BREAST PATHOLOGY 1

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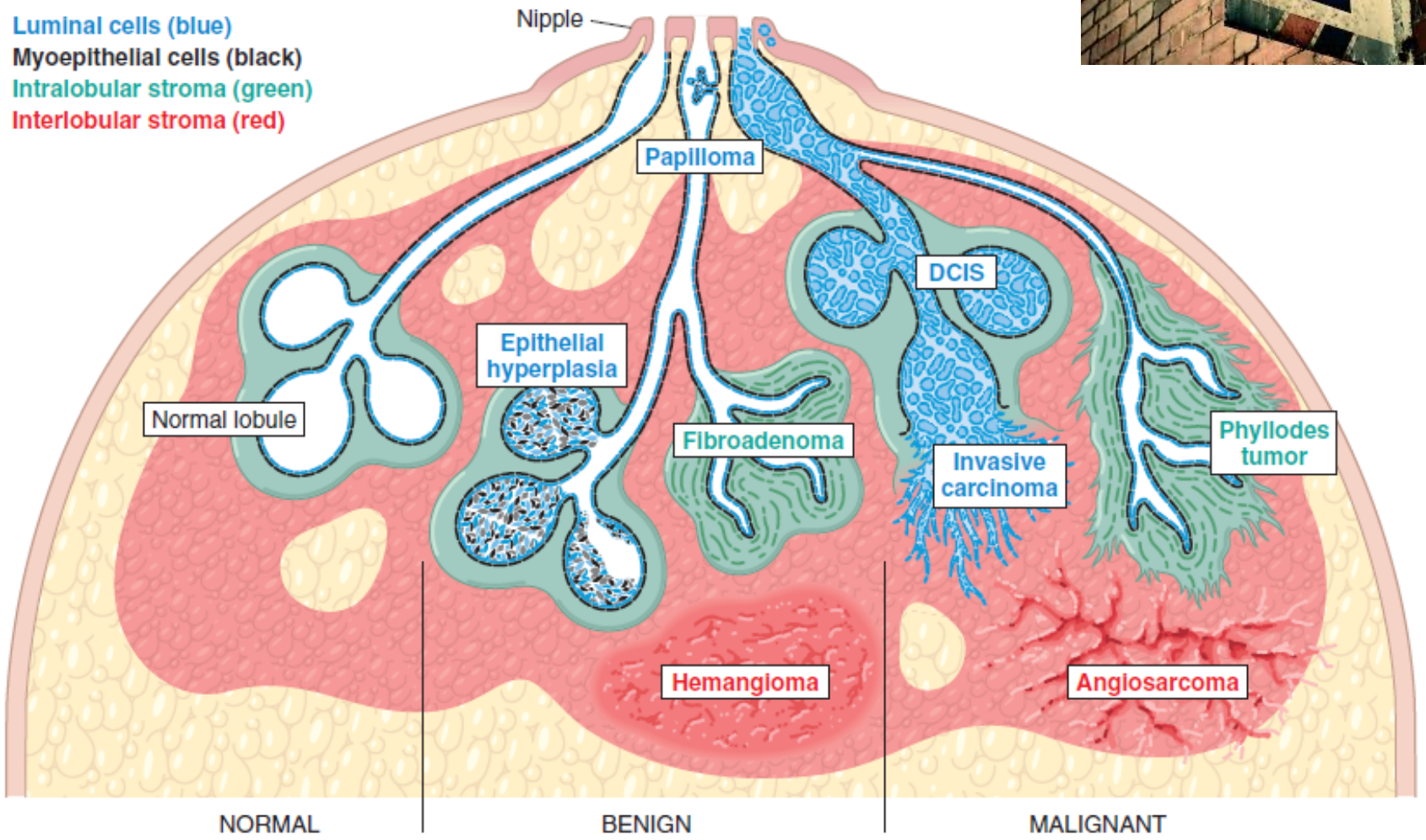
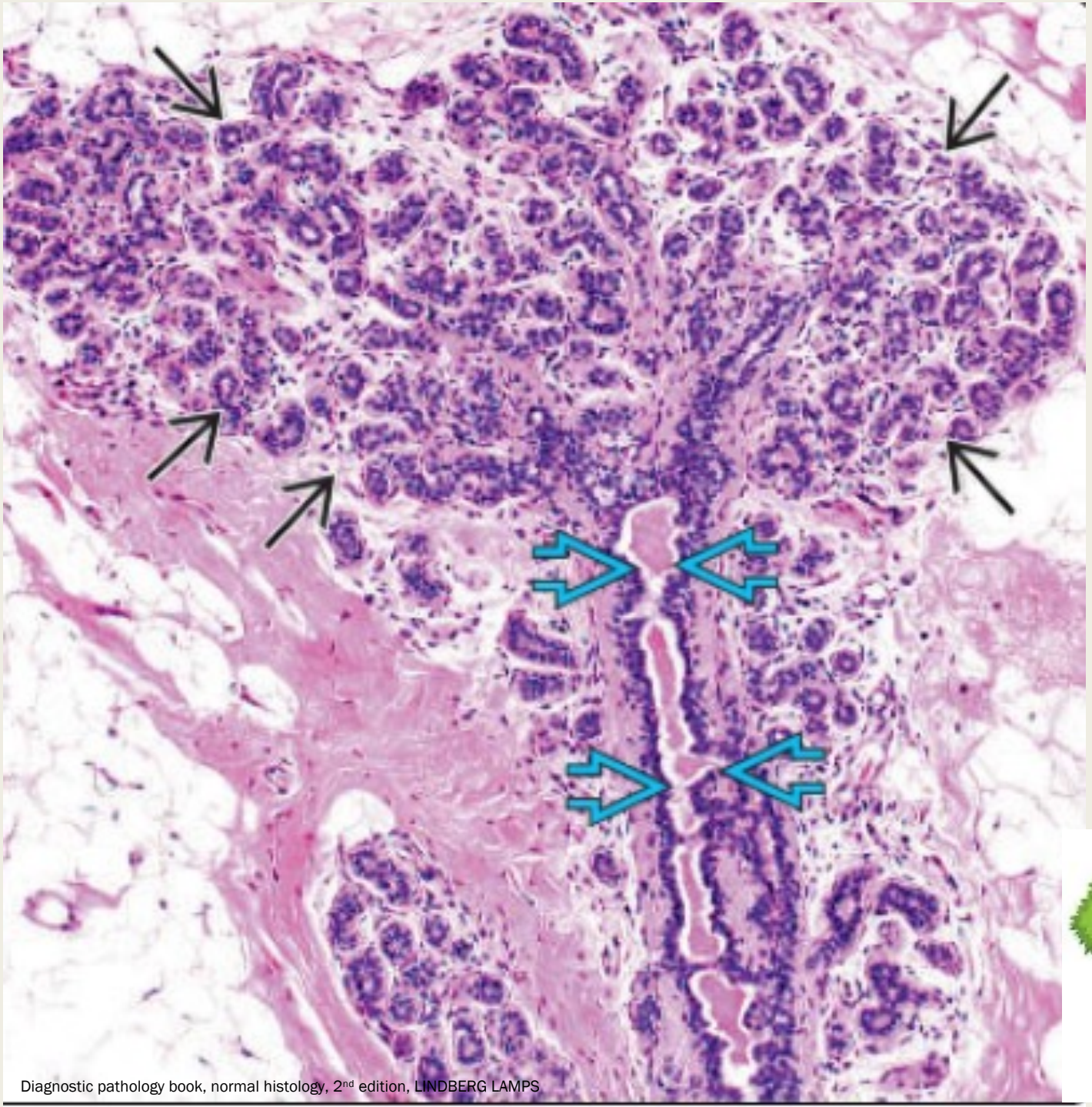
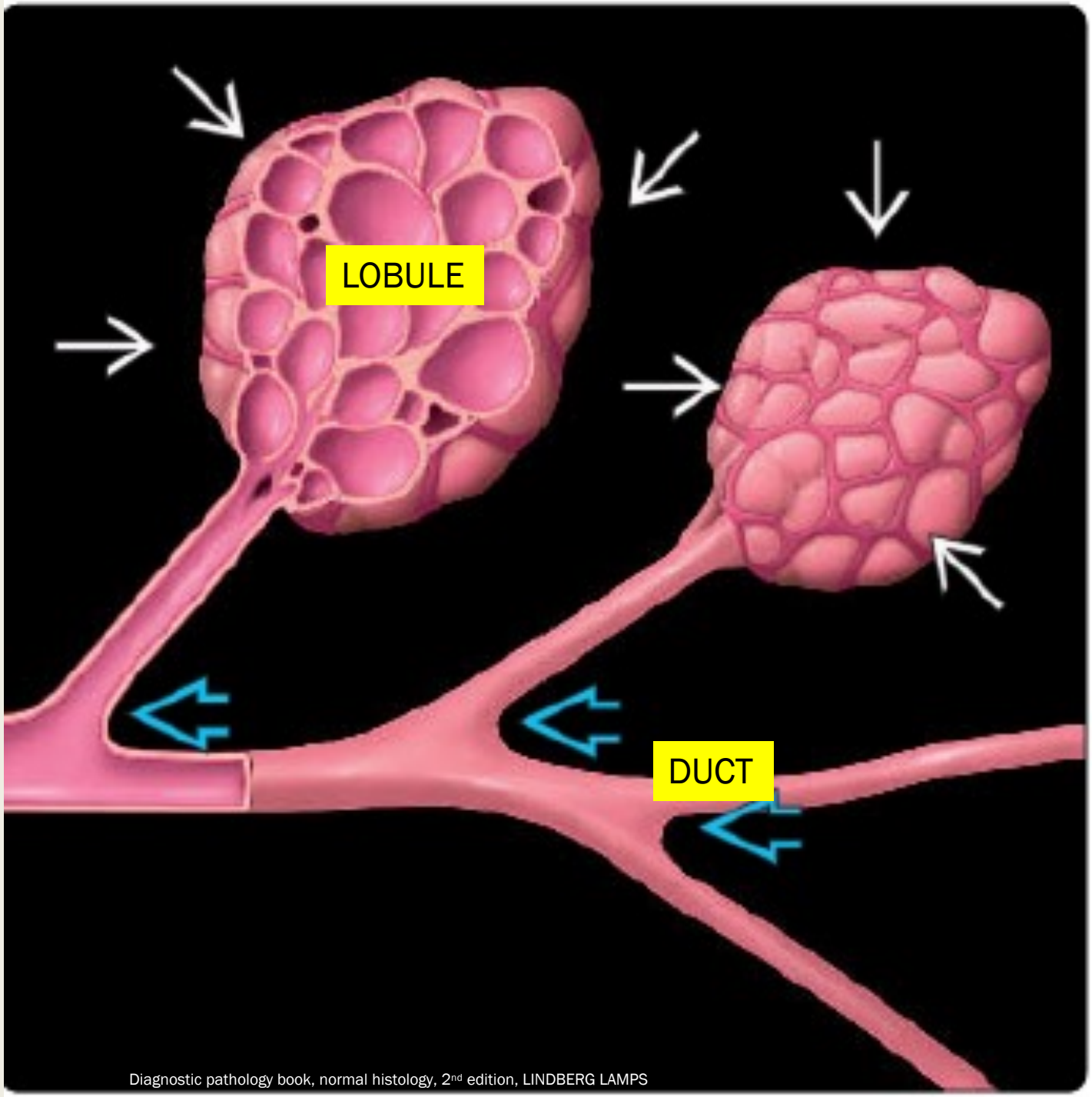

