



CONTINUING EDUCATION IN TOXICOLOGIC PATHOLOGY REPRODUCTIVE SYSTEM

Third Conference

ORGANIZED BY SOCIETY FOR TOXICOLOGIC PATHOLOGY IN INDIA (STPI)

OCTOBER 29-31, 2010

The Atria Hotel, # 1, Palace Road, Bangalore - 560 001



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INTRODUCTION TO JAI RESEARCH FOUNDATION

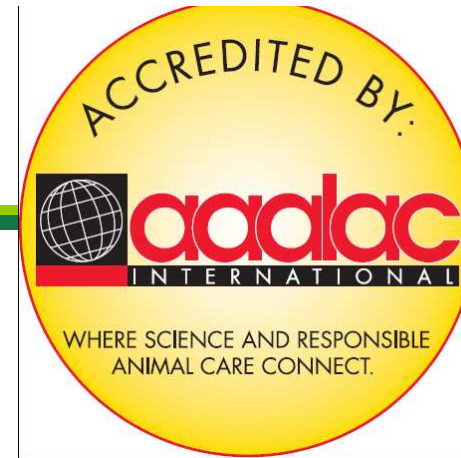
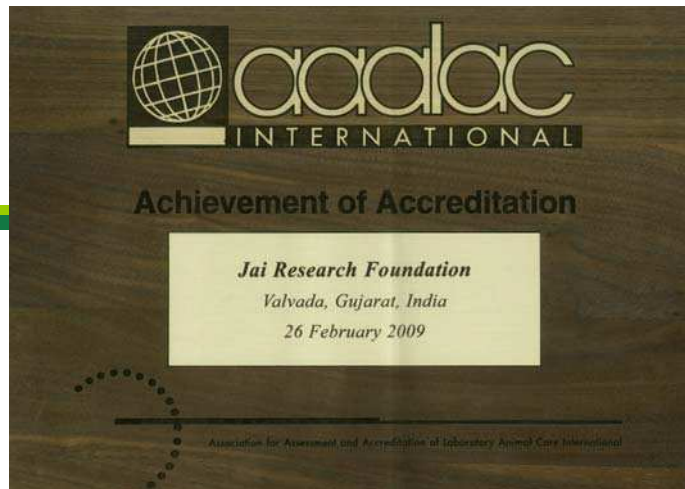
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JRF has endorsement of compliance with the OECD Principles of Good Laboratory Practices by the Ministry of Health, Welfare and Sport, Government of The Netherlands as well as GLP monitoring Authority of the Government of India. JRF is also recognized by Nuclear Regulatory Commission, Government of India; as well as Association for Assessment and Accreditation of Laboratory Animal Care International "AAALAC".

**SPONTANEOUS LESIONS IN FEMALE
REPRODUCTIVE SYSTEM
IN SHORT AND LONG TERM STUDIES**

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JAI RESEARCH FOUNDATION
VAPI – 396 195
GUJARAT**

RODENTS IN TOXICITY STUDY

- Rats and Mice most commonly used rodents
- Rats used in about 70-80 % studies
- Mice used in 80-90% studies
- Short term: conducted to establish dose for chronic / carcinogenicity studies, duration upto 90 days
- Conducted to study haematological / biochemical / pathological alterations of test substance at different intervals/termination beyond 90 days.

SPONTANEOUS LESIONS

- ❖ Development/occurrence of lesions at its own in an animal species
- ❖ Occurrence rate depends upon species, age, strain, husbandry practices and agro-climatic condition

REPRODUCTIVE SYSTEM



- **Importance of System**: Continuity of species in nature, only gender based system in medical/Vety. Sci, further stresses its importance
- **Male System**: Contribution limited upto fertilization of ovum
- **Female System**: Implantation of ferti. ovum, intrauterine develop, parturition, neonatal care including feeding upto weaning stage in rats
- **Reproductive organs** : Ovaries, uterus/cervix vagina, mammary glands, etc.

SPONTANEOUS LESIONS



- **Congenital** : Agenesis, dysgenesis, hamartoma, ectopic tissues
- **Degenerative** : Degeneration, necrosis, cyst, atrophy, pigmentation, mineralization / concretion
- **Inflammatory and Vascular Changes** : Inflammatory changes in different organs, congestion, angiectasis
- **Hyperplastic Lesions**: Hyperplastic Changes in different organs
- **Neoplastic lesions**: Various Neoplastic lesions
- **Miscellaneous Lesions** : Uncovered under above heads

COMMON LESIONS IN RATS AND MICE



SHORT TERM OVARIES

RATS

- ❖ Agenesis (uni/bilateral)
- ❖ Dysgenesis
- ❖ Ovotestis
- ❖ Cysts
- ❖ Mycoplasmosis
- ❖ Abscessation
- ❖ Congestion
- ❖ Angiectasis

MICE

- ❖ Teratoma
- ❖ Cysts
- ❖ Oophritis
- ❖ Klebsellosis
- ❖ Follicular necrosis
(granulosa cell necrosis)
- ❖ Angiectasis

COMMON LESIONS IN RATS AND MICE



RATS

MICE

LONG TERM

- ❖ Fatty metaplasia, atrophy
pigmentation – haemo, ceroid
- ❖ Interstitial cell hyperplasia
- ❖ Granulosa cell hyper./tumour
- ❖ Epithelial cell hyperplasia
- ❖ Luteoma
- ❖ Tubulostromal adenoma /
carcinoma
- ❖ Sertoli form tumour
- ❖ Mesothelioma - *rare*

- ❖ Granulosa cell hyperplasia
- ❖ Tubulostromal hyper./
adenoma/ adenomacarcinoma
- ❖ Cystadenoma/carcinoma
- ❖ Granulosa cell tumour – *rare*
- ❖ Luteoma
- ❖ Haemangioma
- ❖ Pigmentation : haemo/cerasoid
- ❖ Mesothelioma

UTERUS

RATS

MICE

SHORT TERM

- ❖ Agenesis – complete/partial
harmartoma
- ❖ Luminal dilation
- ❖ Metritis – infection
- ❖ Polyarteritis/Thrombus
- ❖ Deciduoma
- ❖ Endometrial polyp

- ❖ Agenesis
- ❖ Luminal dilation
- ❖ Metritis – infection
- ❖ Polyarteritis/Thrombus
- ❖ Angiectasis
- ❖ Deciduoma
- ❖ Endomat. polyp.

UTERUS

RATS

- ❖ Atrophy
- ❖ Cystic endomet. hyper
- ❖ Endomet. adenoma/
adenocarcinoma
- ❖ Leiomyoma /
leiomyosarcoma

LONG TERM

MICE

- ❖ Atrophy
- ❖ Cystic endomet. hyper.
- ❖ Endomet. adenoma/adeno-
carcinoma
- ❖ Leiomyoma / - sarcoma
- ❖ Endomet. stromal sarcoma
- ❖ Adenomyosis
- ❖ Squamous cell metaplasia

CERVIX/VAGINA

RATS

- ❖ Imperfect vagina
- ❖ Vaginal dilation
- ❖ Atrophy
- ❖ Sq. epithelial cyst in cervix and vagina
- ❖ Vaginitis/cervicitis - *rare*

SHORT TERM

MICE

- ❖ Atrophy
- ❖ Angiectasis – extension from uterus
- ❖ Sq. epithelial cyst in cervix and vagina

CERVIX/VAGINA

RATS

- ❖ Sq. epith cell hyper./ papilloma/carcinoma
- ❖ Vaginal polyp
- ❖ Granular cell tumour
- ❖ Leiomyoma/-sarcoma
- ❖ Fibrosis
- ❖ Adenocarcinoma of endocervix
- ❖ Adenoacanthoma

LONG TERM

MICE

- ❖ Sq. epith cell hyper/carcinoma
- ❖ Vaginal polyp
- ❖ Granular cell tumour
- ❖ Vaginitis/cervicitis
- ❖ Angiectasis – extension from uterus

