Rat: Luteoma, benign



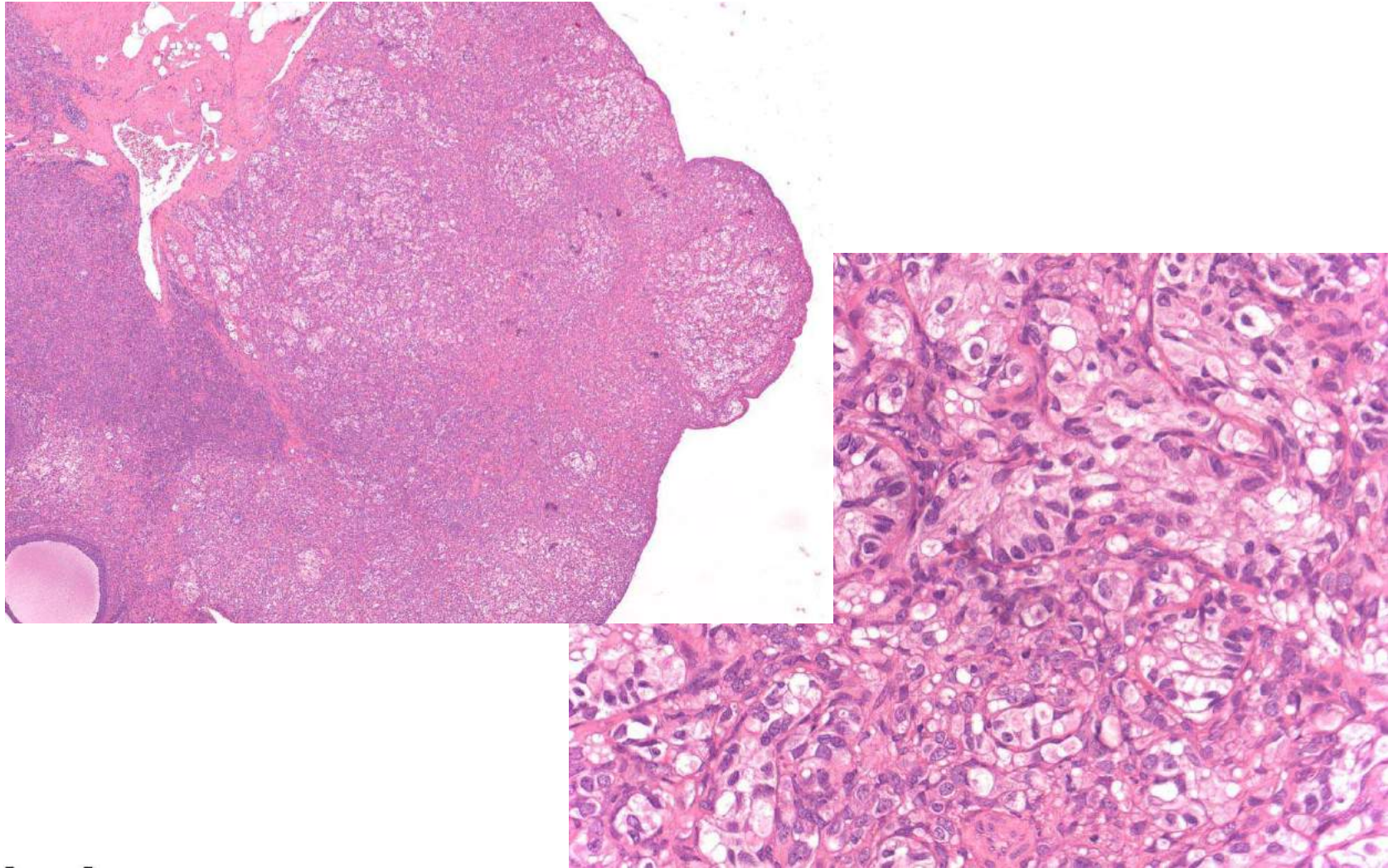
Mouse: Luteoma, benign



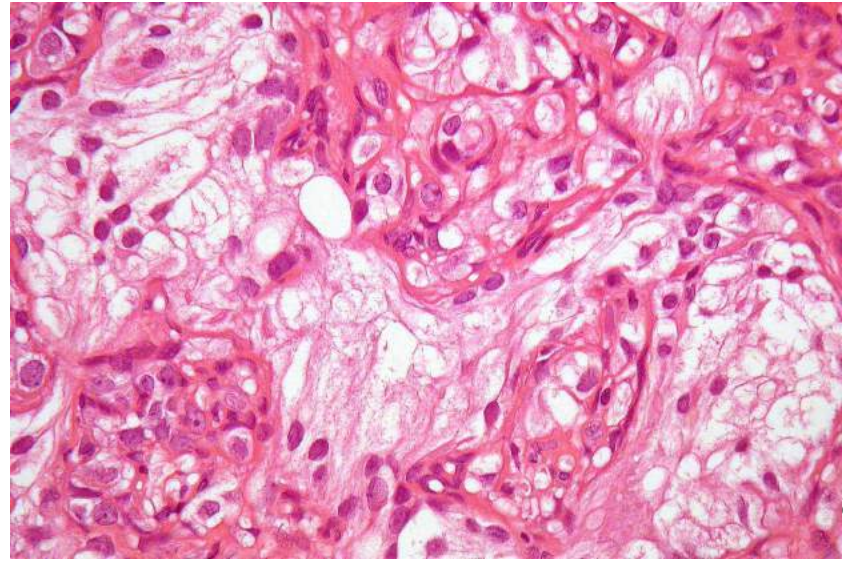
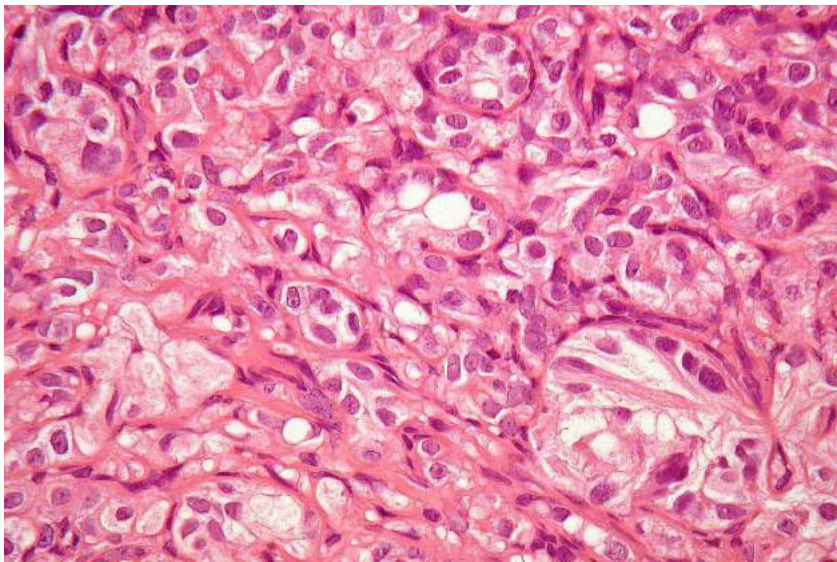
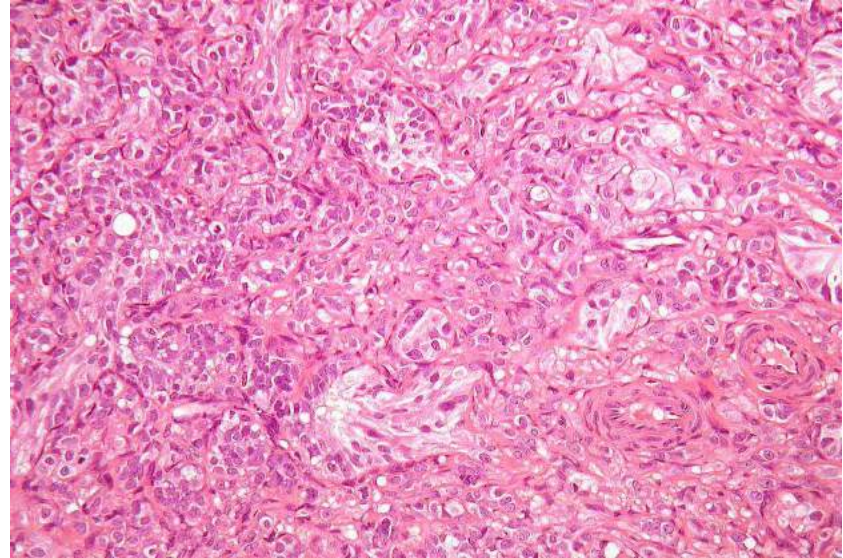