Luminal cells (blue)
Myoepithelial cells (black)
Intralobular stroma (green)
Interlobular stroma (red)
Nipple
Papilloma
DCIS
Epithelial hyperplasia
Normal lobule
Fibroadenoma
Invasive carcinoma
Phyllodes tumor
Hemangioma
Angiosarcoma
NORMAL
BENIGN
MALIGNANT



Diagnostic pathology book, normal histology, 2nd edition, LINDBERG LAMPS



Diagnostic pathology book, normal histology, 2nd edition, LINDBERG LAMPS

Regardless of the symptom:

- The underlying cause is **benign** in >90% of cases.

- The likelihood of malignancy increases with **age**:
  - *the risk of nipple discharge being due to cancer increases from 7% in women <60 years vs. 30% in women >60.*

  - *only 10% of palpable masses in women <40 years are carcinomas vs. 60% in women >50.*

- Of women with cancer:
  - *about 45% have symptoms*
    - Palpable mass>>>>> pain> nipple discharge > inflammatory changes
  - *the remainder come to attention through screening tests*

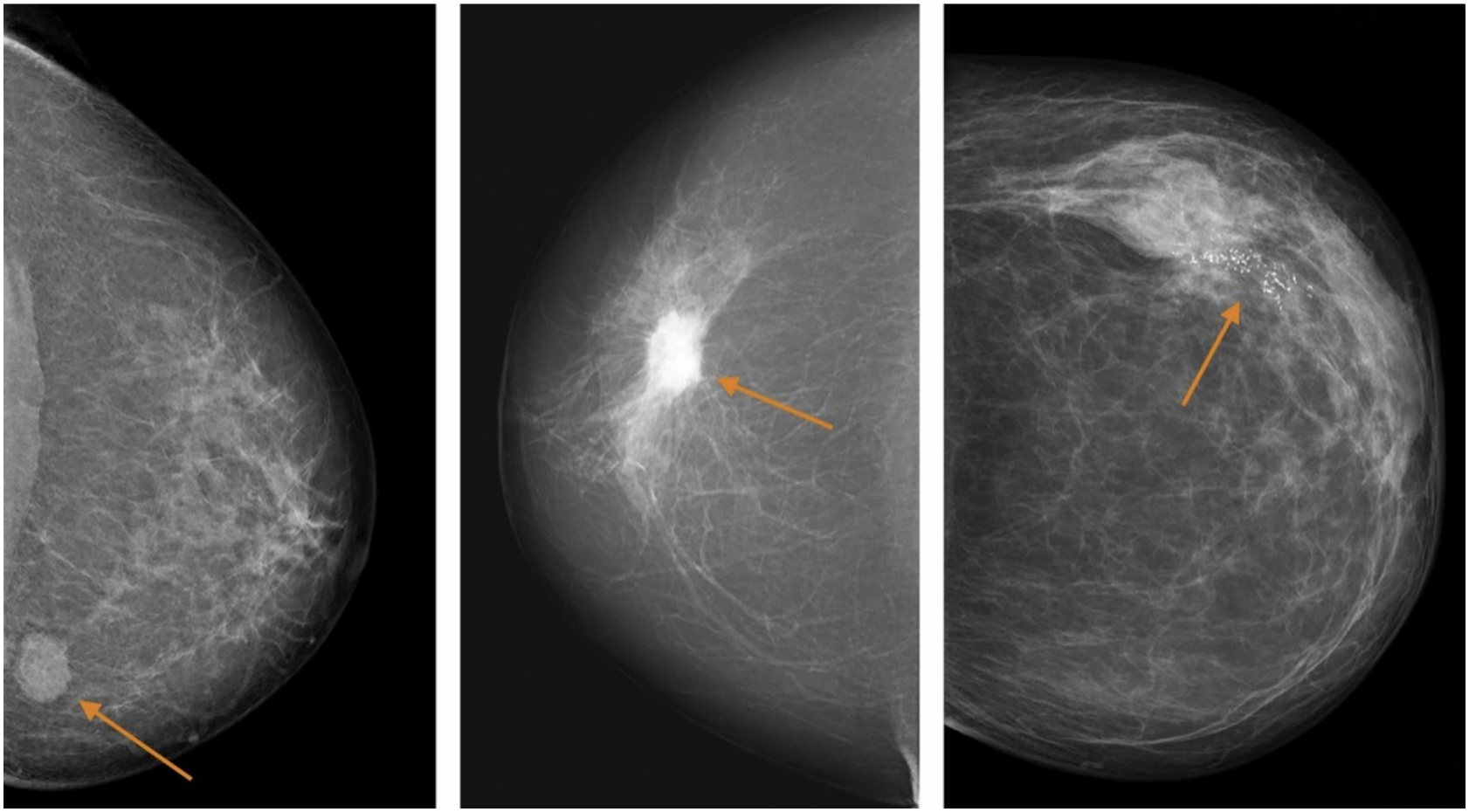
Women with breast cancer!

Mammographic screening:

- detects early, nonpalpable asymptomatic breast carcinomas before metastasis.

- the average size of invasive carcinomas detected by mammography is ≈ 1 cm, at this stage only 15% will have metastasized to regional lymph nodes

- The sensitivity and specificity of mammography increase with age→ due to replacement of the fibrous, radiodense tissue of young women with the fatty, radiolucent tissue of older women



New Breast Cancer Screening Guideline

for women with average risk

AGE 40

Talk with your doctor about when to begin screening. **Women should have the opportunity to begin screening** if they choose.

AGE 45

Begin **yearly mammograms** by age 45.

AGE 55

Transition to mammograms **every other year** at age 55 or continue with annual mammography, depending on your preferences.

AGE 55 +

Continue to have regular mammograms for as long as you're in good health.

LEARN MORE ABOUT BREAST CANCER SCREENING

www.yakimamemorial.org

CLINICAL PRESENTATIONS OF BREAST DISEASE:

- **Pain** (mastalgia or mastodynia):

- common
- Related to menses (cyclic edema and swelling).
- Localized due to ruptured cyst, or physical trauma.

Almost all painful masses are **benign** except for 10% of cases that relates to cancers

- **Inflammation**:

- Rare, causes edema and erythema.
- Mostly caused by infections (during lactation and breastfeeding).
- An important mimic of inflammatory breast cancer

❑ Nipple discharge:

- **Normal:** when small in quantity and bilateral.
- **Milky discharges (galactorrhea):**
  - *are associated with elevated prolactin levels (pituitary adenoma), hypothyroidism, or endocrine anovulatory syndromes, patients taking OCPs, tricyclic antidepressants, methyldopa, or phenothiazines.*
- **Bloody or serous discharges**:
  - *commonly due to large duct papillomas.*
  - *During pregnancy, result from the rapid growth and remodeling of the breast.*
- **BUT spontaneous, unilateral, and bloody discharge increases concern for malignancy.**

- **Palpable masses:**

- 95% are benign
- all palpable masses require evaluation.
- **The most common palpable lesions are cysts, fibroadenomas, and invasive carcinomas**
- generally detected when they are 2 to 3 cm in size.

- **Gynecomastia:**

- The only common breast symptom in **males**.
- There is an increase in both stroma and epithelial cells resulting from an imbalance between **estrogens**, which stimulate breast tissue, and **androgens**, which counteract these effects.

STROMAL NEOPLASMS

Stromal neoplasms:

- The two types of stroma: intralobular and interlobular

- Tumors of the **Intralobular** stroma:
  - ***Include fibroadenoma and phyllodes tumor***

  - ***biphasic tumors****: composed of both stromal cells and epithelial cells*

- Tumors arising from **Interlobular** stroma:
  - ***Monophasic tumors*** *(only mesenchymal cells)*
  - *same types of tumors found in* ***other sites*** *of the body (lipomas and angiosarcomas) as well as tumors* ***arising more commonly in the breast*** *(pseudoangiomatous stromal hyperplasia and myofibroblastomas).*

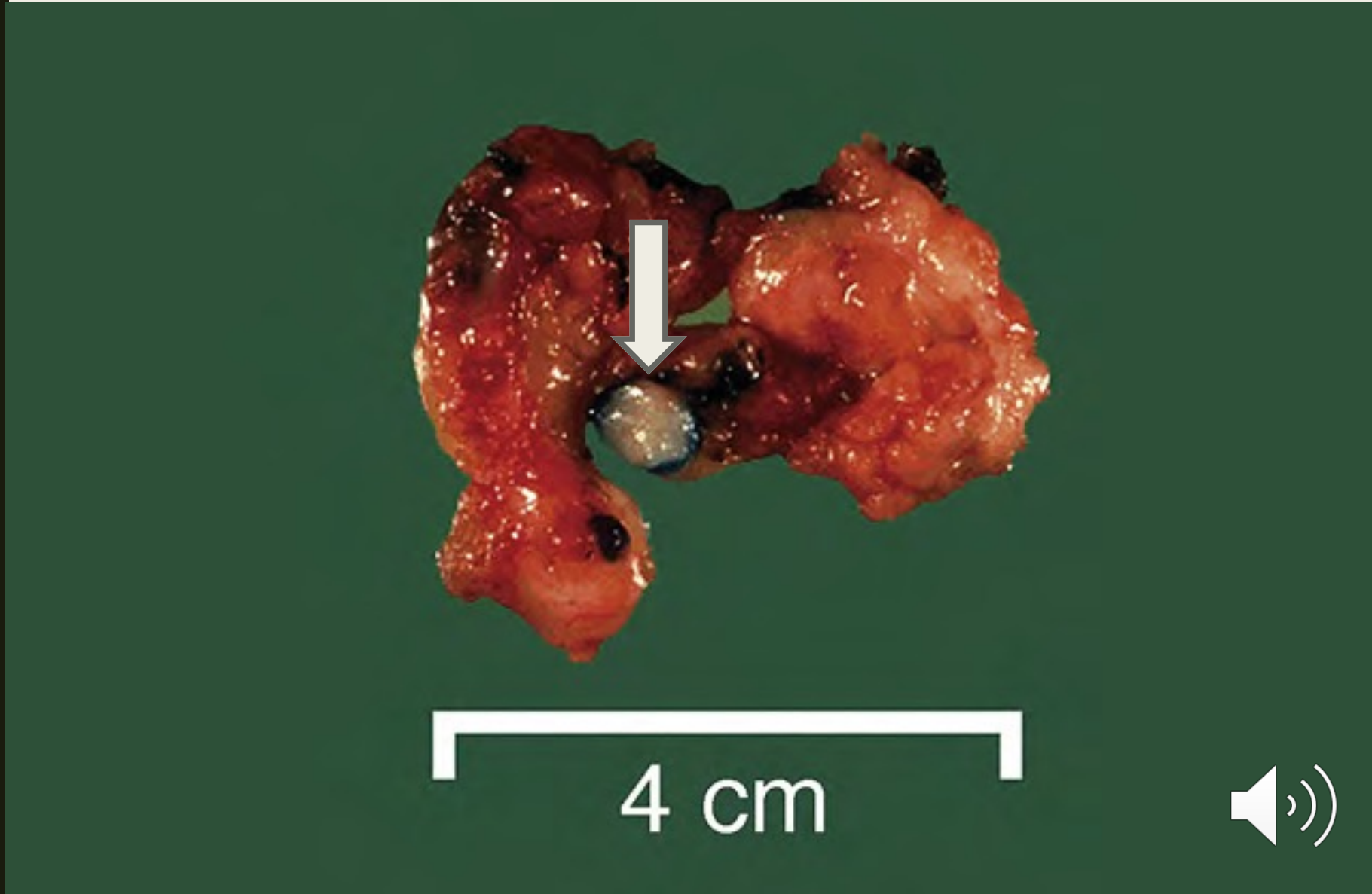
- The only malignancy derived from **interlobular** stromal cells → **angiosarcoma**