MAMMARY GLANDS

RATS

SHORT TERM

MICE

❖ Ductal/alveolar degen.,
pigmentation

❖ Ductal/alveolar degen.
pigmentation

MAMMARY GLANDS

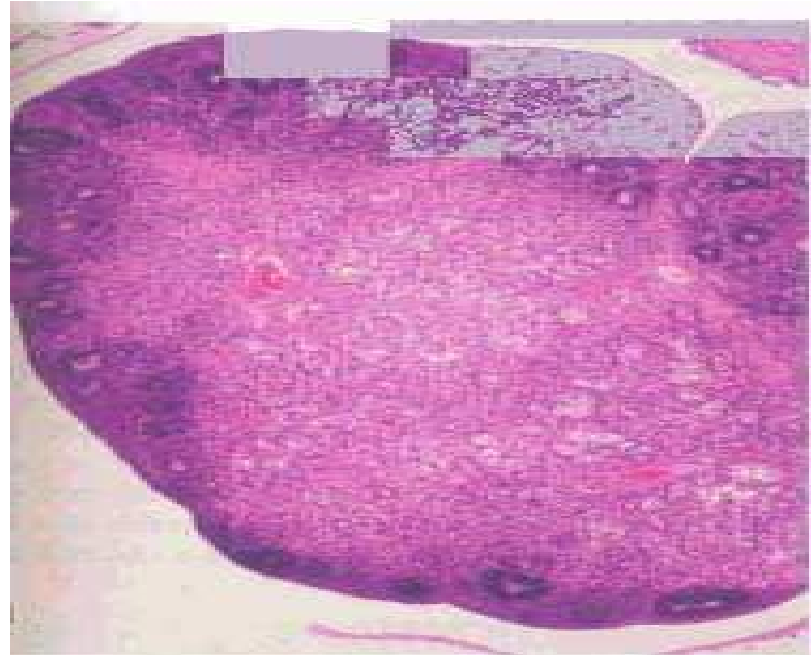
RATS

- ❖ Cystic changes: cystic degen. galactoceles, ductectasis, periductal fibrosis
- ❖ Fat necrosis
- ❖ Lobular hyper/focal hyper
- ❖ Fibroadenoma
- ❖ Lipoadenoma/adenolypoma
- ❖ Myoepithelioma – rare, origin ductal myoepith

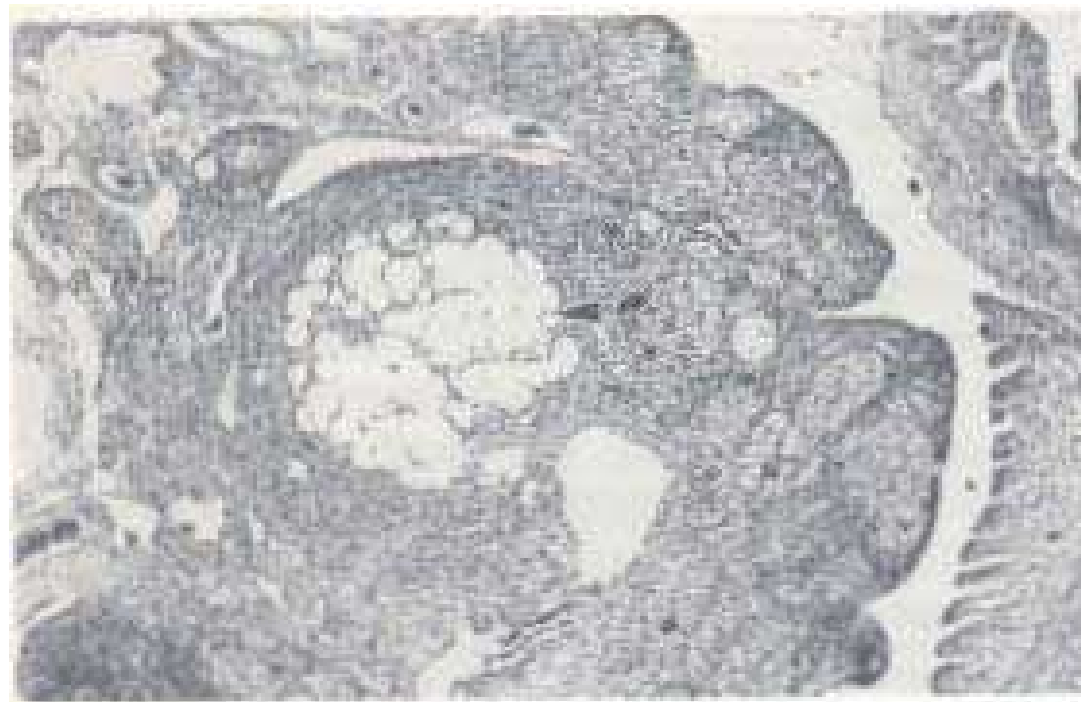
LONG TERM

MICE

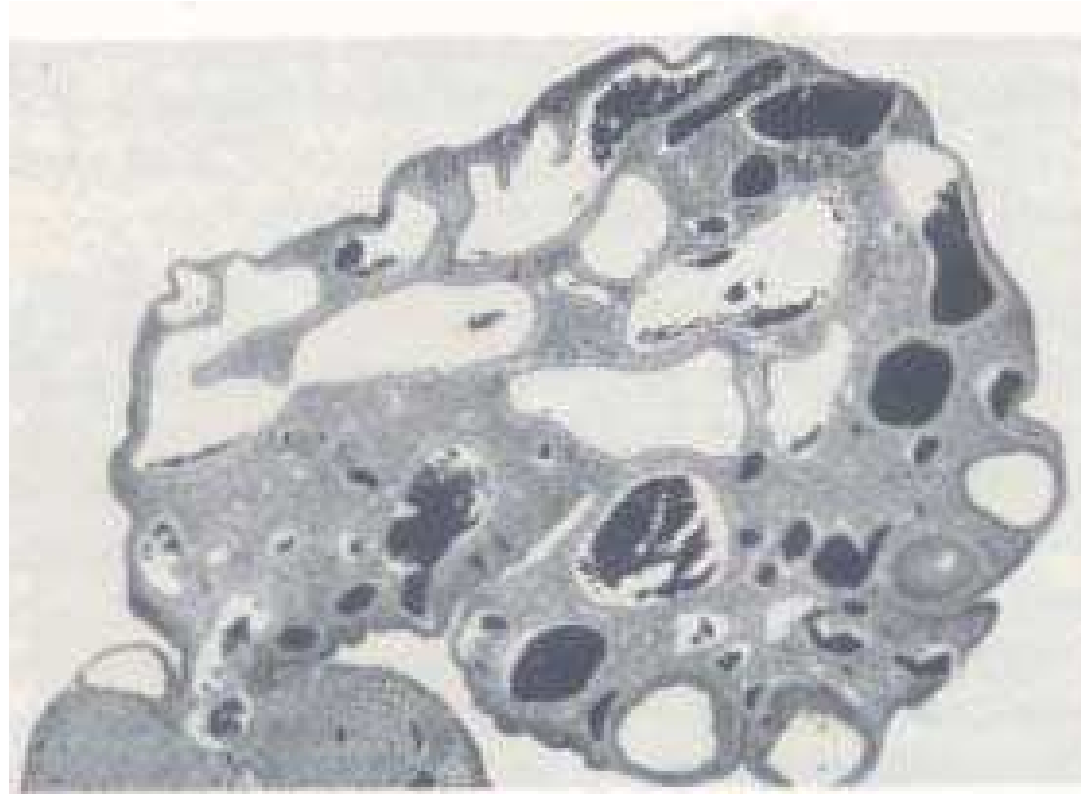
- ❖ Cystic changes : cystic degen., galactoceles, ductectasis, periductal fibrosis
- ❖ Fat necrosis
- ❖ Lobular hyper/focal hyper
- ❖ Adenocarcinoma
- ❖ Sq. carcinoma – ductal origin
- ❖ Myoepithelioma – rare, origin – ductal myoepith



