CONTINUING EDUCATION IN TOXICOLOGIC PATHOLOGY
REPRODUCTIVE SYSTEM

ORGANIZED BY SOCIETY FOR TOXICOLOGIC PATHOLOGY IN INDIA (STPI)

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The Atria Hotel, # 1, Palace Road, Bangalore - 560 001
Neoplasms of the Female Reproductive System of Rodents

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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

Classification: Ovary – Recommendations
http://www.toxpath.org/nomen/

- Hyperplasia: tubulostromal, cystic/papillary, sex cord stromal
  
  \[\text{diffuse mixed type; granulosa cell; mixed; Sertoli cell; theca cell}\]

- 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, spindleshaped 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