# Epithelial Ovarian tumours

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*EPU*

*le 12 et 13 Avril*

# Ovary tumours

1. Epithelial tumours
2. Sex cord-stromal tumours
3. Germ cell tumours

# Epithelial tumours

1) Degree of proliferation and invasion

2) Histological type of epithelial lining

# Epithelial tumours

1) Degree of proliferation and invasion

2) Histological type of epithelial lining

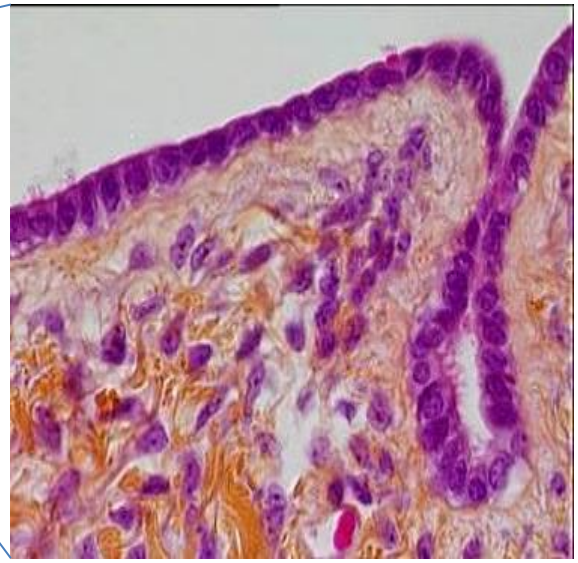
OMS, 2014

# Epithelial tumours

**Degree of proliferation and invasion**

- Benign
  - no proliferation
  - no invasion

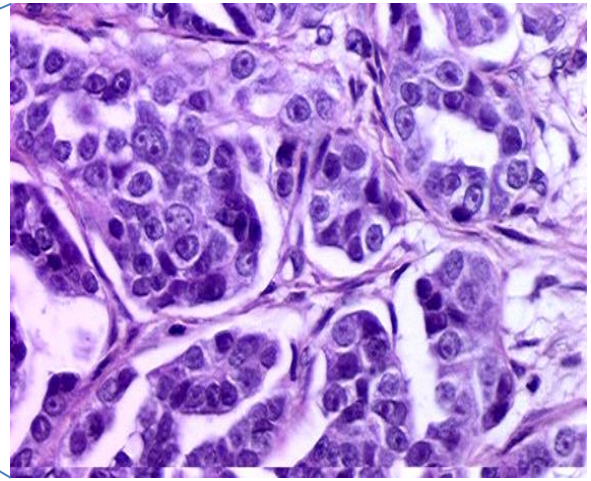
60%



- Malignant

  (85-90% of cancer)
  - proliferation
  - invasion

30%



# Epithelial tumours

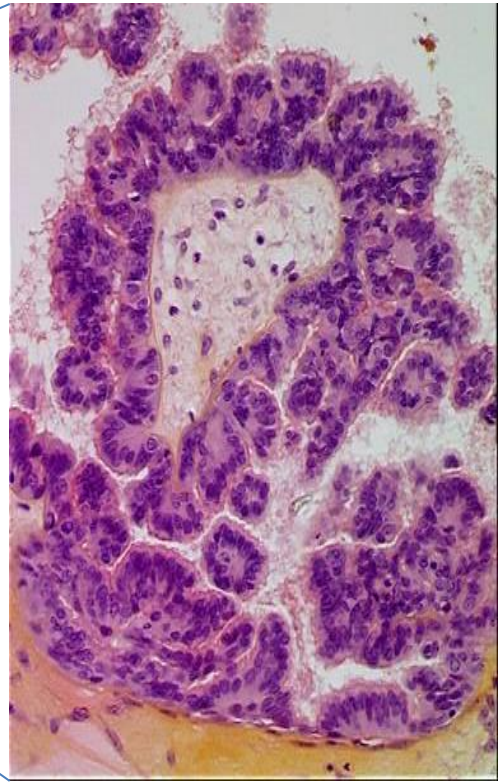
OMS, 2014

**Degree of proliferation and invasion**

- Benign 60%
  - no proliferation
  - no invasion
- Borderline 10%

  no term of LMP
  - Proliferation
  - No invasion
  - (microinvasion <5mm)
- Malignant 30%

  (85-90% of cancer)
  - proliferation
  - invasion



# Epithelial tumours

1) Degree of proliferation and invasion

2) Histological type of epithelial lining

OMS, 2014

# Epithelial tumours

**Histological type of epithelial lining**

| | |
|---|---|
| • Serous | 50% |
| • Endometrioid | 20% |
| • Mucinous | 15% |
| • Séro-mucinous | rare |
| • Clear cell | 5% |
| • Brenner | 5% |
| • Indifferentiated | 5-7% |

# Borderline tumours

**Definition criteria**

- Ovary tumours +++

  (with or without implants)

- Essential criterion

  absence of infiltration of the ovarian stroma

- Histopathology
  - epithelial budding
  - pluristratification
  - mitotic activity
  - cytonuclear atypia

# Borderline tumours

**General feature**

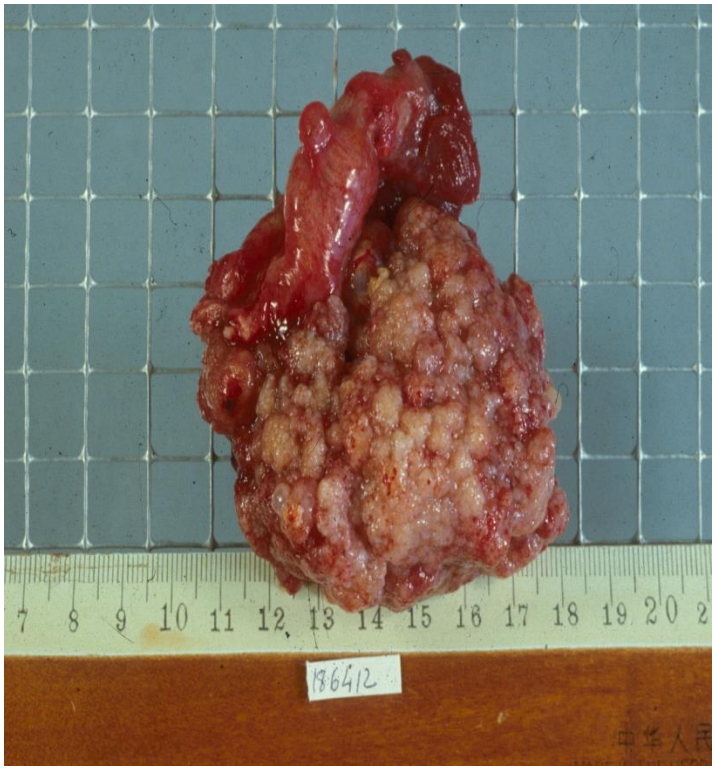
- Frequency (10 to 15% ovary tumours)
- Mean age : 40 years (younger than carcinoma)
- Macroscopy : no  specific
- Good prognosis  +++(90 to 95% survival at 5 and 10 years )
- Treatment : conservative surgery

# Serous borderline tumour

OMS 2014

# Serous borderline tumour

- Epithelial cell types ressembling those of the fallopian tube (including ciliated cells)
- 10% of all serous tumors
- Mean age : 42 years
- Bilateral and exophytic component (25 à 30%)
- 65-70%  : stage I
- Survival of 90 to 95% ( all stage)