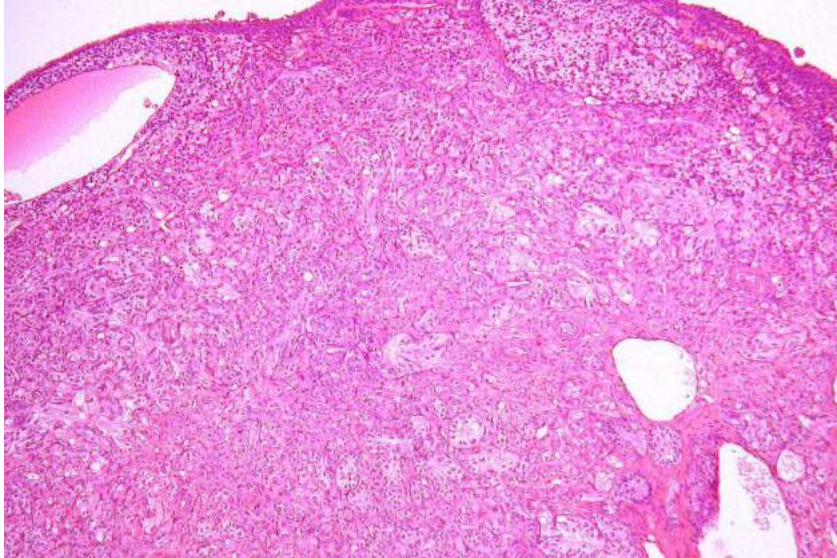
Ovary-Sex Cord Neoplasms: Sertoli's Cell Tumor

- Usually well circumscribed
- Irregular lobules
- Tubules composed of pale, vacuolated cells with indistinct cell boundaries, seminiferous-like