Fibroadenoma

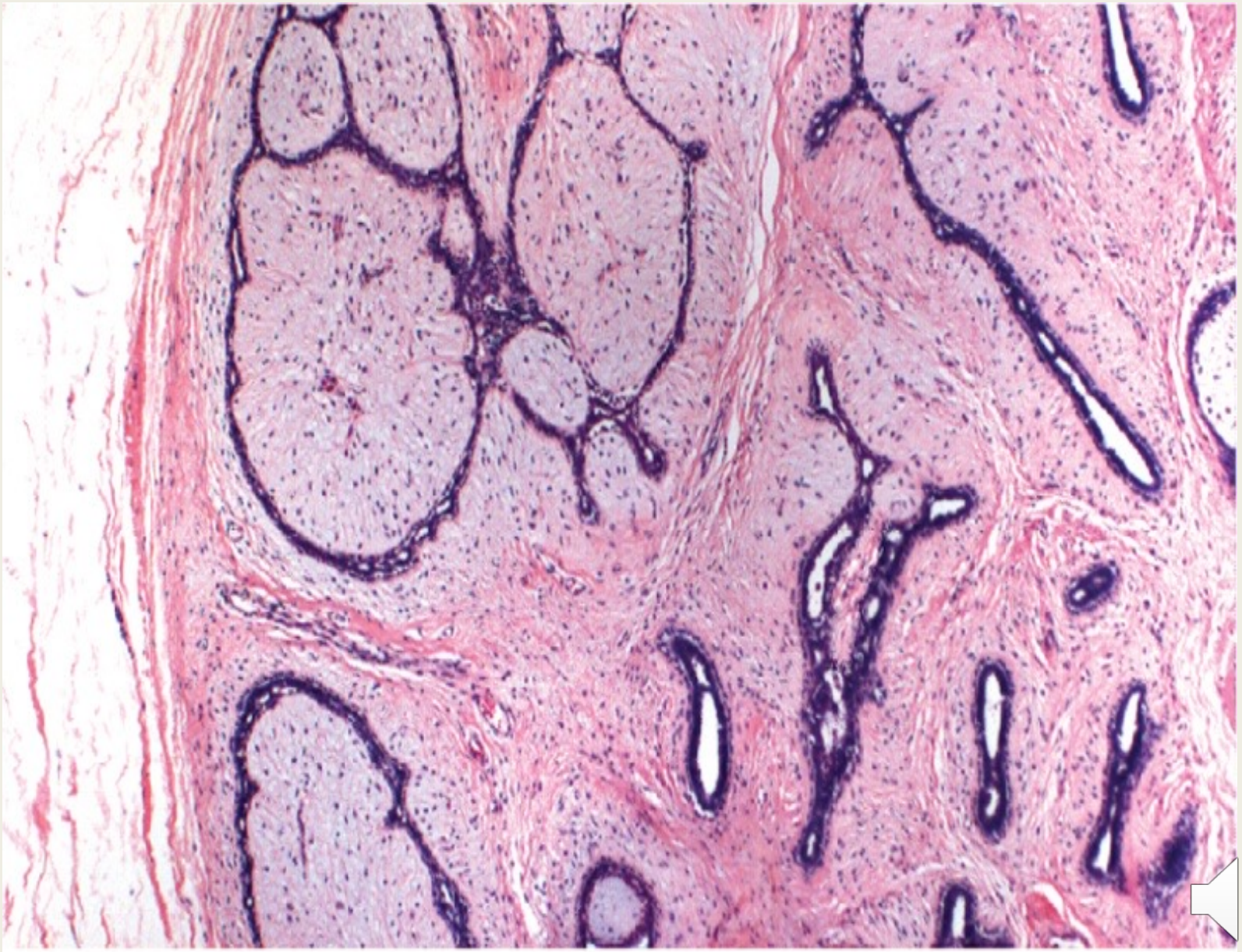
- The **most common benign neoplasm** of the female breast.
- Related to **estrogen activity**:
  - *may enlarge late in the menstrual cycle and during pregnancy.*
  - *After menopause usually regress and calcify.*

- Peak 20s and 30s
- discrete, solitary, freely movable nodule, (1-10 cm).