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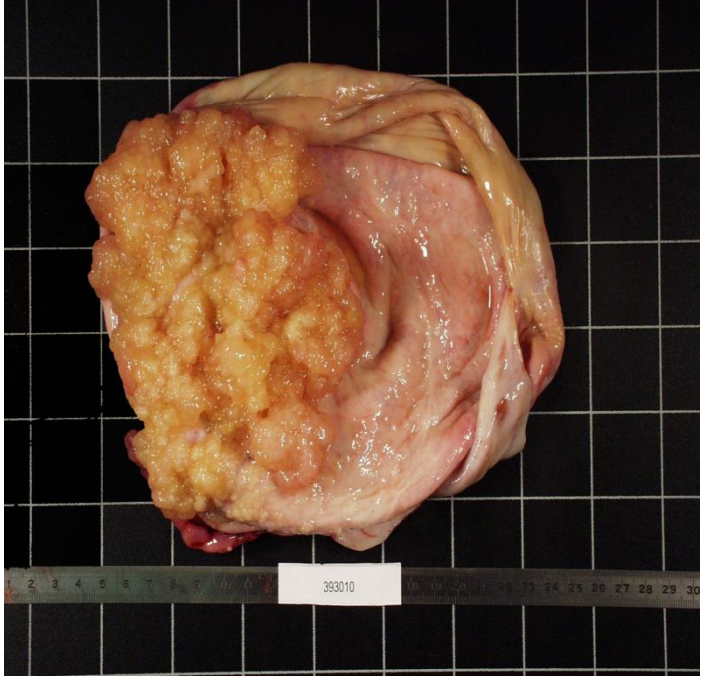
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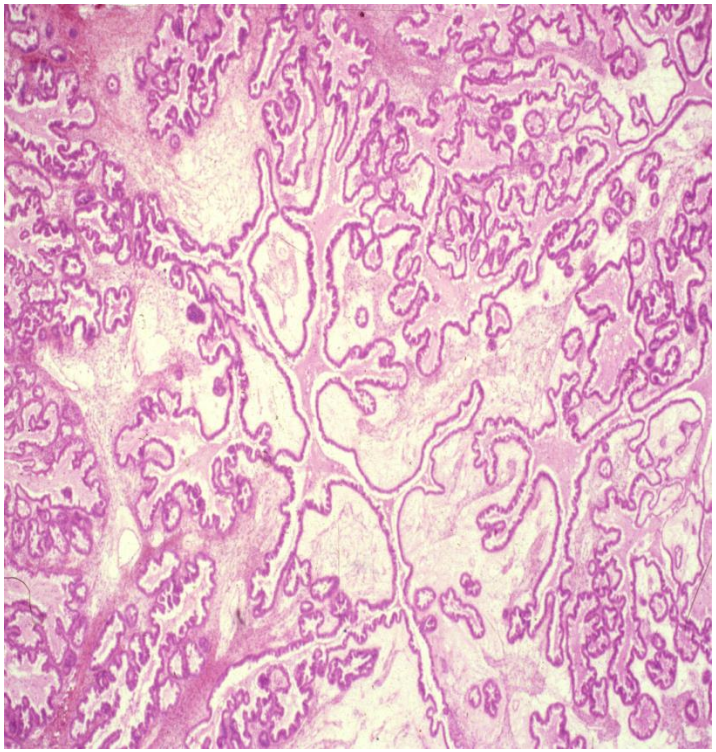
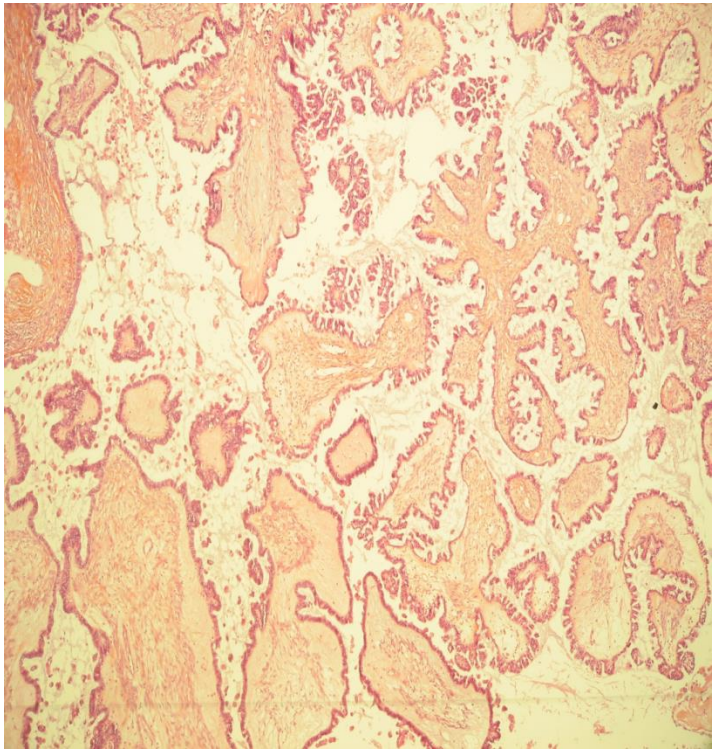
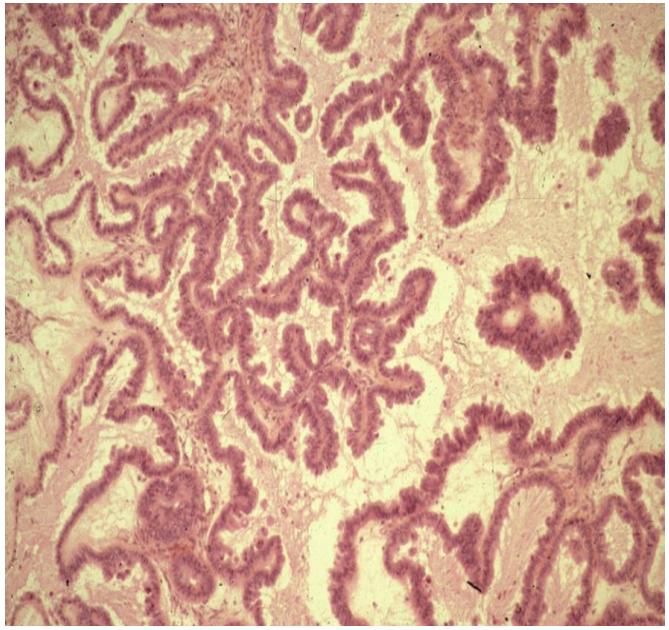
# Serous borderline tumour

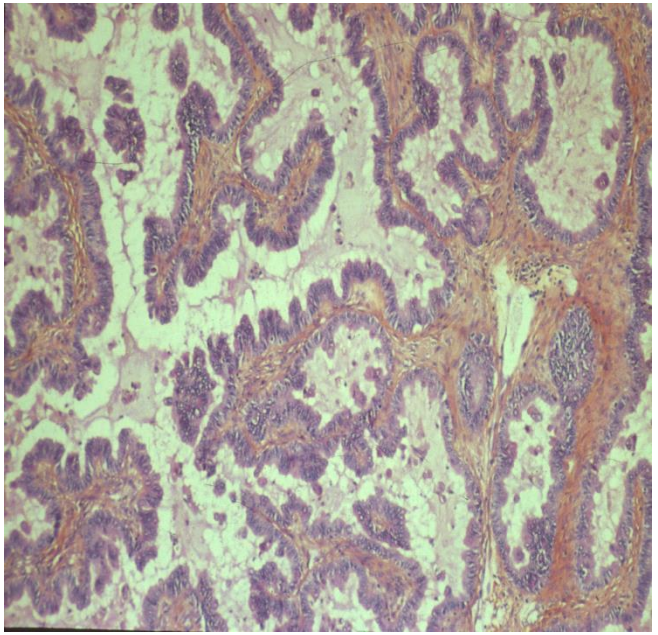
- Histopathology :
  - homogeneous with papillary architecture +++
  - Numerous intra-cystic and / or ovarian surface papillae
  - Non stratified or stratified cuboidal to columnar cells (ciliated )
  - Moderate atypia and few mitosis (<4/10 HPF)
  - Variable number of cells
    - hobnail cells
    - cells with clear cytoplasm matériel mucoïde