- Malignancy: pleomorphism, increased mitosis, necrosis, invasion
- Differential Diagnose: Hyperplasia, Granulosa cell tumor, Thecoma

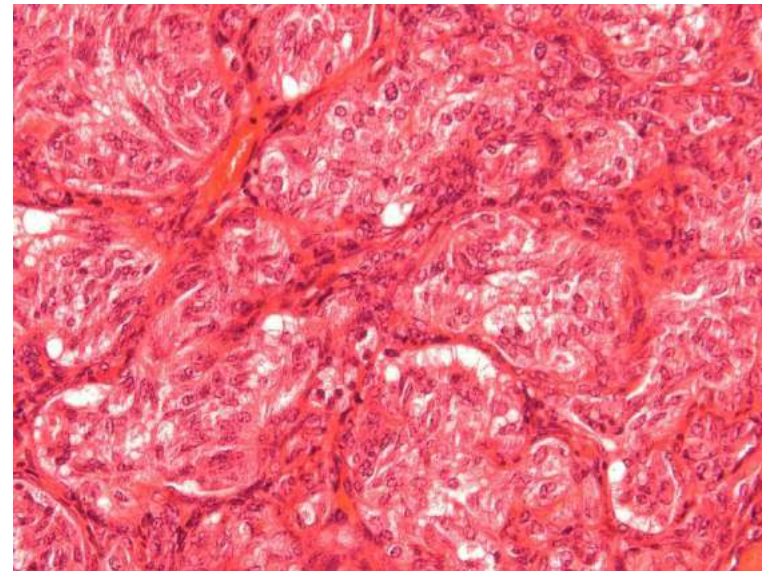
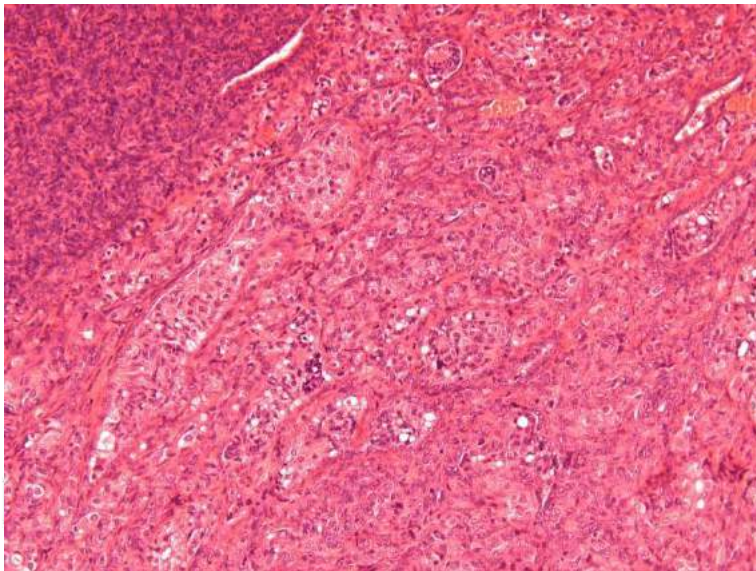