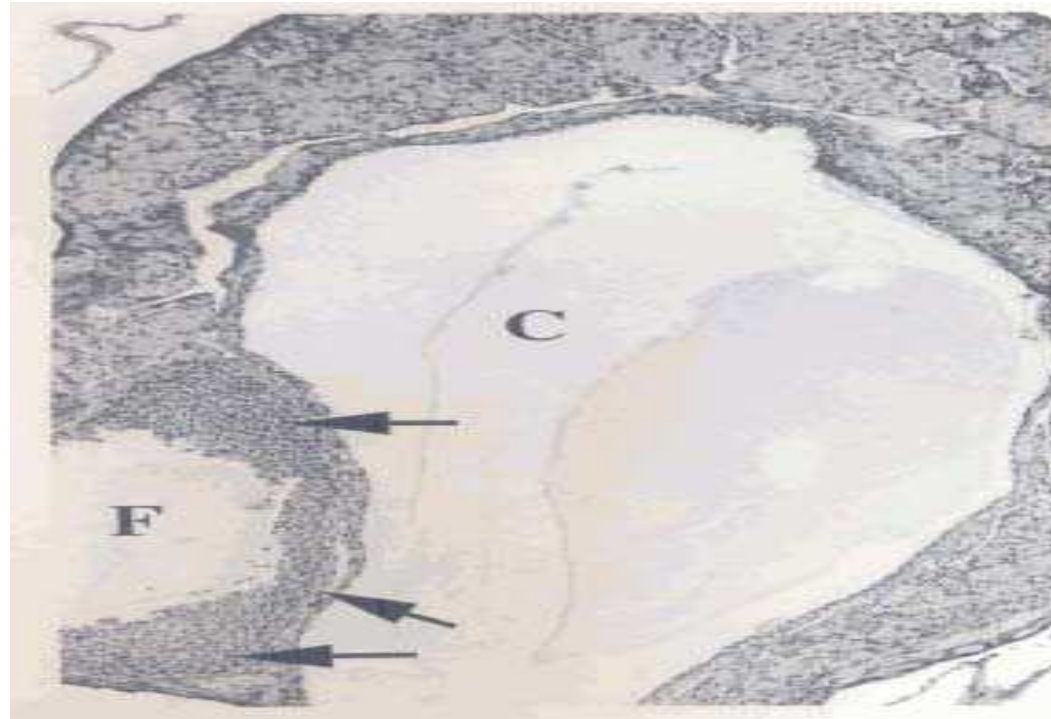
Ovary: Atrophy having marked stroma



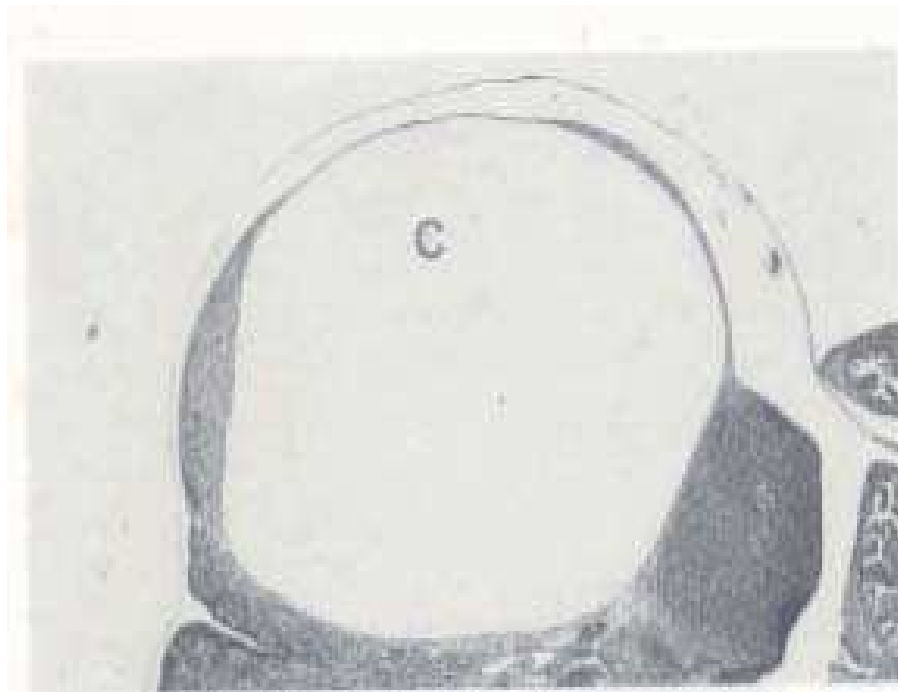
Ovary: Stromal fatty metaplasia (arrow)



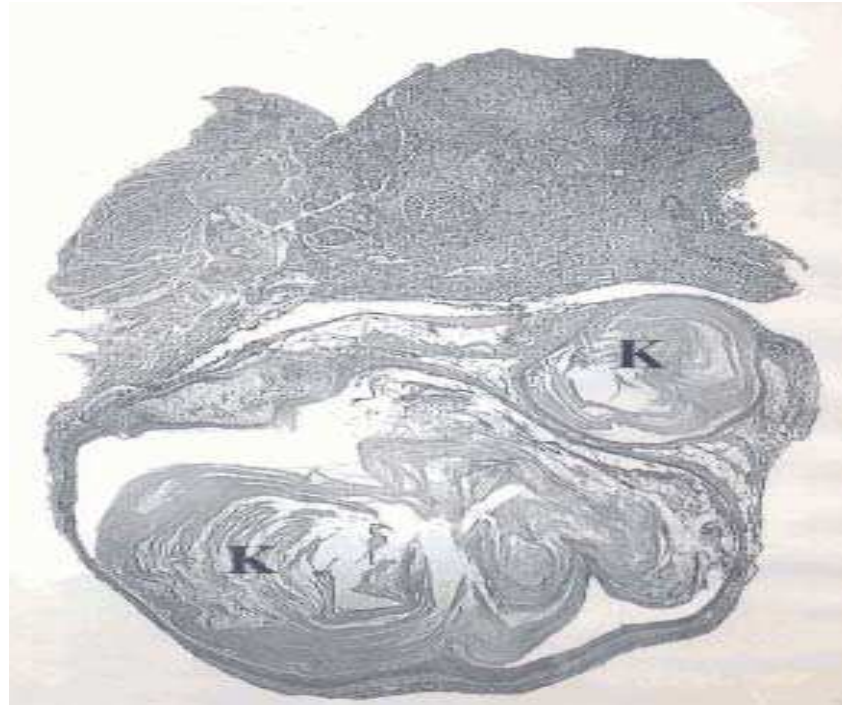
Ovary: Angiectasis



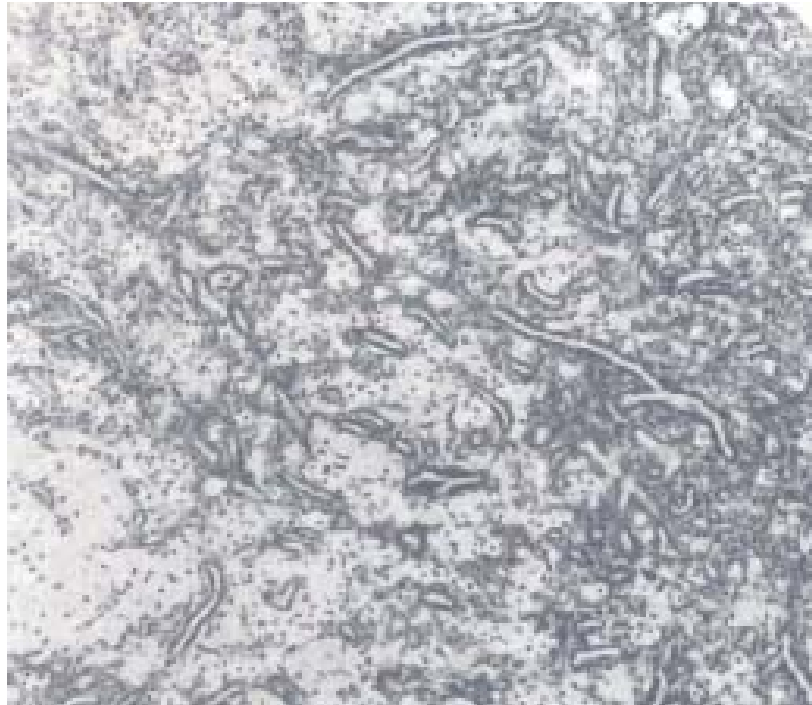
Ovary: Follicular cysts (C)



Ovary: Luteal cyst (c)