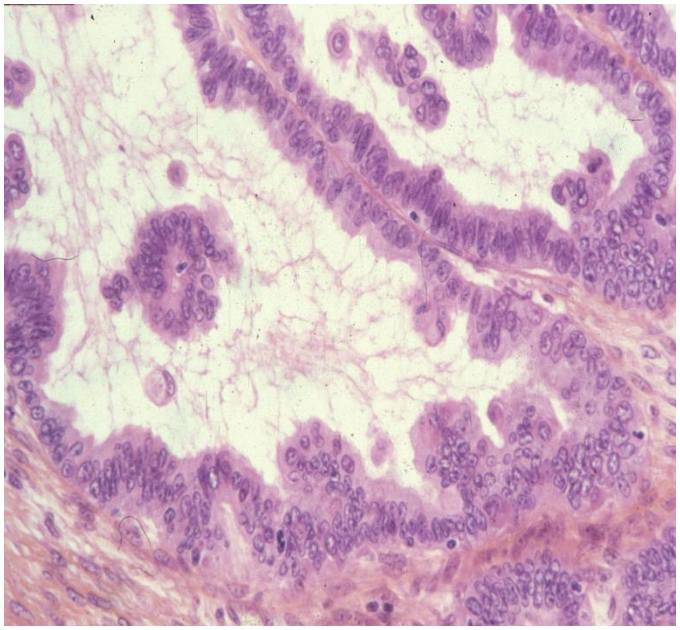
# Serous borderline tumour





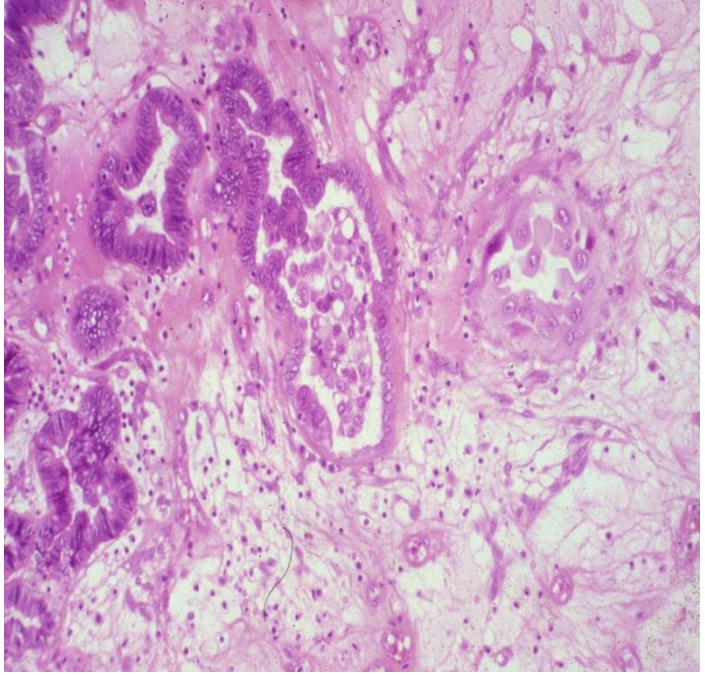


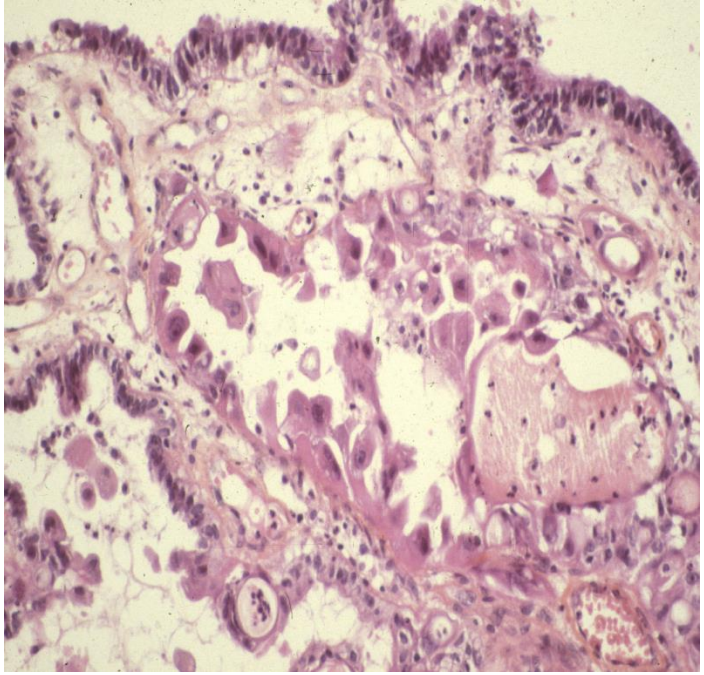


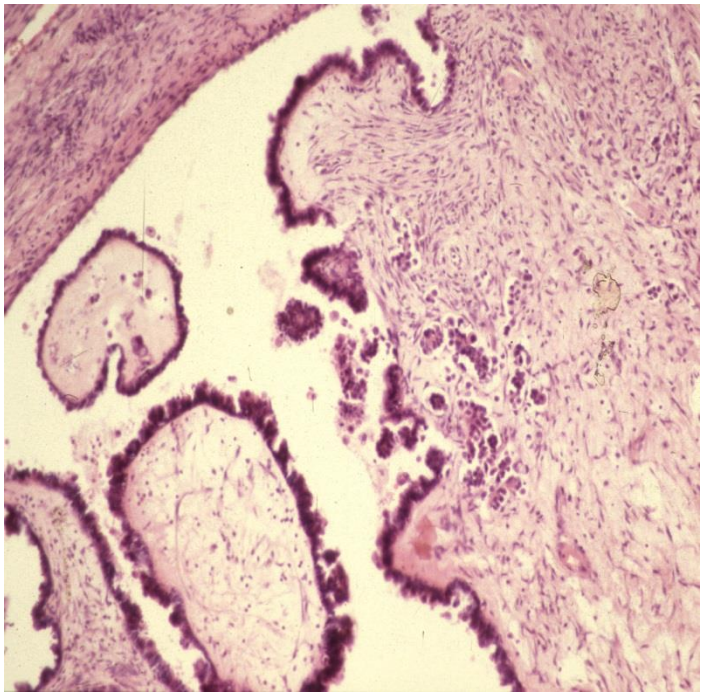


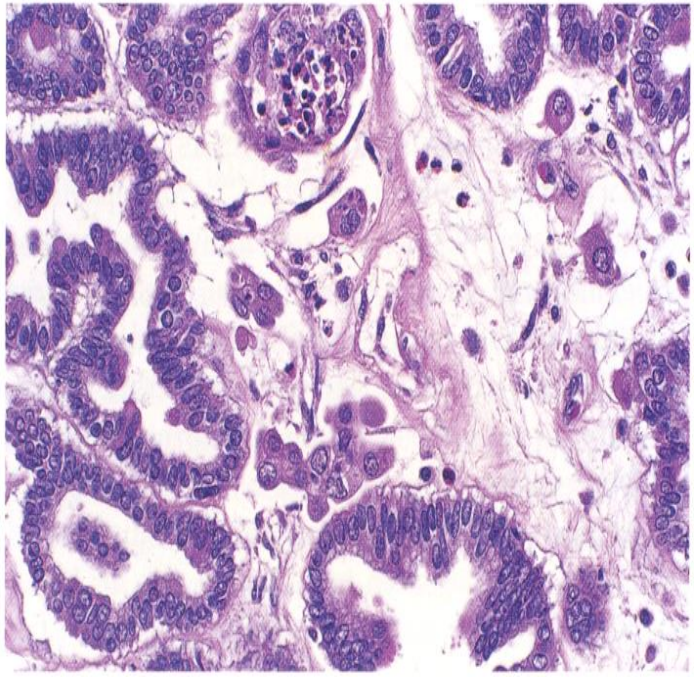
# Serous borderline tumour

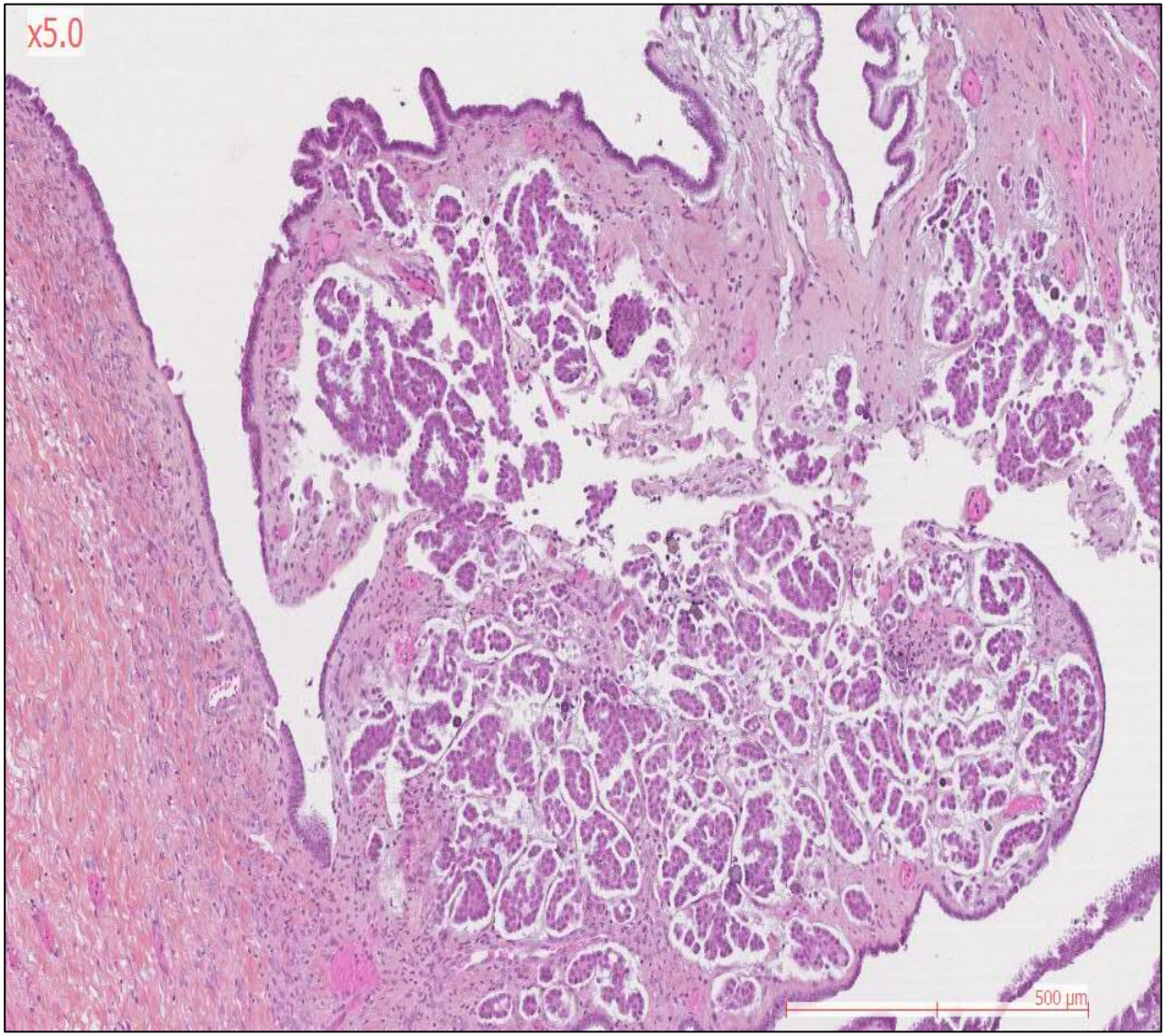
- Microinvasion
  - 10% of serous borderline tumours
  - Clusters of cells or isolated cells surrounded by a halo of retraction without reaction desmoplastic stroma .
  - Cells : abundant eosinophilic cytoplasm (simular to the eosinophilic cells on the surface of papillae)
  - Measure < 5mm
  - No prognostic significance