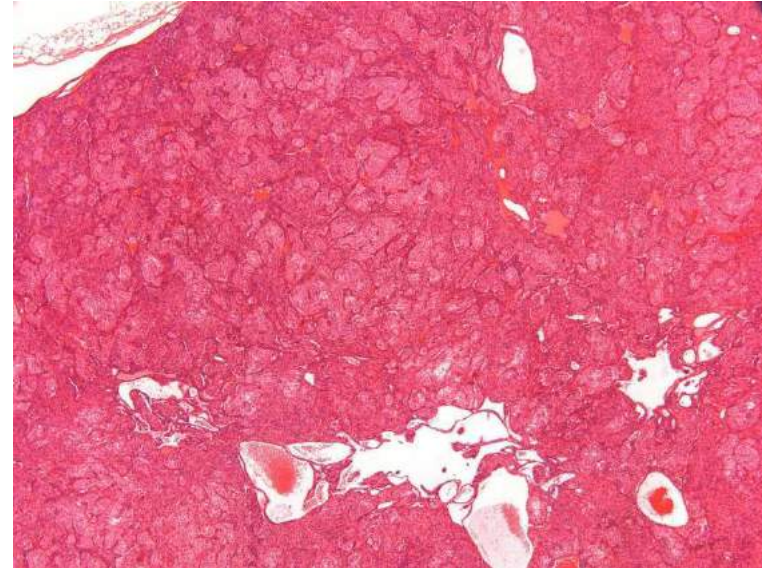
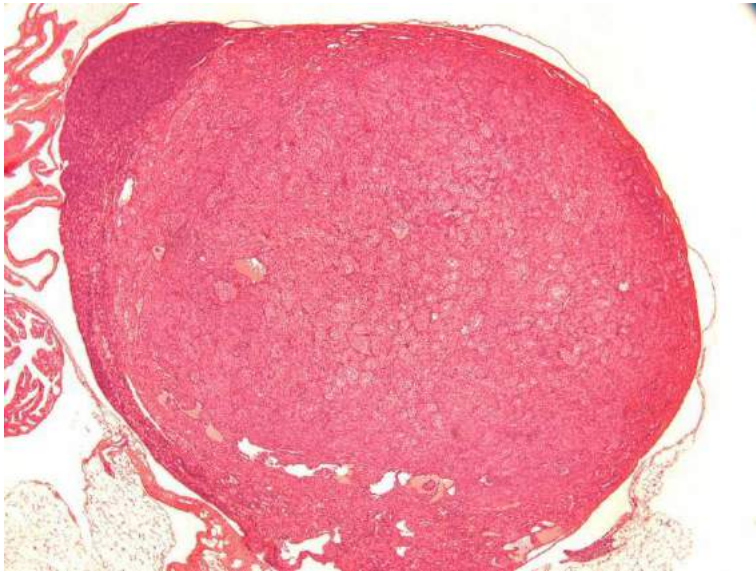
Rat: Sertoli's Cell Tumor, benign



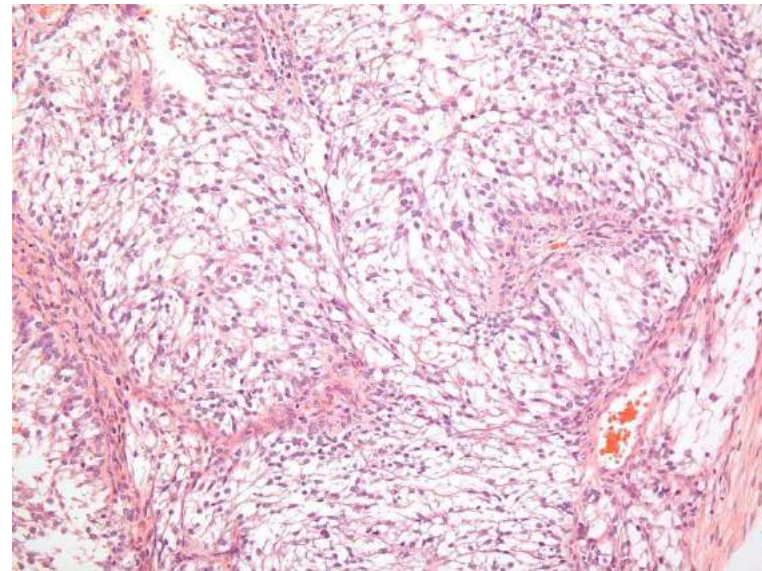
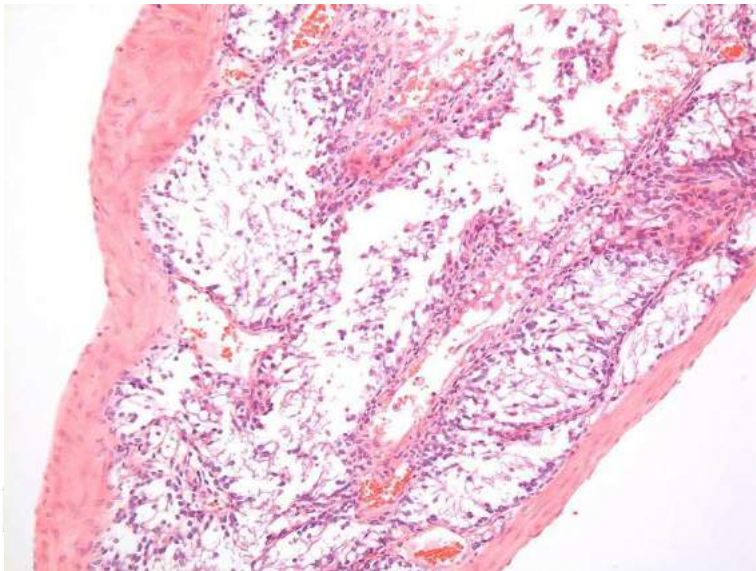