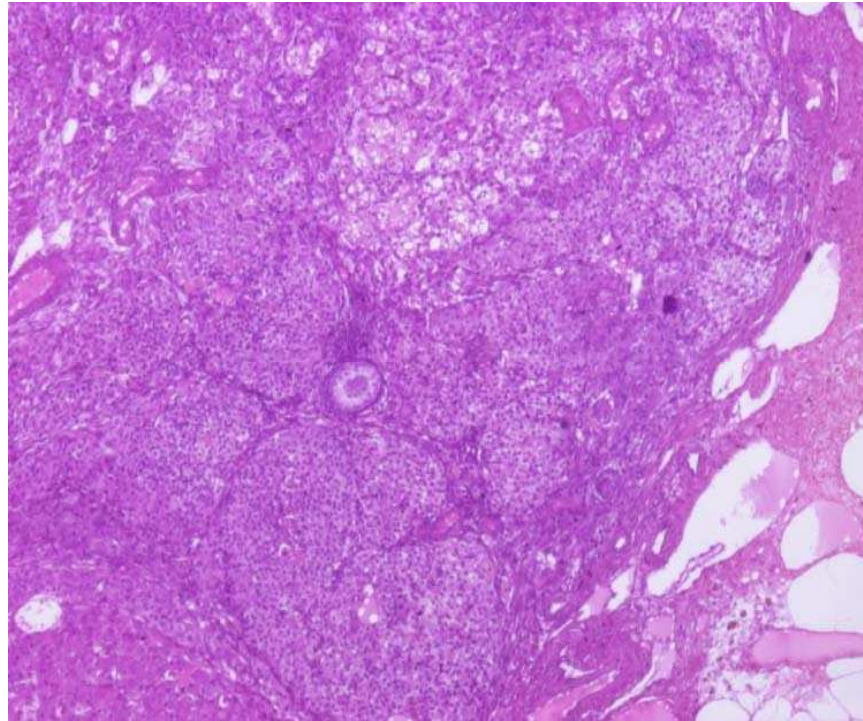
Ovary: Epidermoid cyst (K- keratin)