x5.0
500 µm

# Microinvasion

- <5 mm
- Small foci of low grade serous carcinoma
- Architecture : papillae
- Moderate atypia

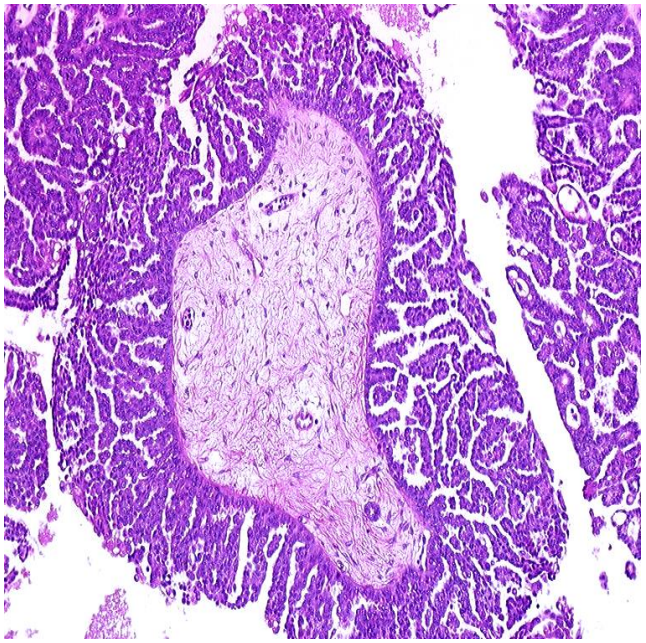
To distinguish these small carcinoma from microinvasion some pathologist  refered to them as Microinvasive carcinoma

# Serous borderline tumour

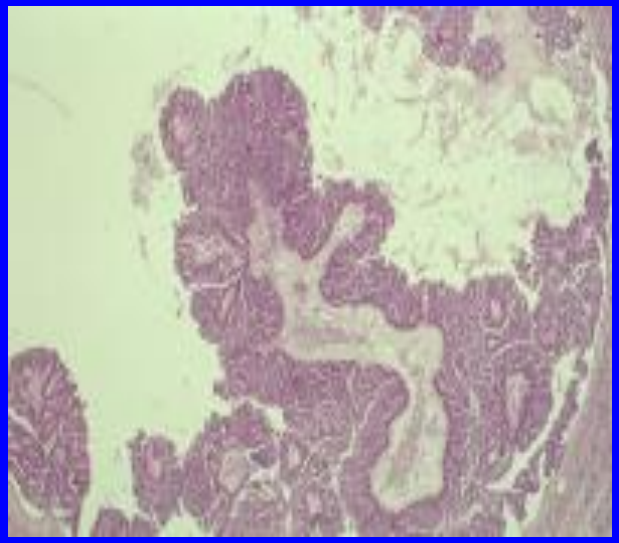
- Micropapillary variant
  - Micro papillary architecture
  - Or cribriform  pattern on the surfaces of the papillae
  - Cells : rounded and moderate atypia
  - Mitotic index : low
  - Confluent area of micropapillarity measuring > 5mm
  - Sampling : +++
  - No invasive carcinoma
  - Serous borderline tumour+++

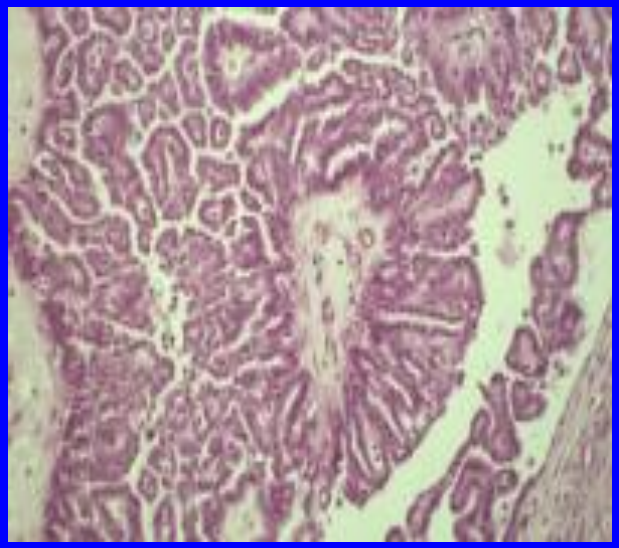
# Serous borderline tumour OMS 2014

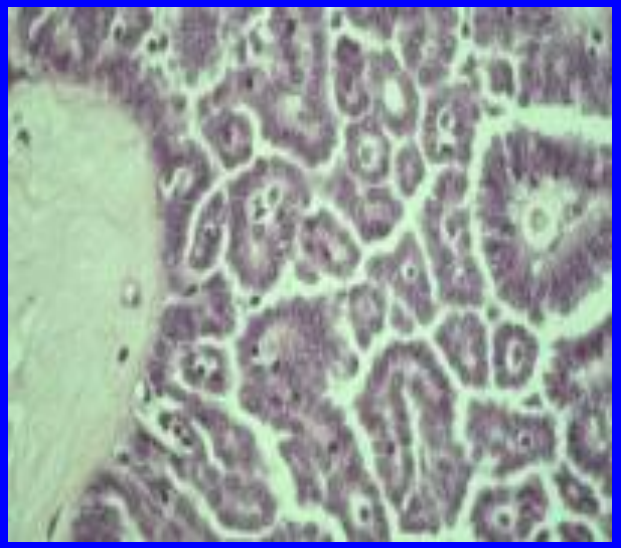
Serous borderline tumour-micropapillary variant
= **Non invasive** low-grade serous carcinoma



# Tumeurs d ’architecture micro papillaires





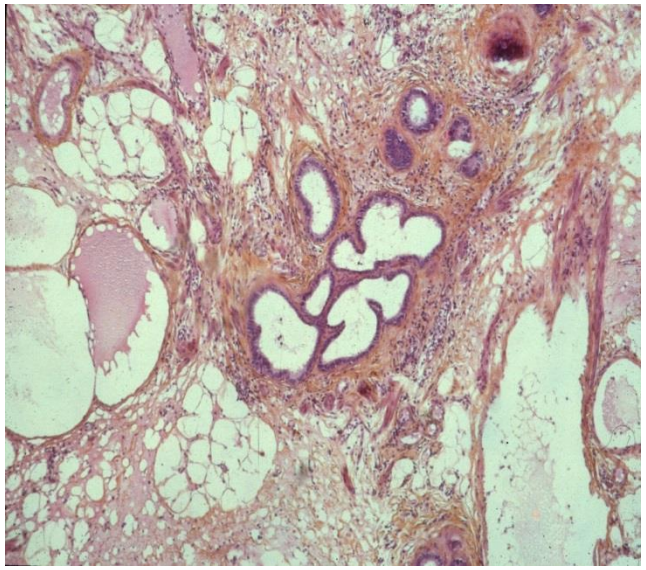


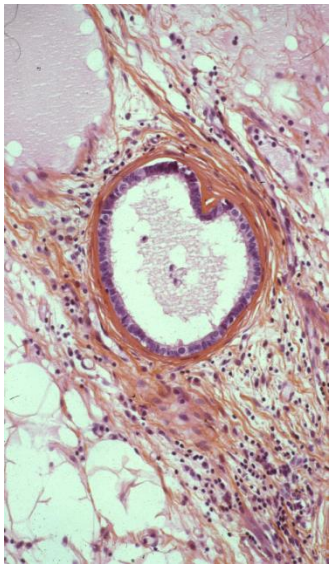
# Serous borderline tumour

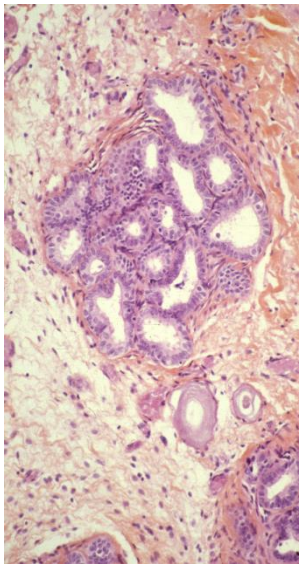
- extra-ovariennes lesions
  - Peritoneal
  - Pelvic lymph nodes