Fibroadenoma, gross



FIBROADENOMA

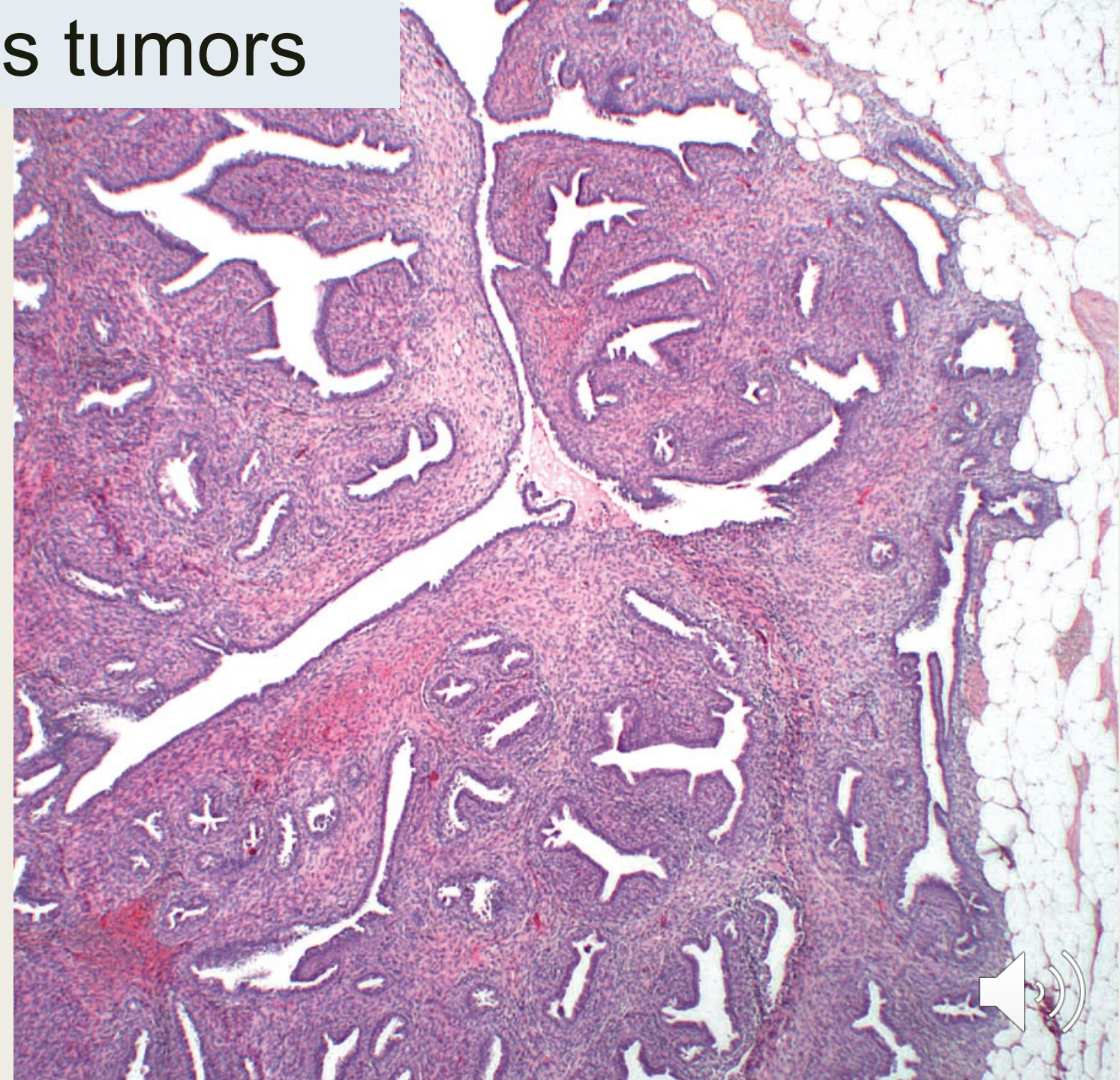


Phyllodes Tumor

- Much less common than fibroadenomas
- Arise from the intralobular stroma and not from preexisting fibroadenomas.
- mostly in the sixth decade
- Leaf-like clefts and slits➔
  - *due to the presence of nodules of proliferating stroma covered by epithelium*

- Classified according to the histologic findings into:
  - *Benign (most common 60—75%)* → rare recurrence & do not metastasize.
  - *Borderline (15-26%)* → higher risk of local recurrence than benign phyllodes tumor . Risk of metastasis present but very low
  - *Malignant (8-20%)* → 23 - 30% risk of local recurrence, *9% risk of distant metastasis*

Phyllodes tumors



Epithelial lesions of breast

Benign

- Non proliferative changes:
  - *cyst, fibrosis, adenosis*
- Proliferative diseases without atypia:
  - *epithelial hyperplasia, papilloma, sclerosing adenosis, complex sclerosing lesion*
- Proliferative disease with atypia:
  - *ADH, ALH*

Malignant

- Noninvasive carcinoma:
  - *DCIS, LCIS*
- Invasive carcinoma

benign epithelial lesions:

- The majority are incidental findings detected by mammography.

- **Benign changes are divided into three groups:**
  - ***Nonproliferative changes****: not associated with an increased risk of breast cancer.*
  - ***Proliferative disease without atypia****: polyclonal hyperplasia & associated with 1.5-2 folds increased risk of breast cancer.*
  - ***Proliferative disease with atypia****: monoclonal "**precancers**" & associated with 4-5 folds increased risk of breast cancer in **both** breast*

Nonproliferative Breast Changes (Fibrocystic Changes)

- Common

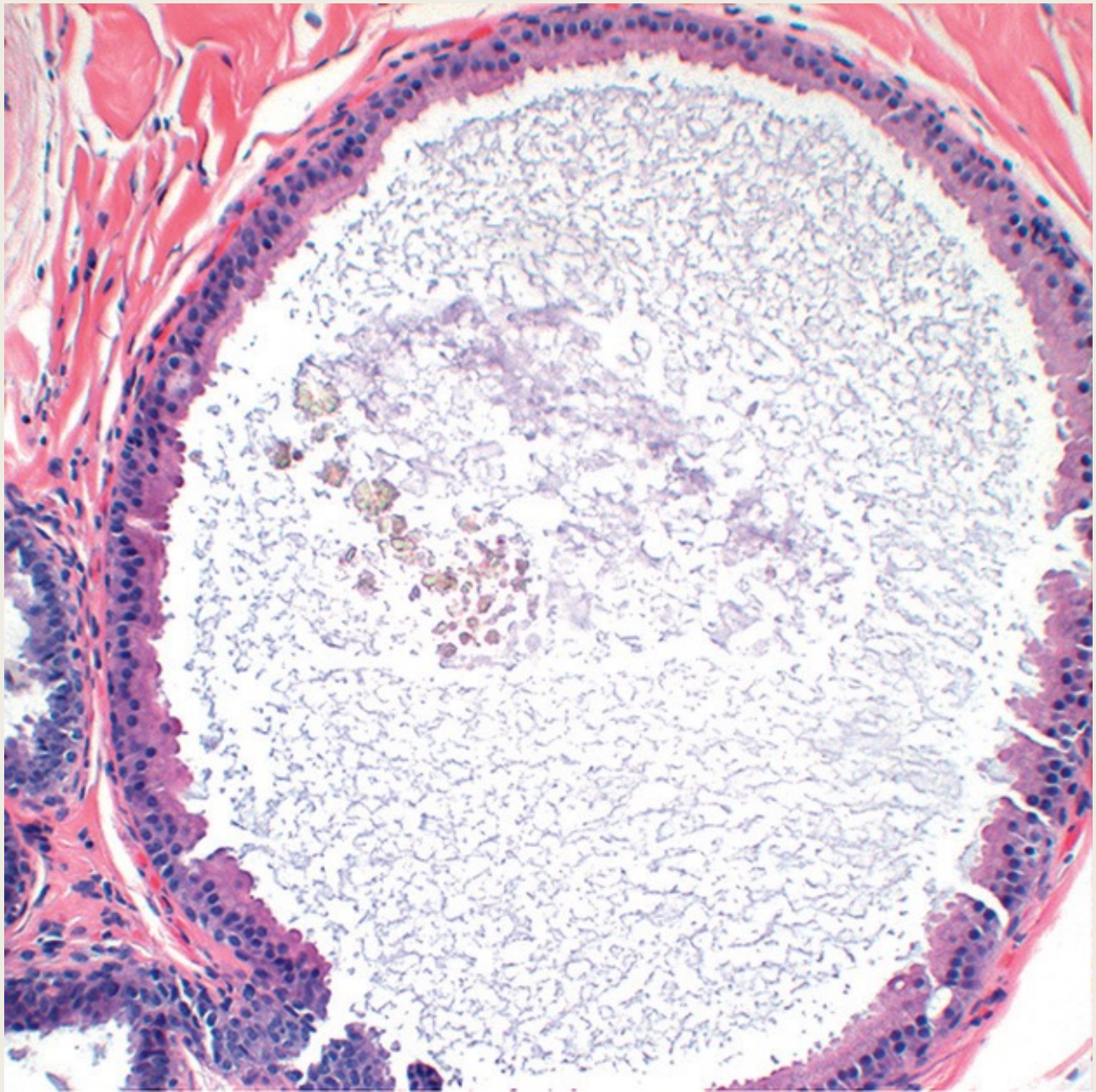
- three principal morphologic changes:

(1) Cysts (most common): lined by layer of luminal cells often show apocrine metaplasia

(2) Fibrosis

(3) Adenosis: Increased number of acini per lobule

Nonproliferative disease. cyst



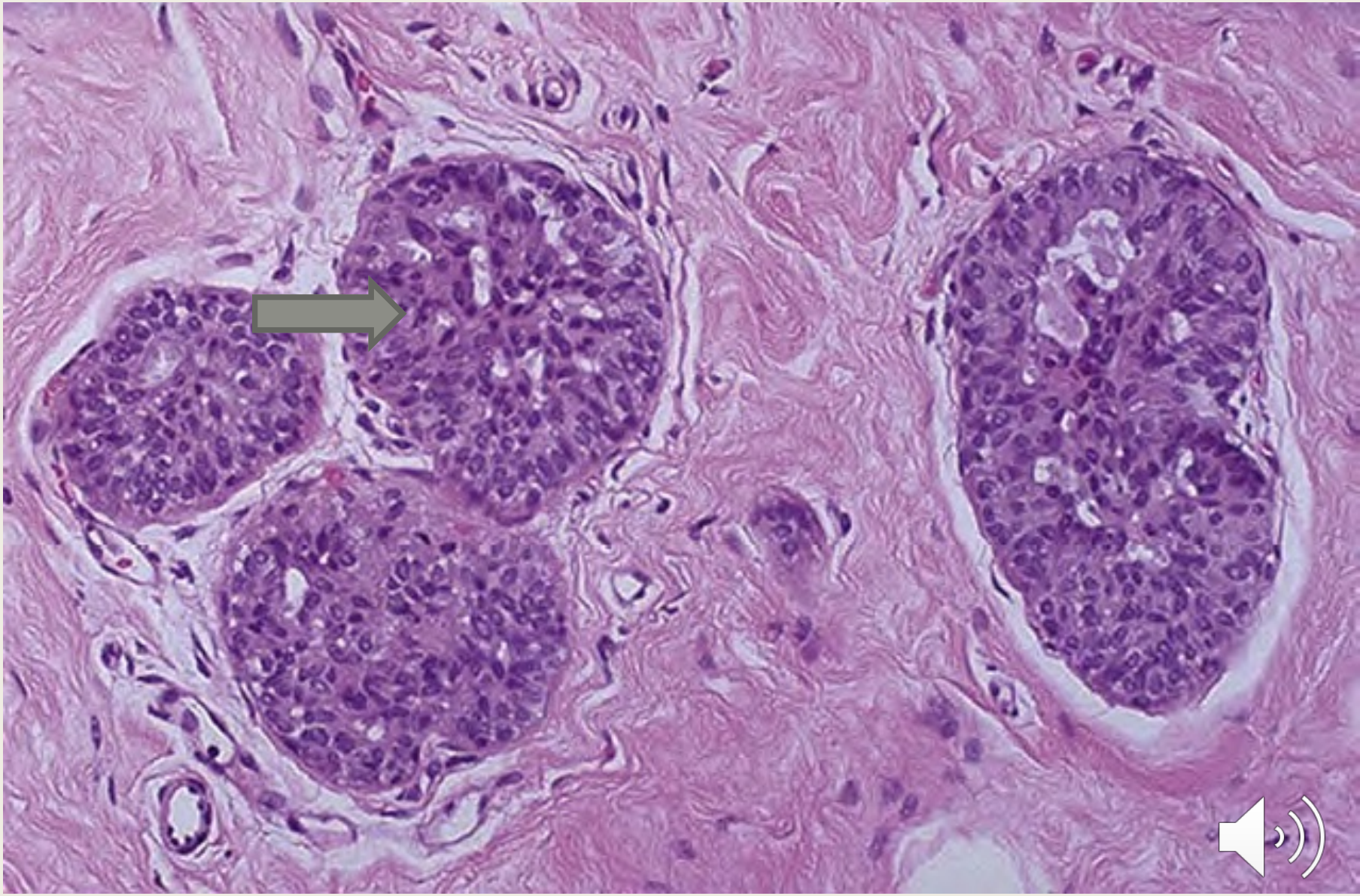
Proliferative disease without atypia

- are predictors of risk but unlikely to be true precursors of carcinoma.