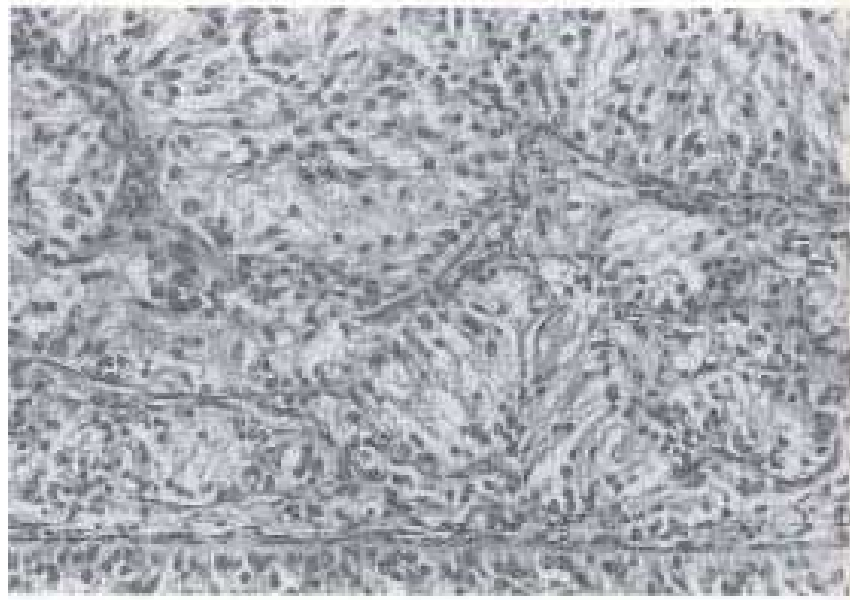
Ovary: Tubular hyperplasia



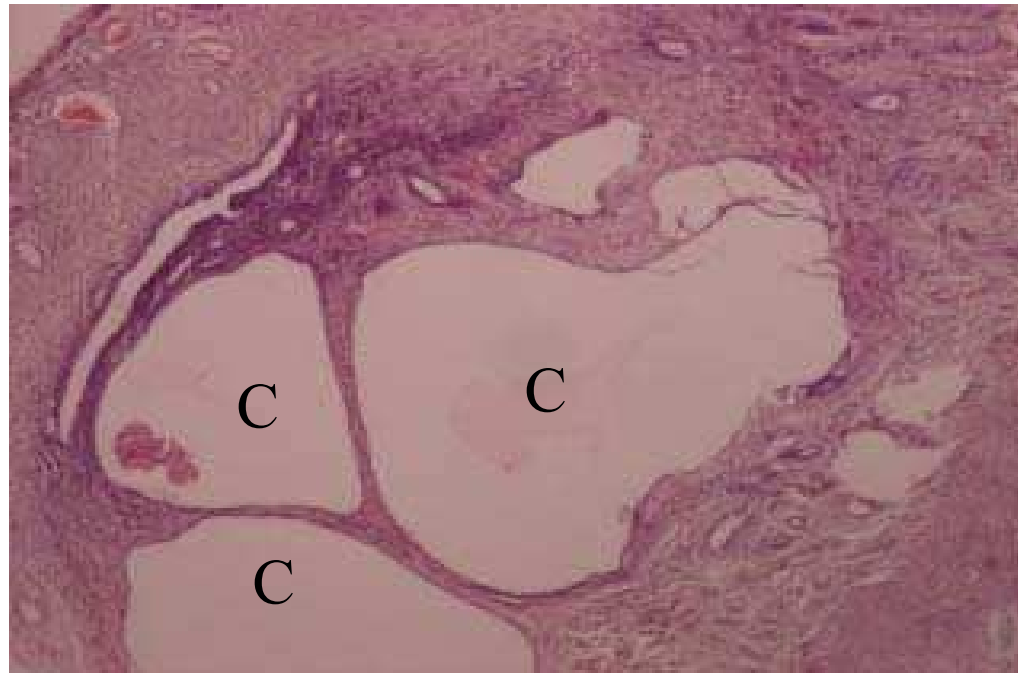
Ovary : Interstitial cell hyperplasia



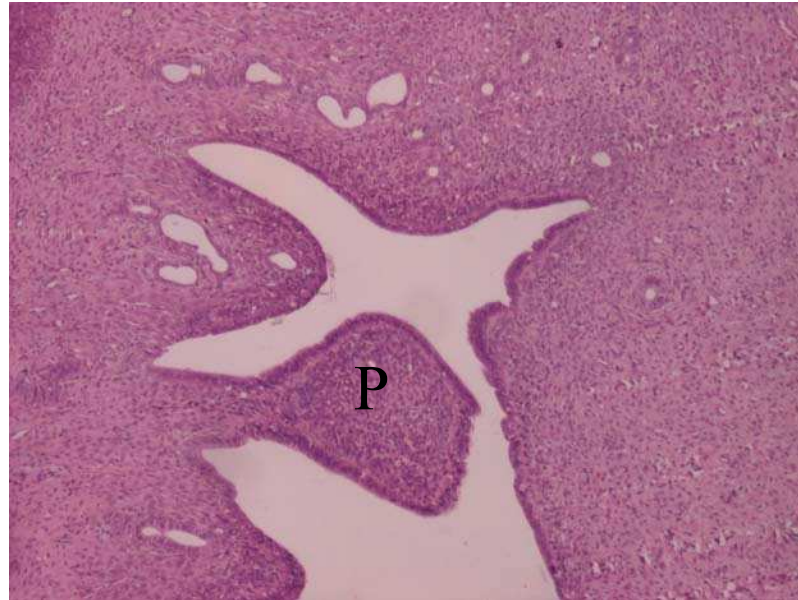
Ovary:Granulosa cell tumour



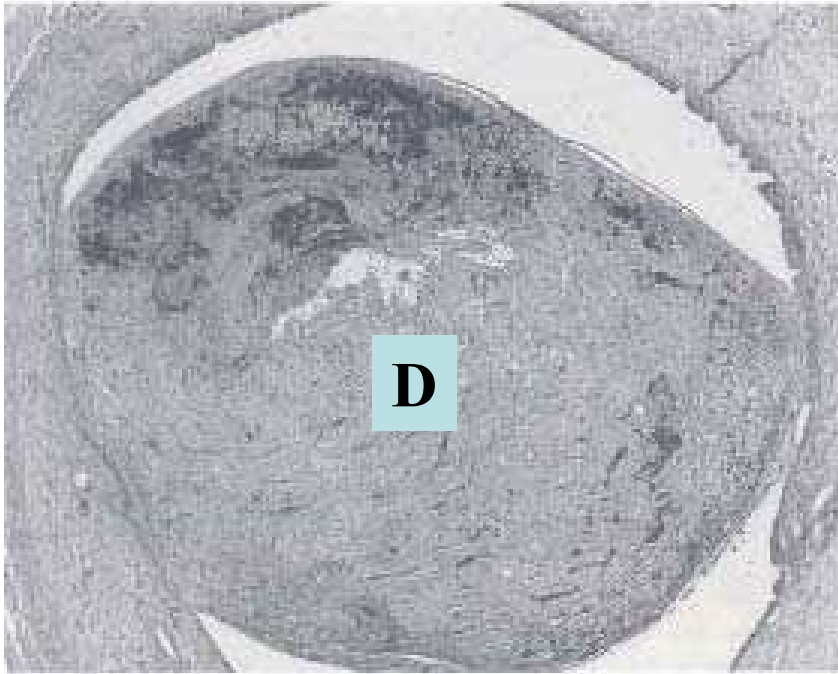
Ovary:Sertoli form tumour



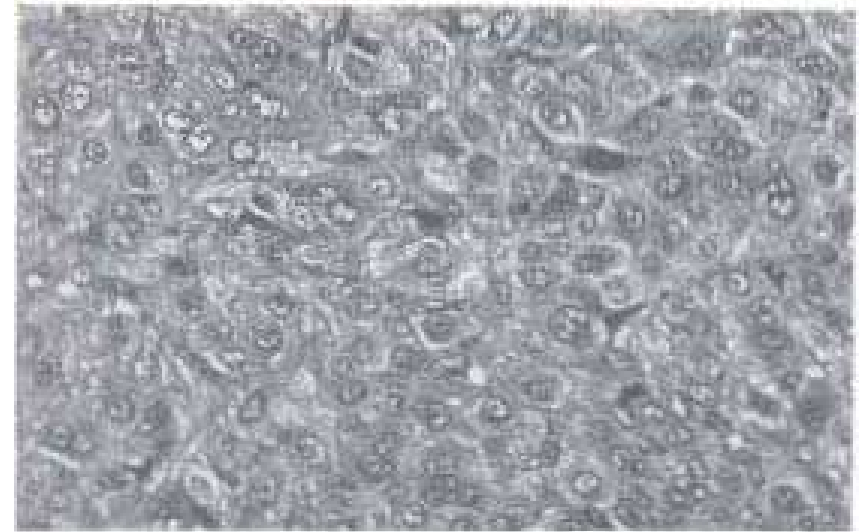
Uterus: Endometrial cystic hyperplasia (C)



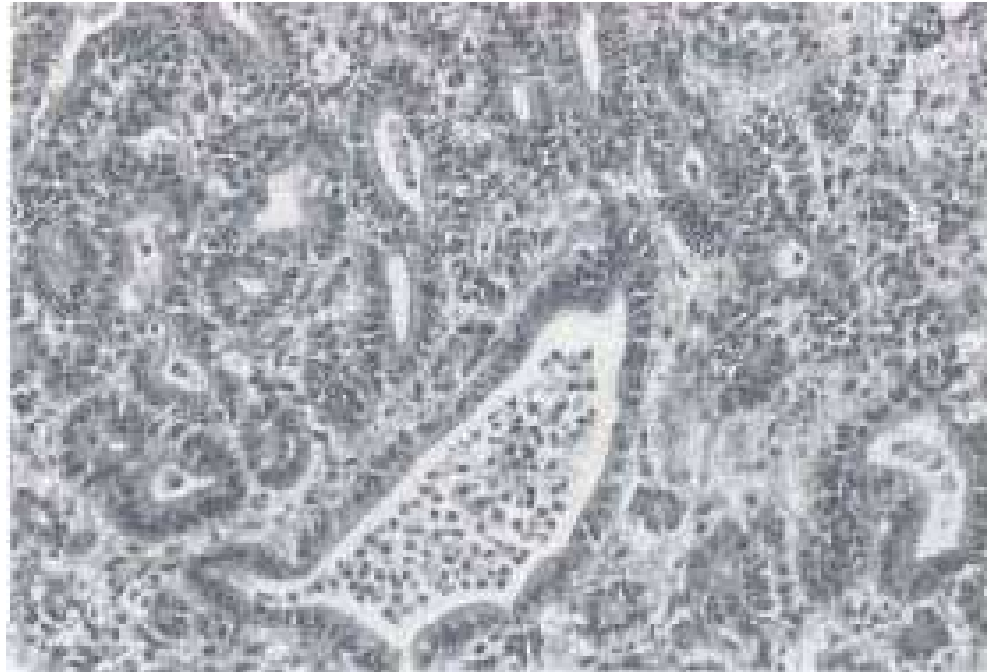
Uterus: Endometrial polyp (P)



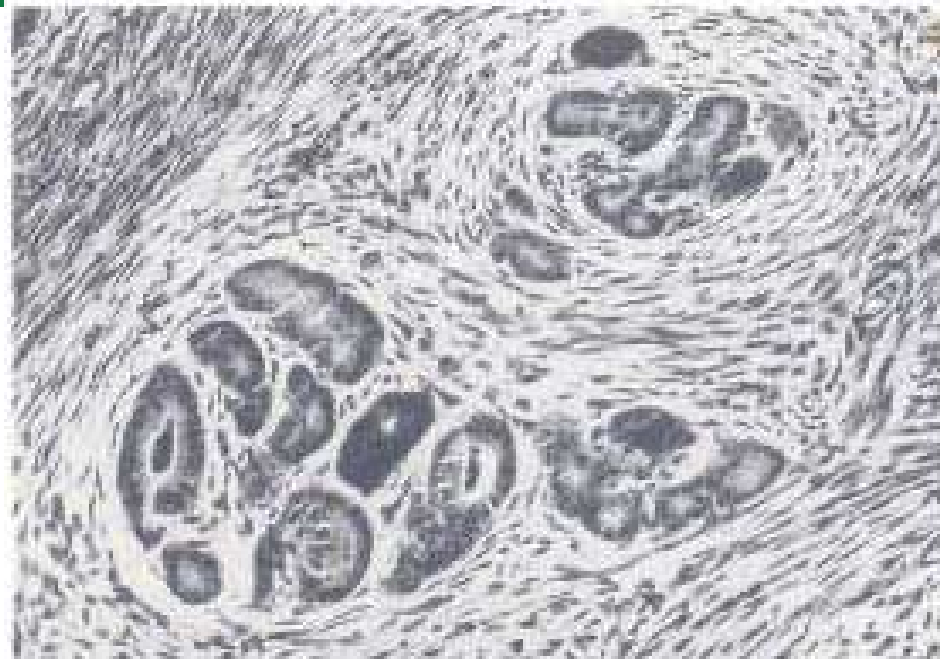
Uterus : Deciduoma (D)