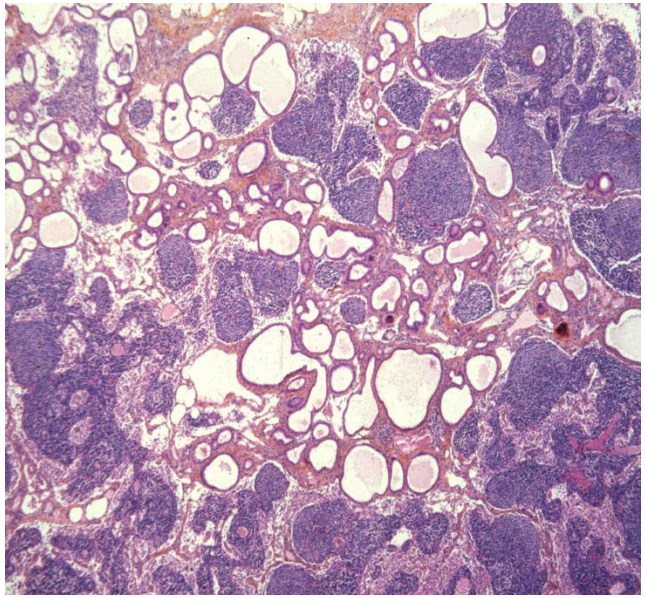
- **Differents types**
    - Endosalpingiosis
    - Peritoneal Implants
      - non invasive
      - invasive

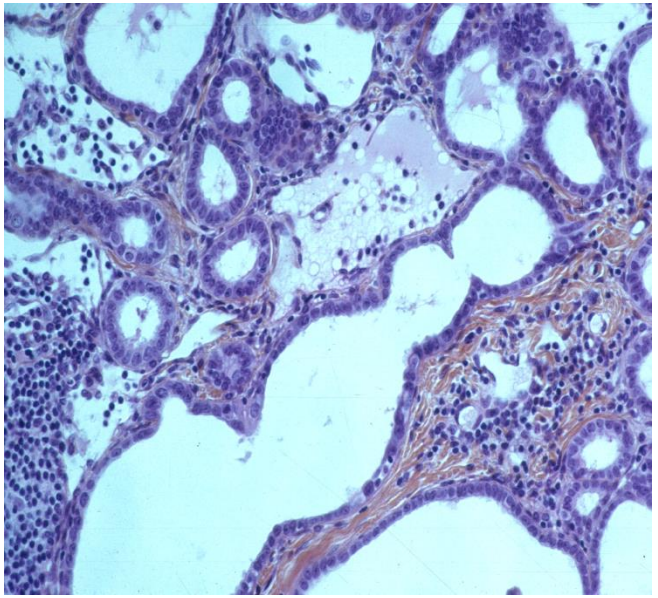
# Endosalpingiosis











# Serous borderline tumour

- Peritoneal Implants
  - 20 à 46%
  - Ovary tumour
    1. bilatéral and exophytic
    2. Micropapillary variant

  classification
  - Non invasive (88%)
  - Invasive (12%)

# Serous borderline tumours

- Non invasive Implants (88%)
  - Epithelial type non invasive implants

    Papillary architecture

    Detached clusters of cells

    Rounded eosinophilic cells

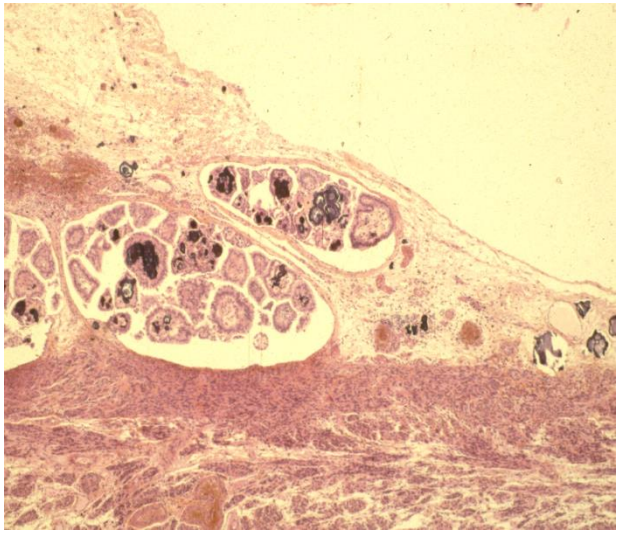
    On the surface of the peritoneal or fibrous septa (epiploon)
  - Implants non invasive desmoplastic

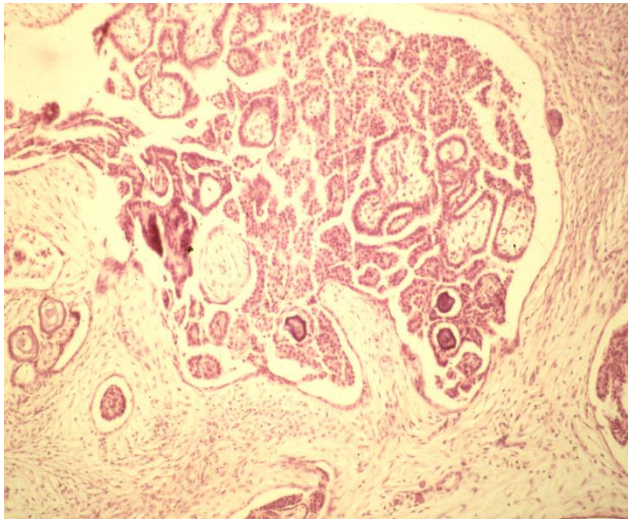
    Idem non invasive implant

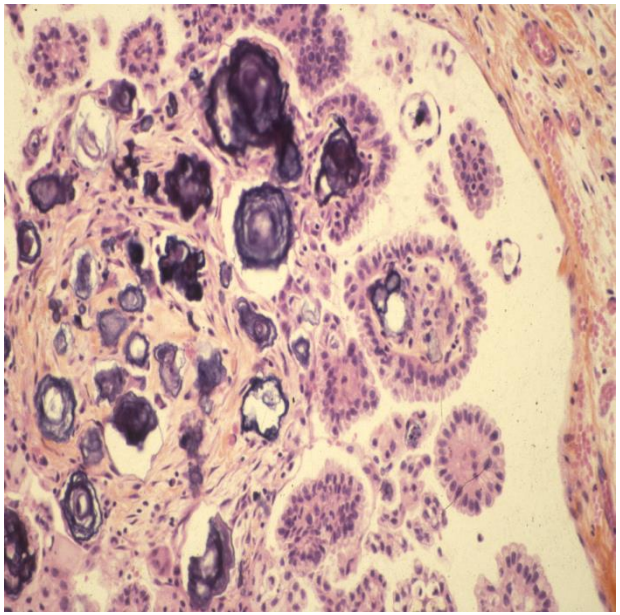
    But gland like epithelial structures are surrounded by

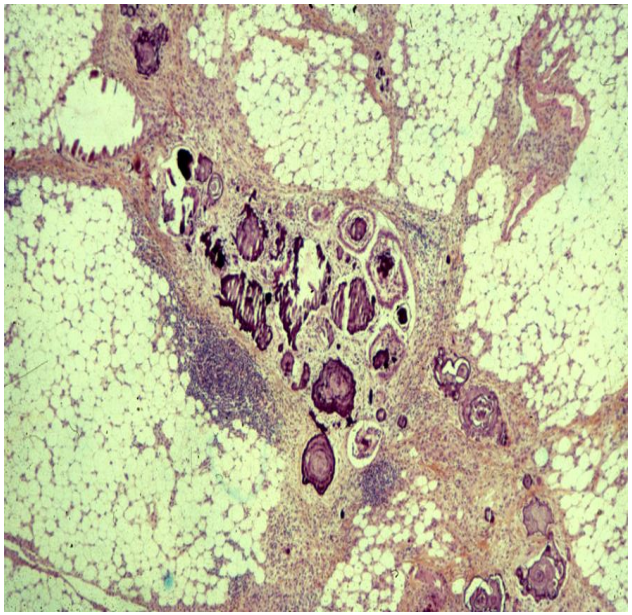
    a granulation tissue-type stroma with reactive spindle cells