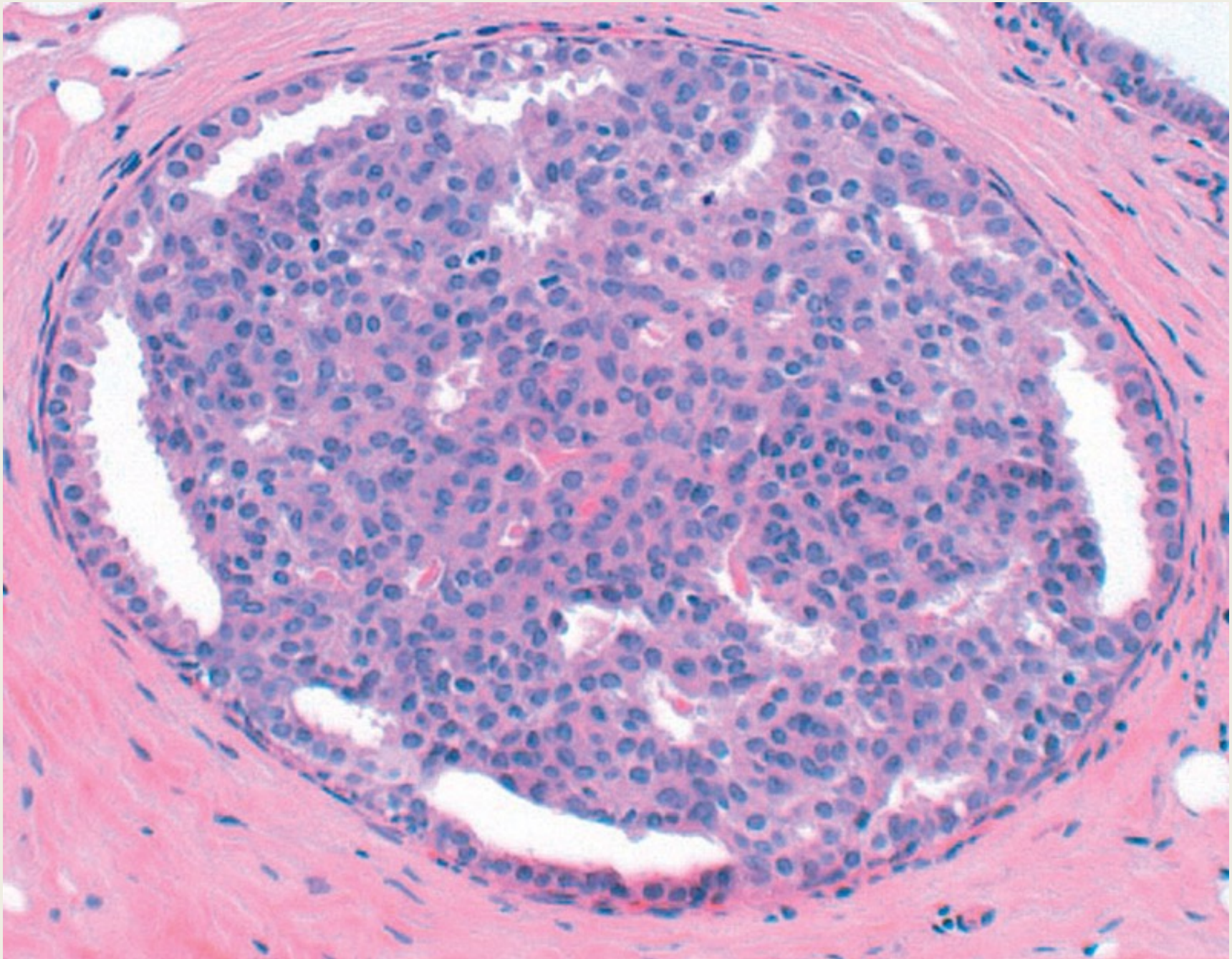
- Includes:
  - ✓ *epithelial hyperplasia*
  - ✓ *sclerosing adenosis*
  - ✓ *complex sclerosing lesion*
  - ✓ *Papilloma*

- Each is associated with varying degrees of epithelial cell proliferation.