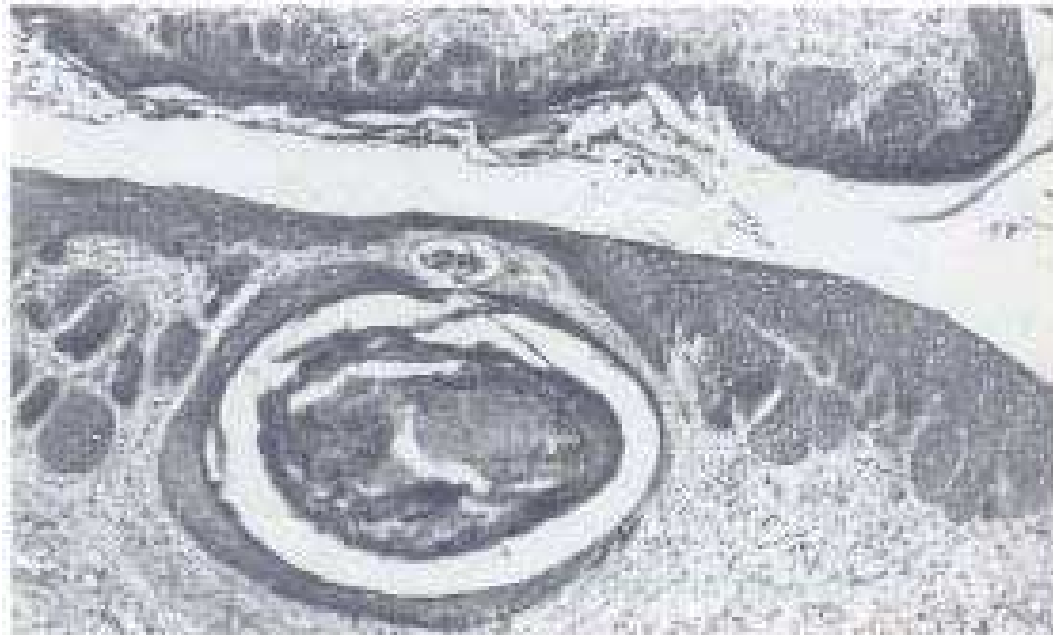
**Uterus : Deciduoma-large
epithelial cells**