# Non invasive implants



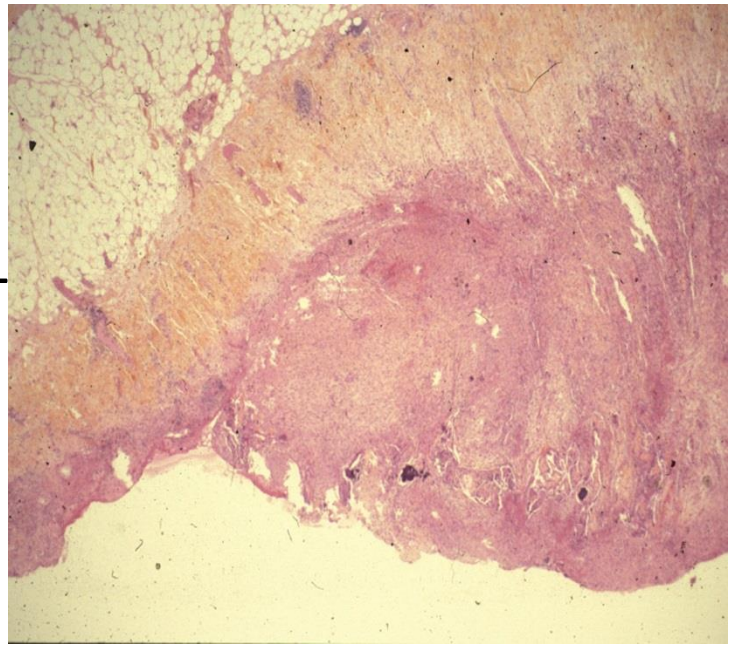


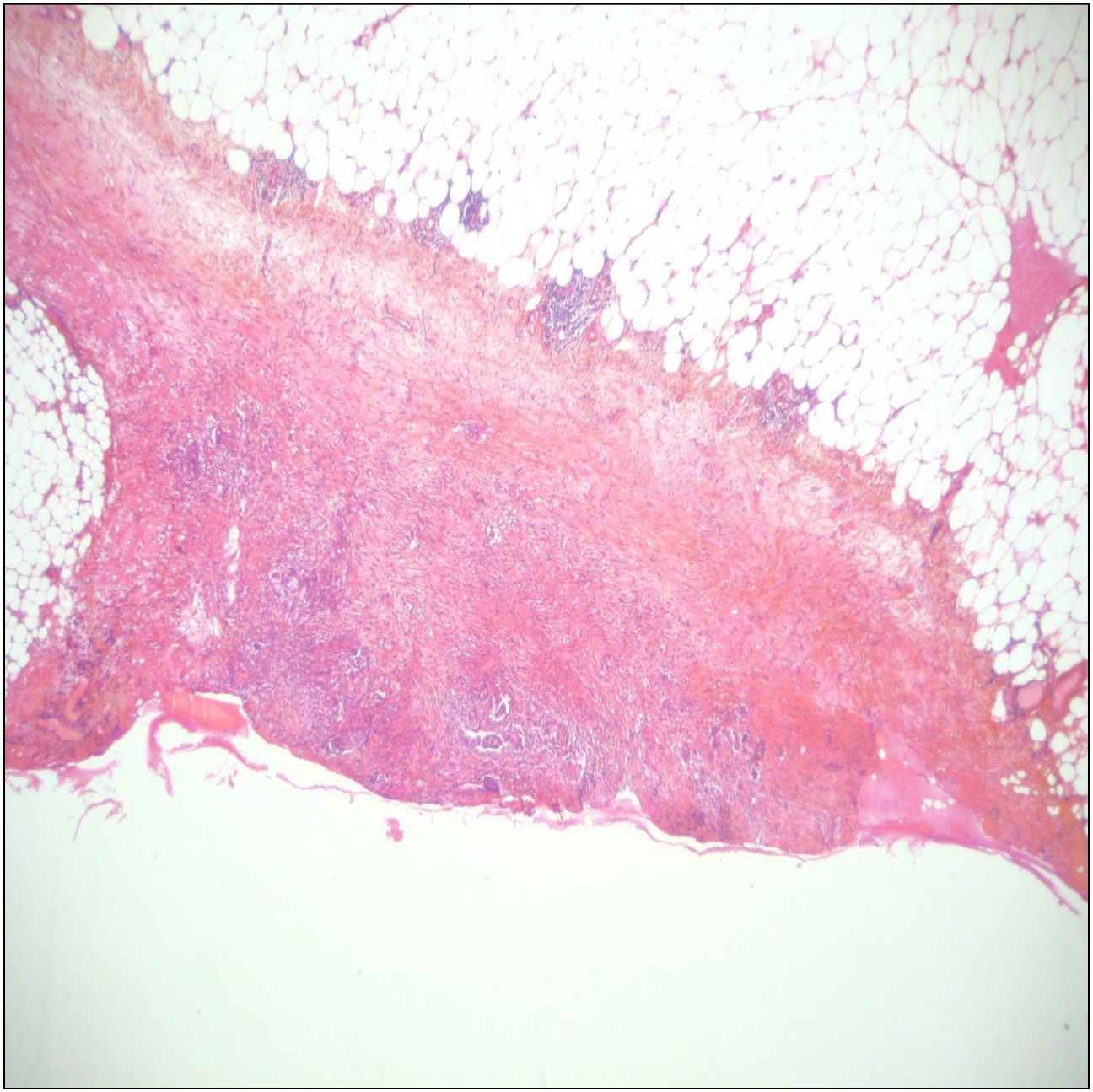




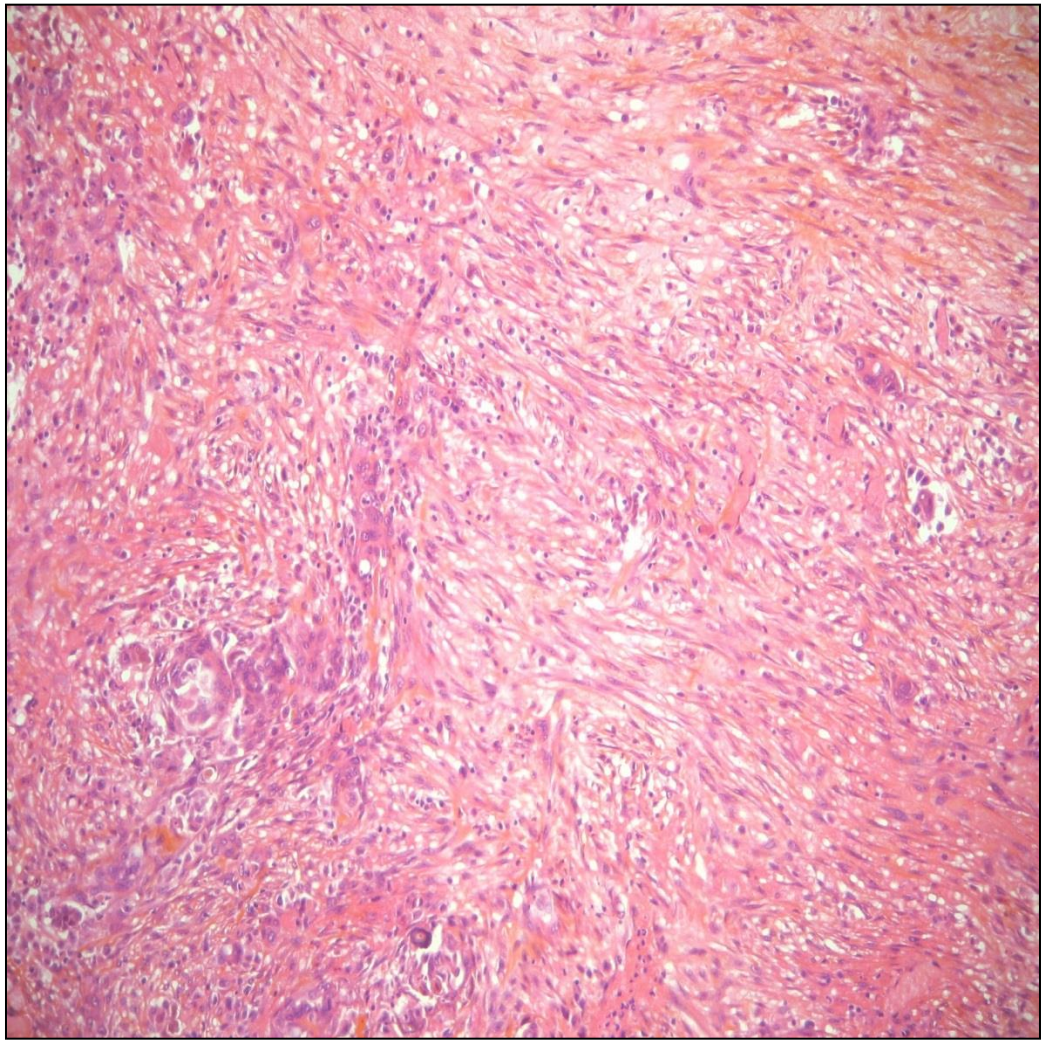
# Desmoplastic-type non invasive implants