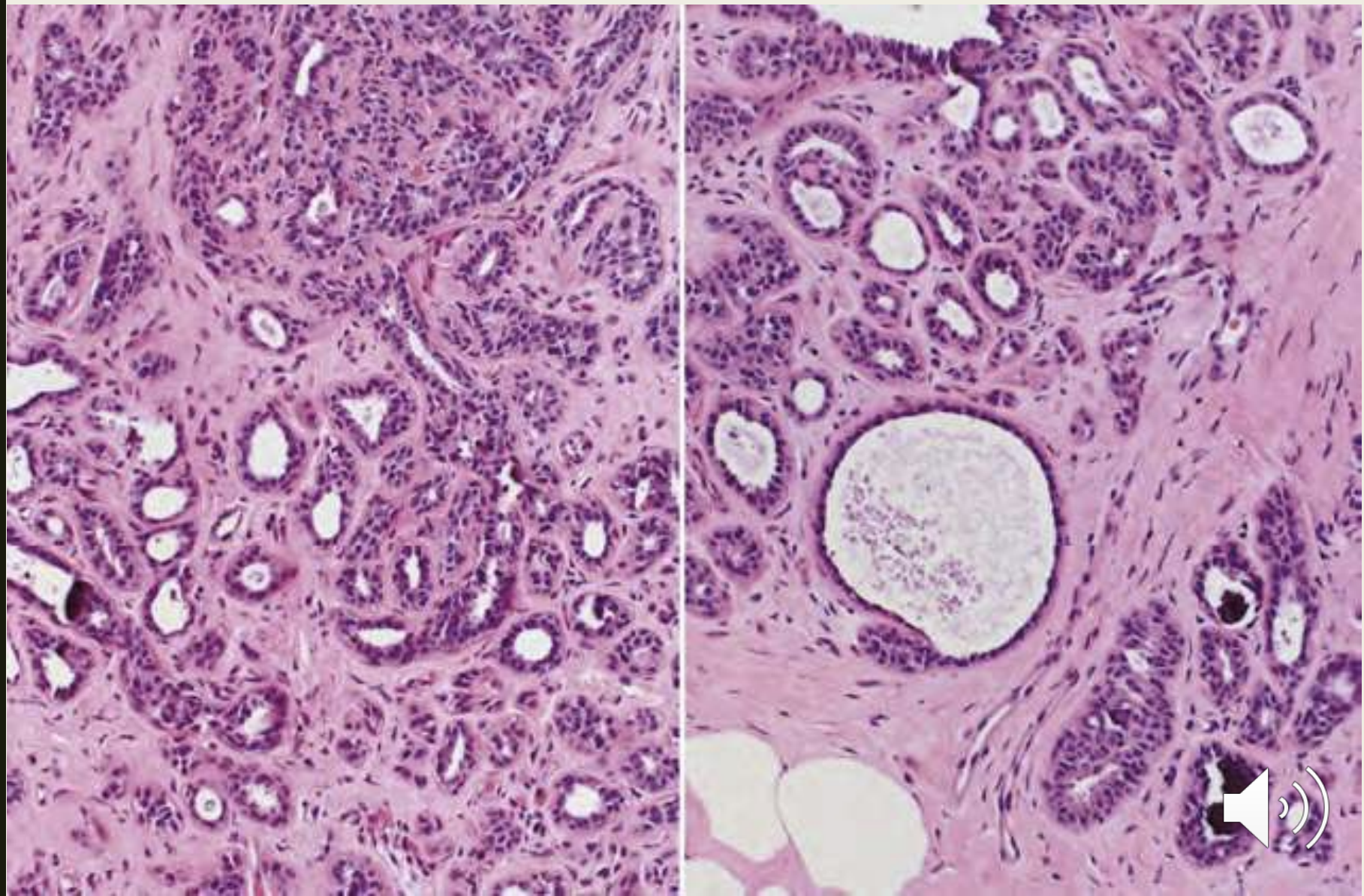
epithelial hyperplasia



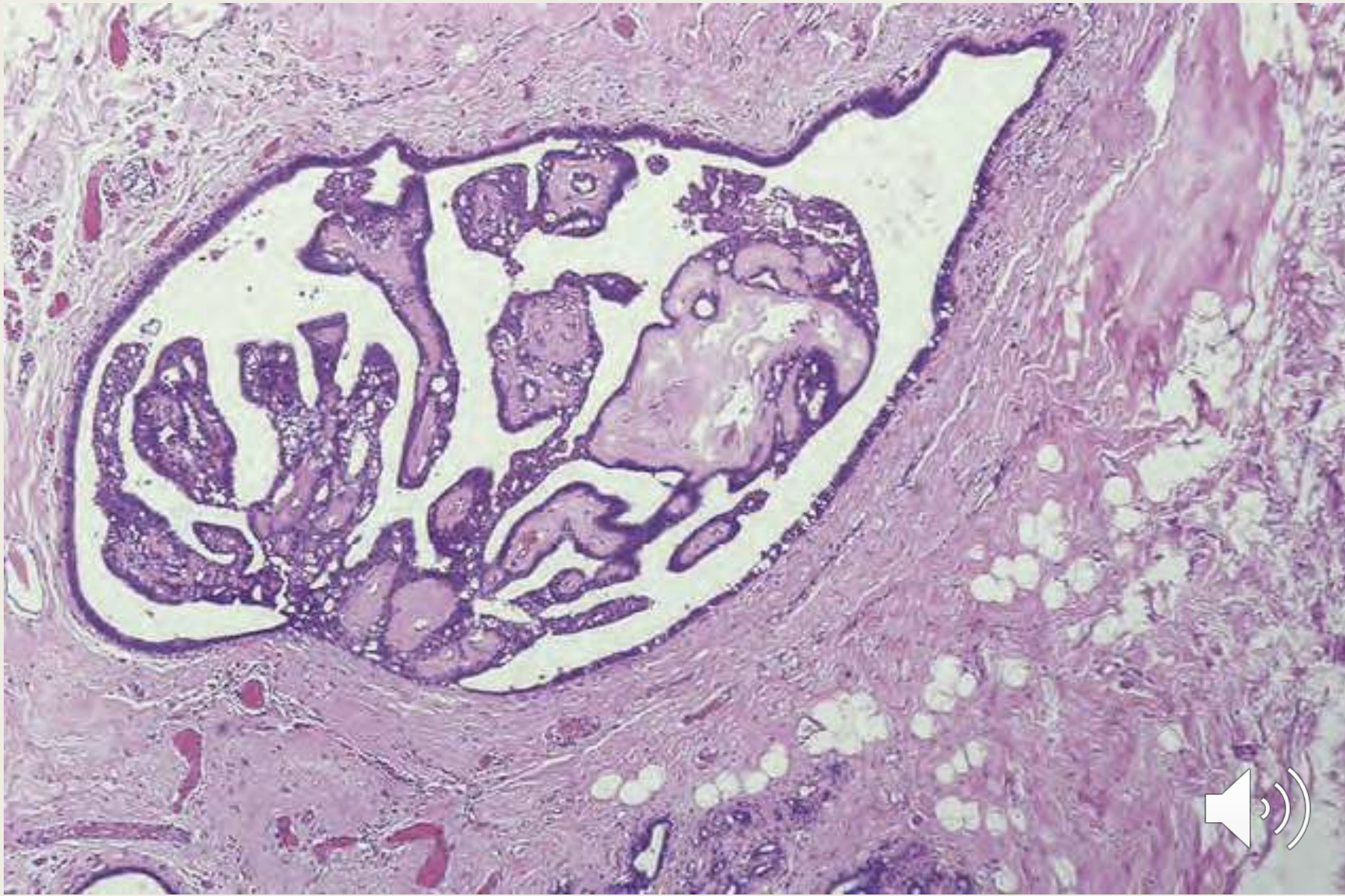
epithelial hyperplasia



Sclerosing adenosis



intraductal papilloma



Proliferative disease with atypia

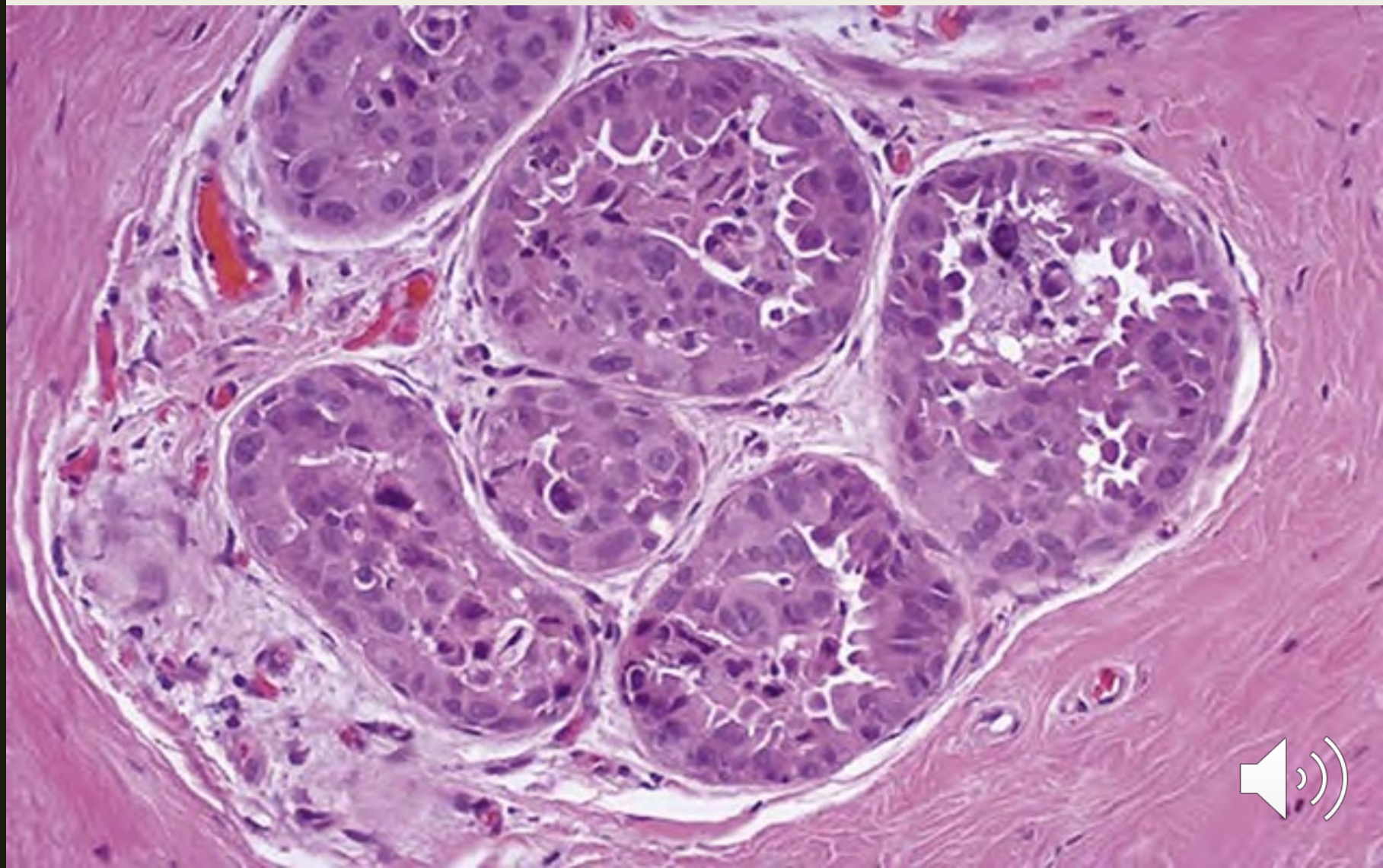
1. atypical lobular hyperplasia (ALH) : resembles lobular carcinoma in situ (LCIS)

2. atypical ductal hyperplasia (ADH): resembles ductal carcinoma in situ (DCIS)

- Associated with a moderately increased risk of carcinoma

- are monoclonal proliferations having some, but not all, histologic features that are required for the diagnosis of carcinoma in situ.

atypical ductal hyperplasia




THANK YOU