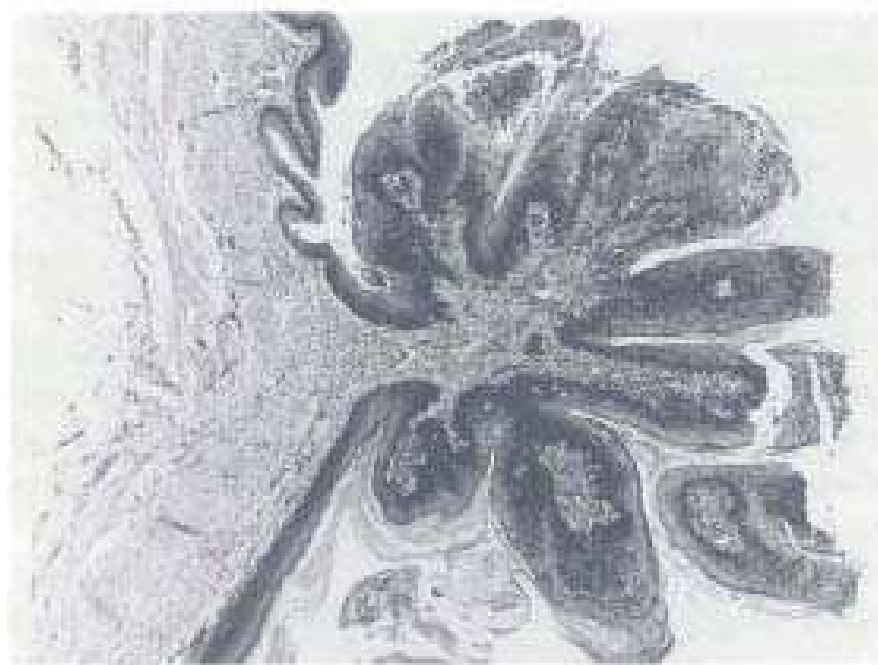
Uterus: Adenocarcinoma



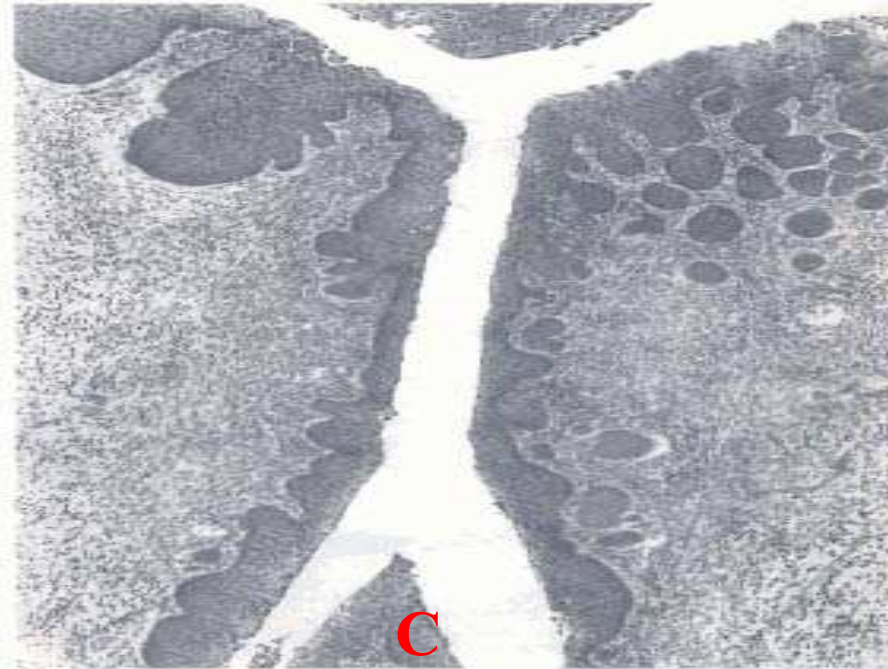
Uterus: Adenomyosis



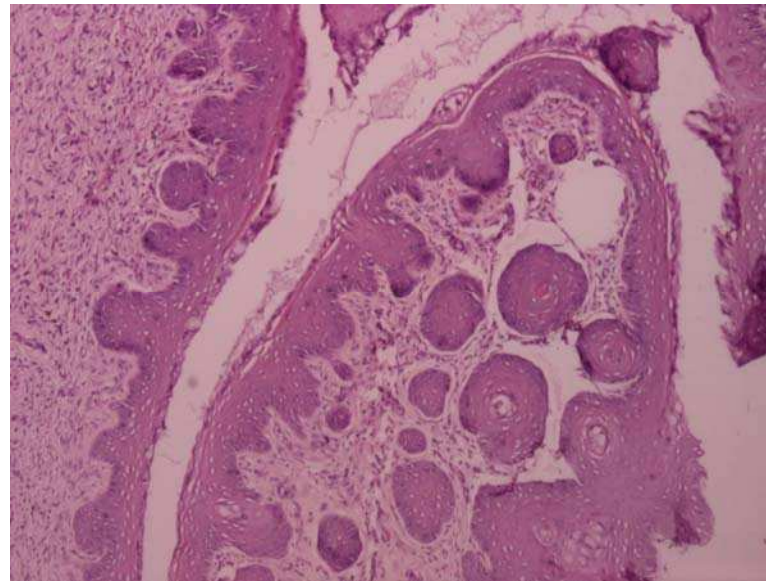
Cervix: Squamous epithelial cyst



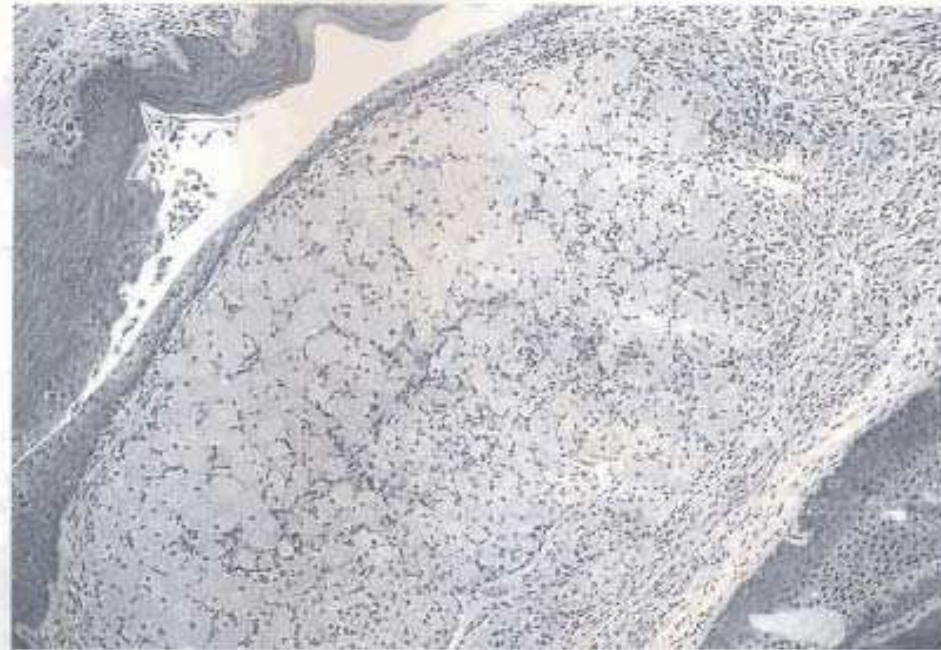
Vagina: Papilloma arising in fornix



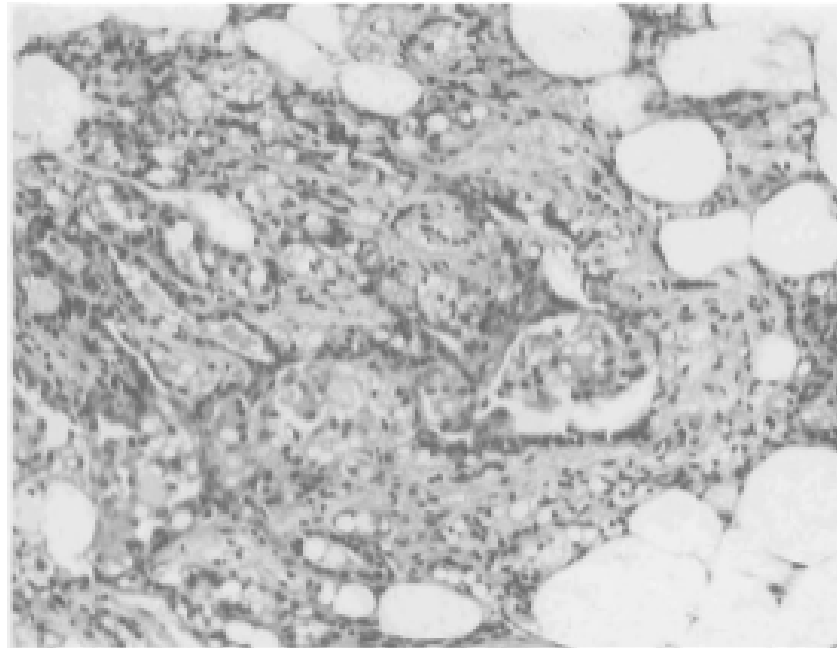
Vagina/Cervix: Hyperplasia, C- Cervix



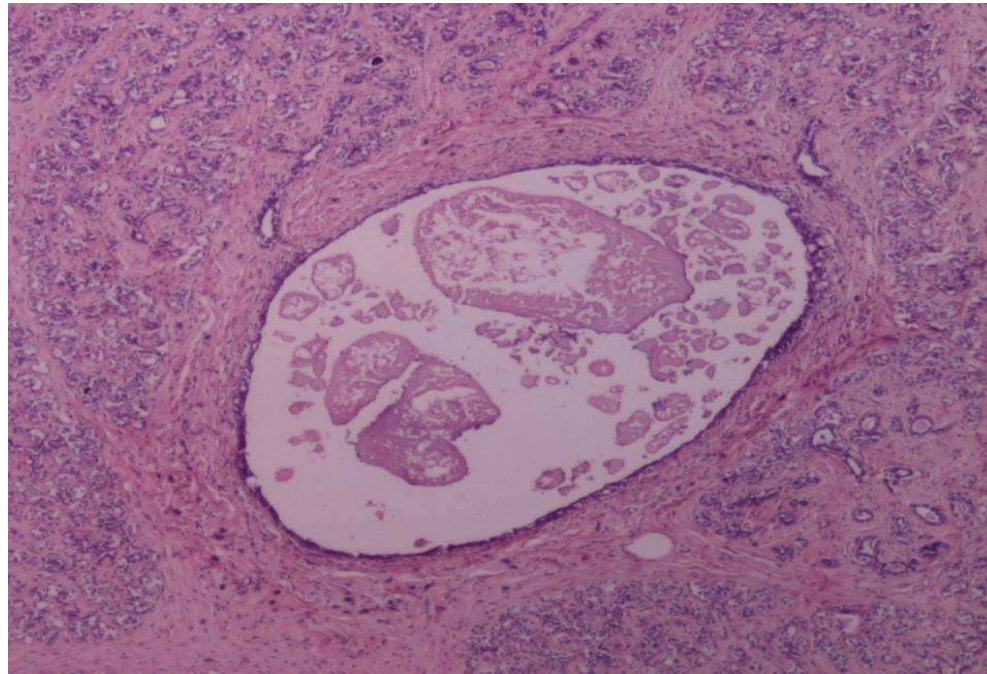
Vagina: Squamous cell carcinoma



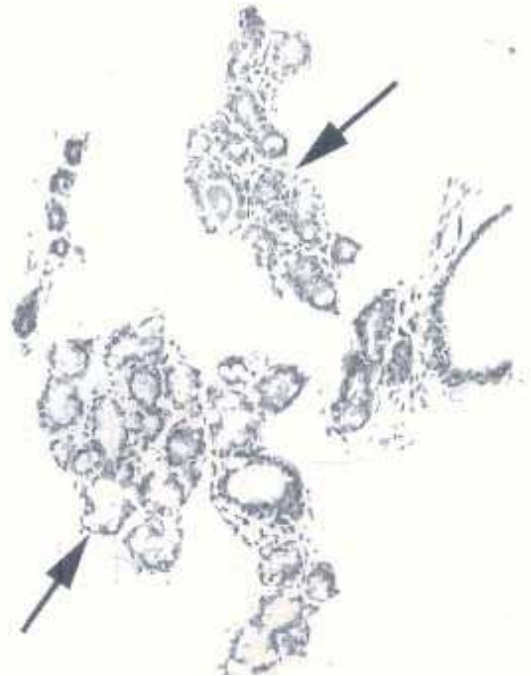
Cervix: Granular cell tumour