- To the peritoneal surface
- No invasive
- inflammatory, myofibroblastic and calcospheritis elements+++





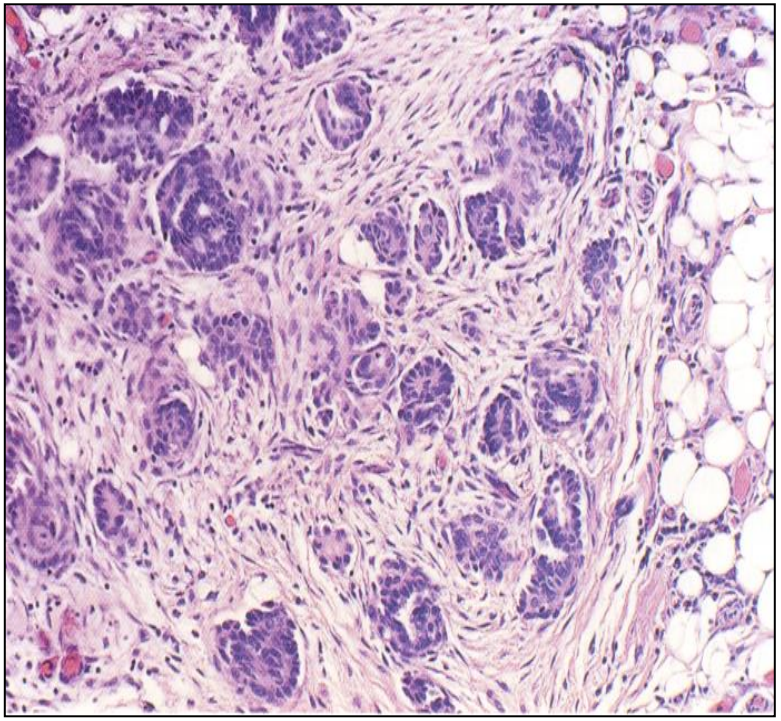
# Desmoplastic-type non invasive implants

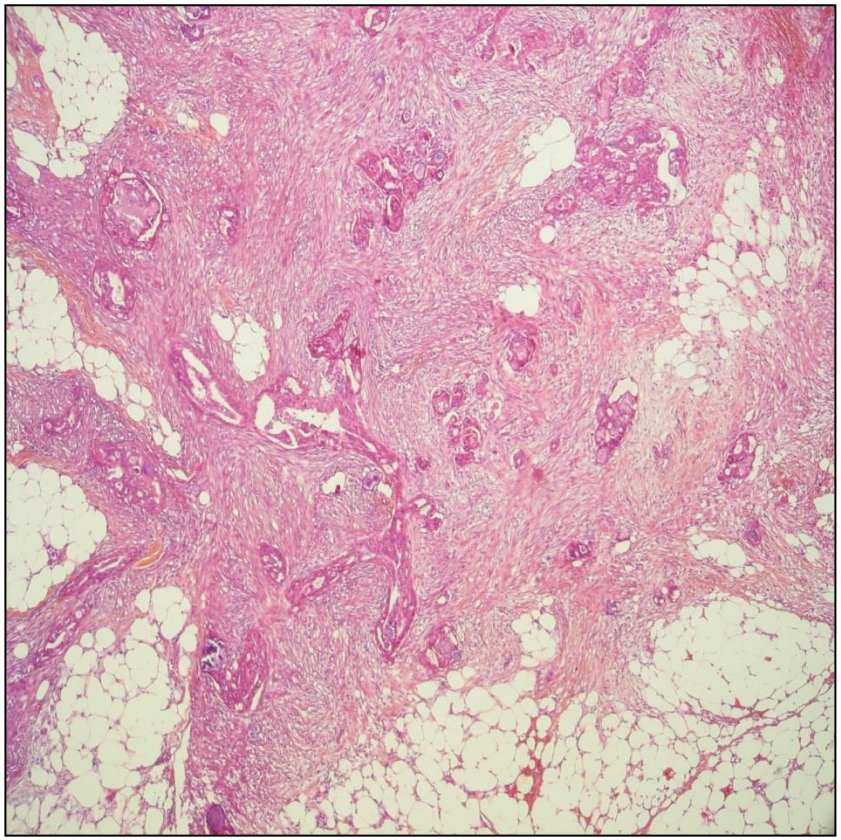


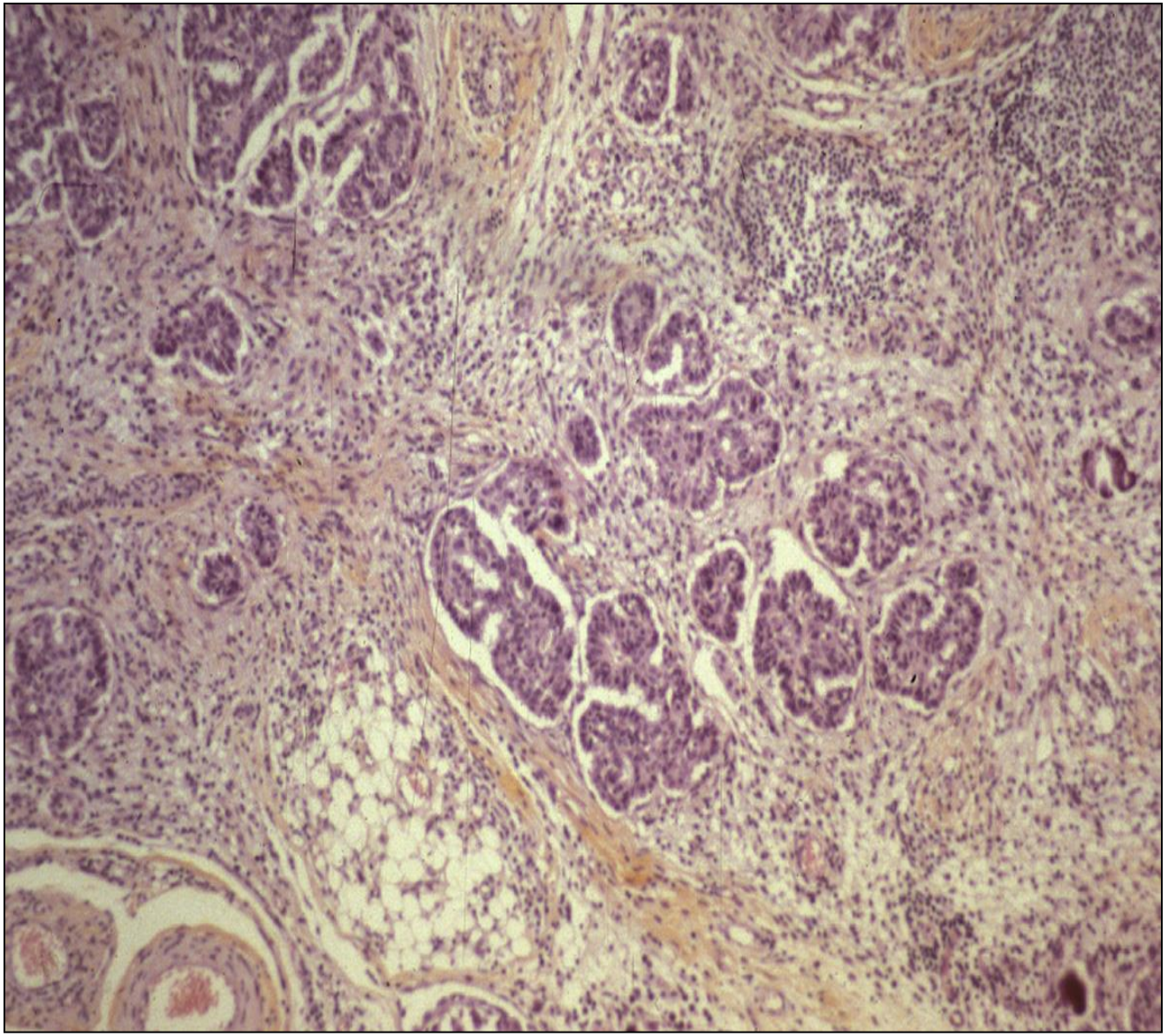
# Serrous borderline tumours

- Invasive implants : 12%
  - Micropapillae and/or cribriform pattern
  - Stroma
  - Atypia
  - Unequivocal invasion ++++
  - Epiploon
  - At low magnification+++