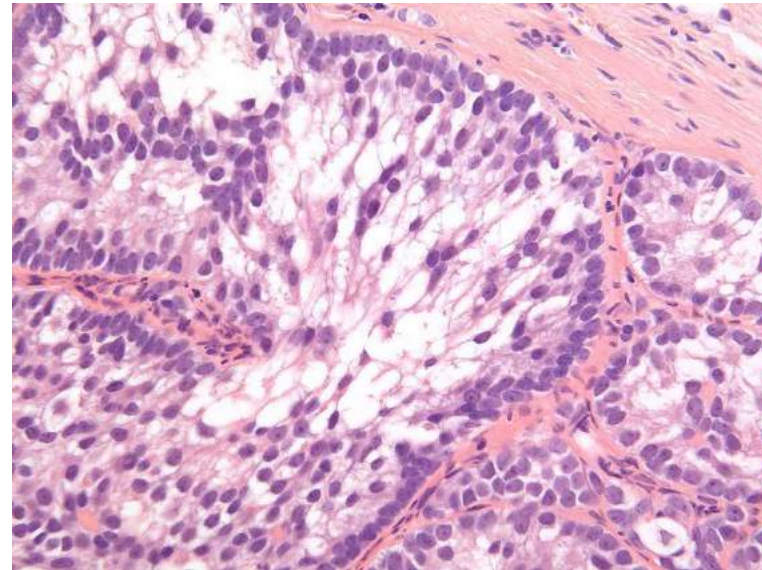
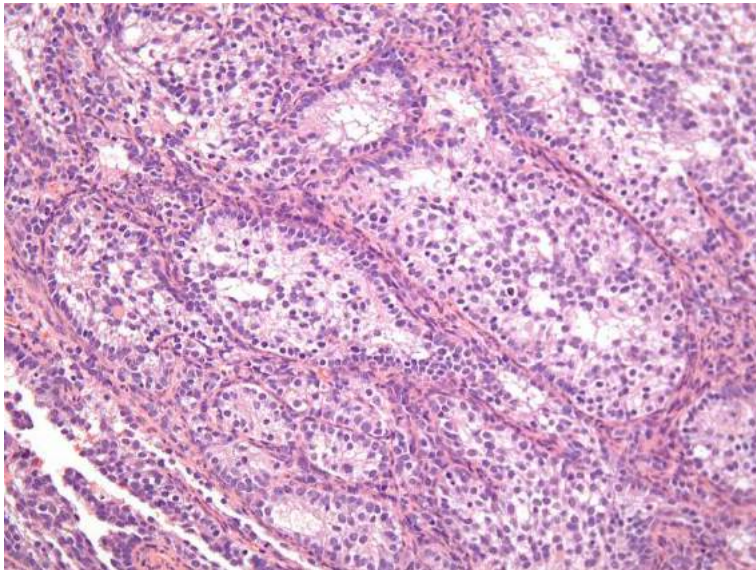
Rat: Sertoli's Cell Tumor, benign



Mouse: Sertoli's Cell Tumor, benign



Rat: Sertoli's Cell Tumor, malignant



Rat: Sertoli's Cell Tumor, malignant