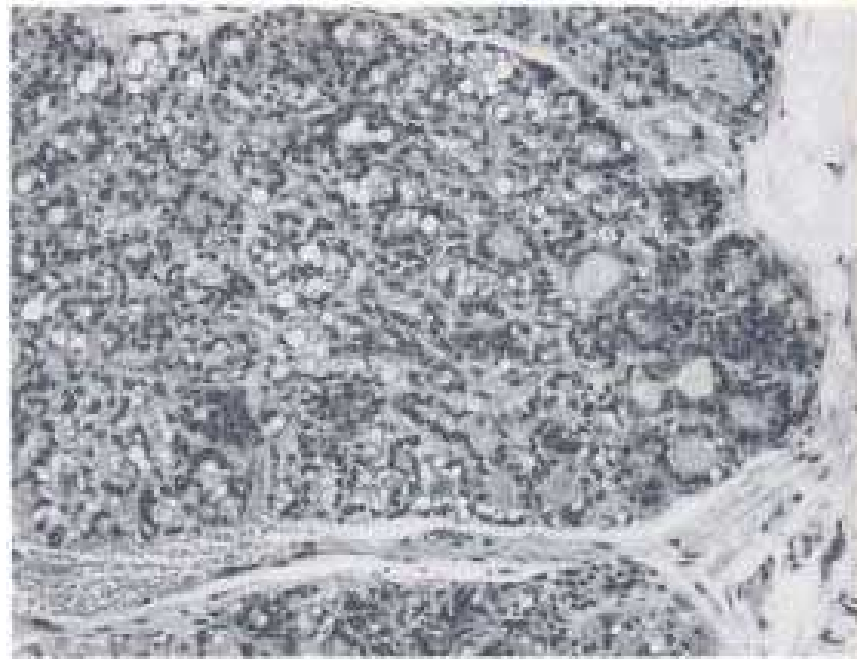
Mammary Gland: Alveolar degeneration



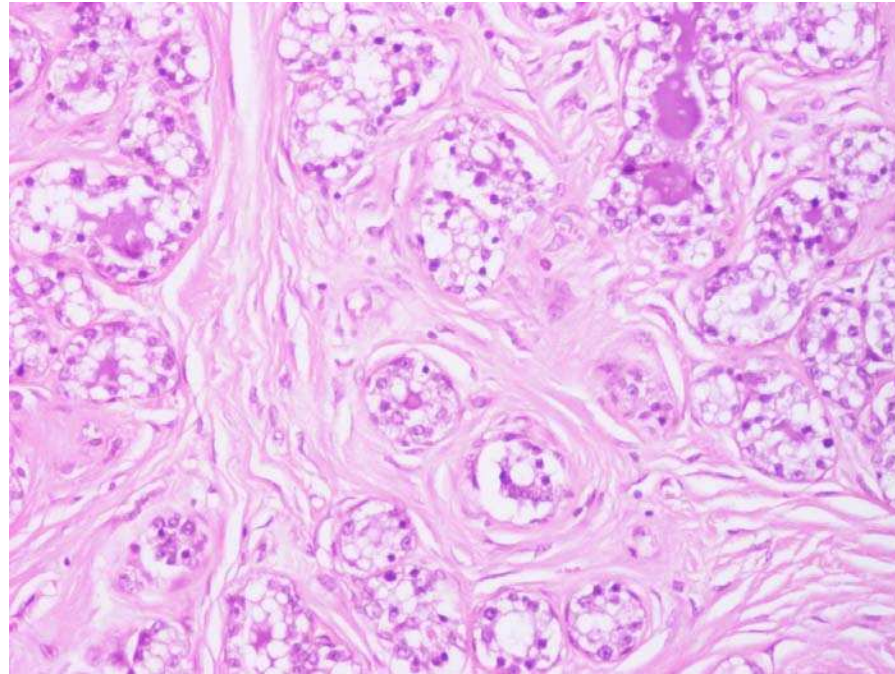
Mammary Gland: Ductectasis



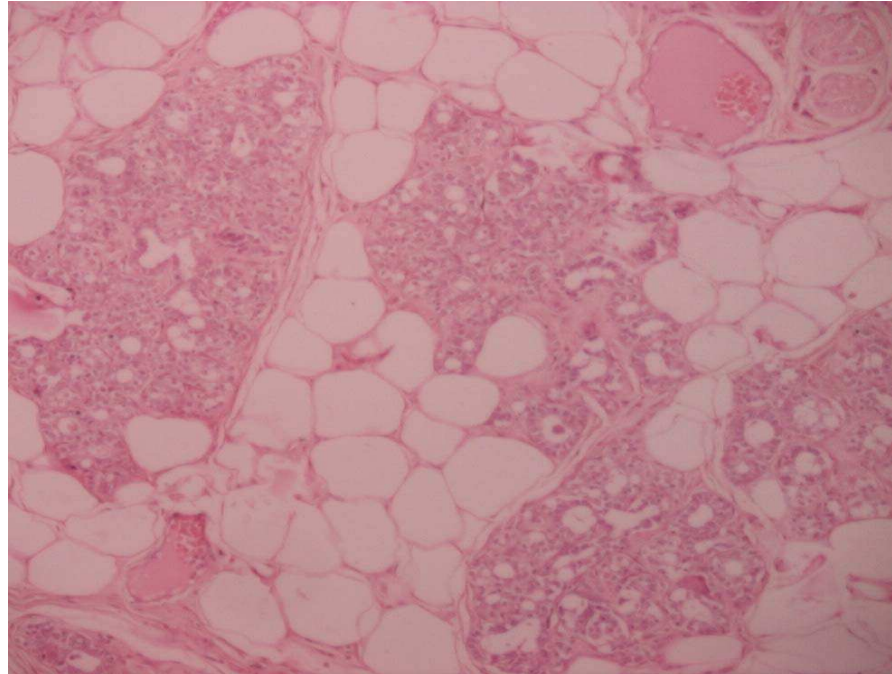
Mammary Gland: Focal hyperplasia (arrow)



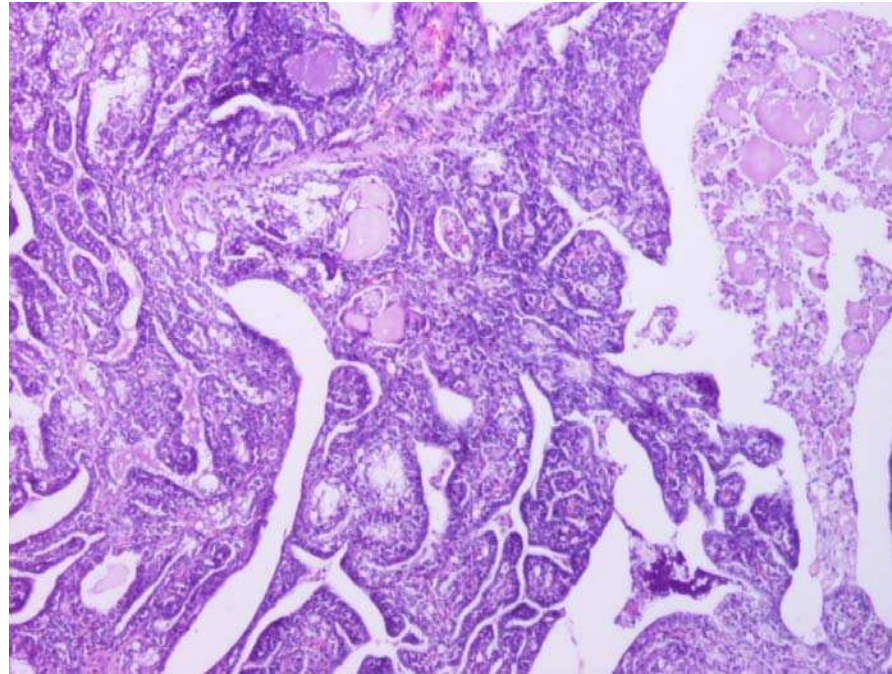
Mammary Gland: Lobular hyperplasia



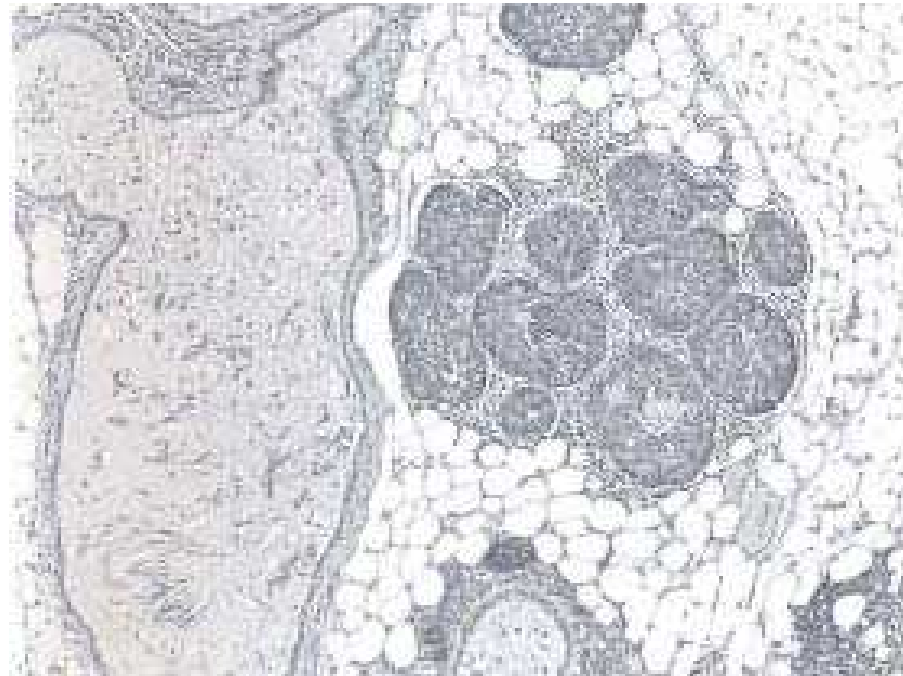
Mammary Gland:Adenofibroma



Mammary Gland:Adenolipoma



Mammary gland:Adenocarcinoma



Mammary gland:Adenocarcinoma (comedo pattern)



Thank You