- infiltration of adipose tissue







# Classification of Extraovarian Implants in Patients With Ovarian Serous Borderline Tumors (Tumors of Low Malignant Potential) Based on Clinical Outcome

*Jesse K. McKenney, MD,* C. Blake Gilks, MD, w Steve Kalloger, MSc, w and Teri A. Longacre, MD**

*(Am J Surg Pathol 2016;40:1155–1164)*

- The classification of extraovarian disease into invasive and noninvasive implants predicts patient outcome in patients with high-stage ovarian serous borderline
- However, the morphologic criteria used to classify implants vary between studies.
- Study with follow-up data comparing the prognostic significance of competing criteria.
- Peritoneal and/or lymph node implants from 181 patients with high-stage serous borderline tumors were evaluated independently by 3 pathologists
- 8 morphologic features: micropapillary architecture; glandular architecture; nests of epithelial cells with surrounding retraction artifact set in densely fibrotic stroma; low-power destructive tissue invasion; single eosinophilic epithelial cells within desmoplastic stroma; mitotic activity; nuclear pleomorphism; and nucleoli.
- Follow-up of 156 (86%) patients ranged from 11 to 264 months (mean, 89mo; median, 94mo).

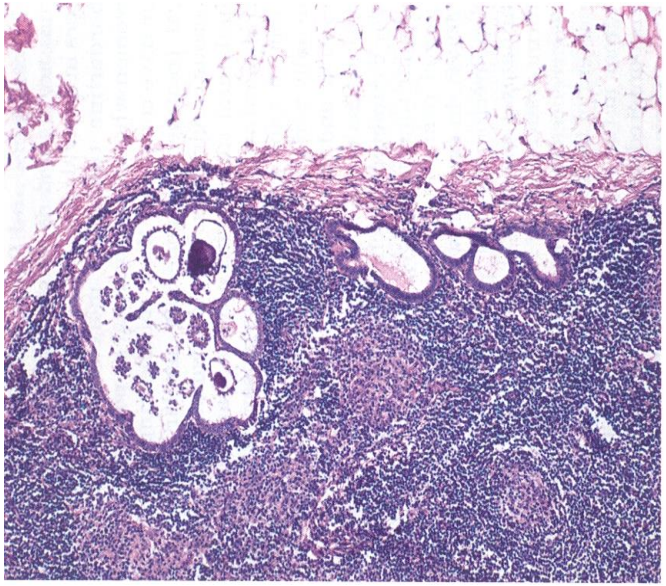
# Results

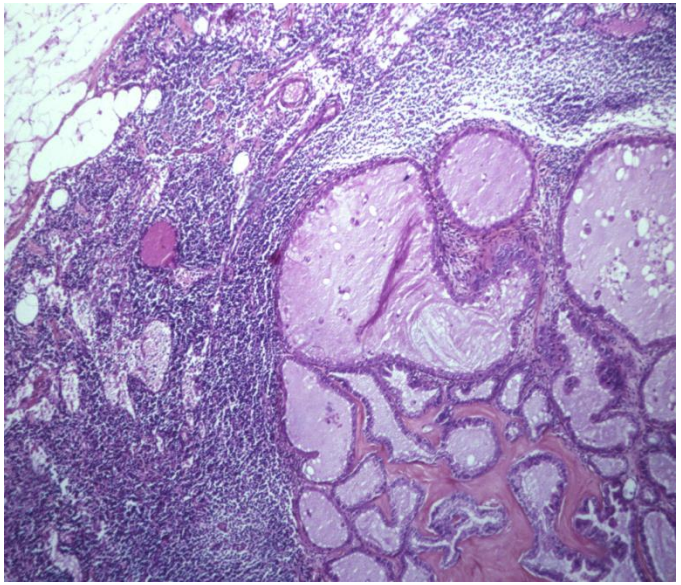
- Implants with low-power destructive invasion into underlying tissue were the best predictor of adverse patient outcome with 69% overall and 59% disease-free survival ($P<0.01$).
- In the evaluation of individual morphologic features, the low-power destructive tissue invasion criterion also had excellent reproducibility between observers ($k=0.84$).

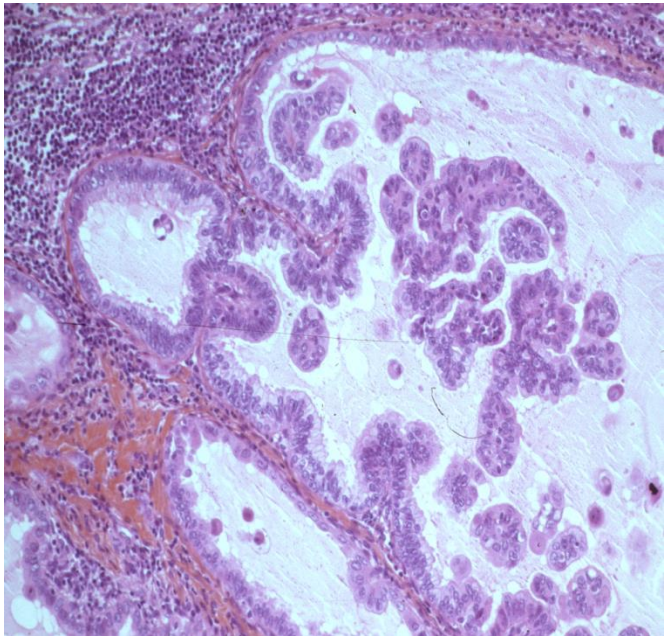
# conclusion

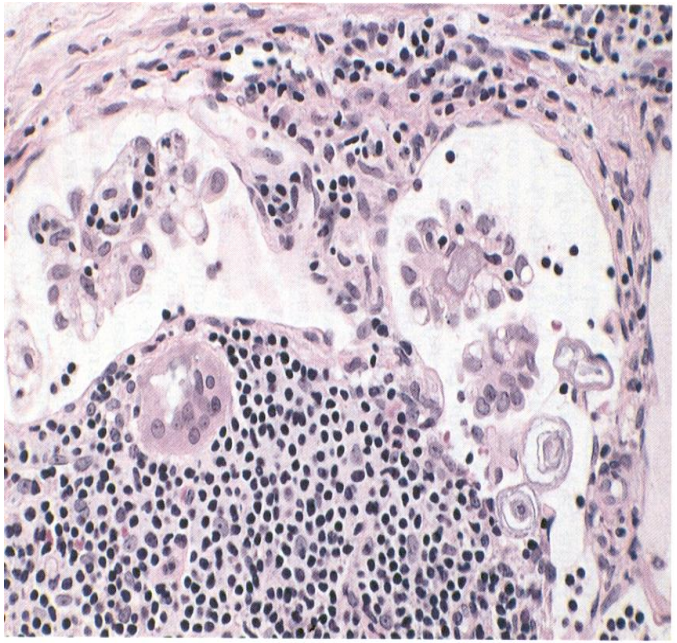
- Extraovarian implants with micropapillary architecture or solid nests with clefts were often associated with tissue invasion but did not add significant prognostic value beyond destructive tissue invasion alone.
- Even though the low-power destructive tissue invasion criterion has excellent interobserver reproducibility, it is further recommended that the presence of an invasive implant
  be confirmed by at least 2 pathologists
- the designation low-grade serous carcinoma is recommended.

# « implants » : pelvic lymph nodes









# Prognosis : serous borderline tumours

- Serous borderline tumours (Seidman et Kurman, Human Pathol, 2000)

**micro-invasion**

- 101 cases with overall survival 100%
- No prognostic significance
- No effect on survival
- Sampling++++

**micropapillary variant**

- > 5mm
- Non-invasive low-grade serous carcinoma? (Kurman) or borderline tumour ?
- No effect on survival
- Extra-ovarian disease +++
- Invasive implants +++

# Prognosis : serous borderline tumours

- Serous tumours (Seidman et Kurman, Human Pathol, 2000)

  stage (25% stades II and III)
  - Non-invasives implants
    - *366 cas (78%): 95.3%* overall survival
  - **Invasive peritoneal implants**
    - *104 cas (22%): 66% overall survival*
  - Lymph nodes
    - *80 cases*
    - *98% overall survival*
    - *Endosalpingiosis++++*

# Prognosis

- Invasive implants : +++++

- Microinvasion : no
- Micropapillary variant :
  - Increased risk of implants

# Conclusion

- Most common borderline tumour
- OMS 2014

Serous borderline tumour-micropapillary variant =

**Non invasive** low-grade serous carcinoma

Invasive implants : low-grade serous carcinoma

- But prognosis : excellent++++
- ?????